CITY OF REDLANDS

CITY COUNCIL
FINANCING AUTHORITY
A G E N D A S
JANUARY 18, 2022

PAUL BARICH
Mayor
EDDIE TEJEDA
Mayor Pro Tempore

VACANT
Council Member
DENISE DAVIS
Council Member
JENNA GUZMAN-LOWERY
Council Member
***
JEANNE DONALDSON
City Clerk
ROBERT DAWES
City Treasurer

CHARLES M. DUGGAN JR.
City Manager
DANIEL J. McHUGH
City Attorney

5:00 p.m. Open Public Meeting, Public Comment (Closed Session)
6:00 p.m. Open Session (Public Meeting)
* * *
City Council Chambers
Civic Center, 35 Cajon Street, Redlands, California

A G E N D A

The following information comprises the agenda for the regular meetings of the City Council of the City of Redlands and the Redlands Financing Authority of the City of Redlands at the times noted below.

TUESDAY, JANUARY 18, 2022

This will be a teleconference meeting; the teleconference locations are as follows:

1. City Council Chambers, Civic Center, 35 Cajon Street, Suite 2, Redlands, California and
2. Grand View Room, Redlands Community Senior Center, 111 West Lugonia, Redlands, CA 92374

Anyone wishing to address the City Council during the meeting may do so at either teleconference location. All votes during the teleconferencing meeting will be conducted by roll call.

***PLEASE NOTE**: Anyone desiring to speak on an agendized item at this meeting may do so during the consideration of that item. Speakers are encouraged to turn in a "Speaker Sign Up Sheet" before the meeting is convened. However, completion of speaker forms is not required to speak before the City Council. Please do not disturb the City Clerk or his assistant while a meeting is in progress. After the meeting has convened, you may submit the speaker form to the Municipal Utilities and Engineering Director. Forms are available prior to the meeting in the Office of the City Clerk or in the Council Chambers during the meeting. Due to time constraints and the number of persons who may wish to give oral testimony, time restrictions are placed on oral testimony. You may wish to make your comments in writing to assure that you are able to express yourself adequately. Comments will be limited to three minutes.*



PLEASE SILENCE CELL PHONES, PAGERS AND OTHER ELECTRONIC COMMUNICATION DEVICES UPON ENTERING THE CHAMBERS

5:00 P.M.

A. **Call City Council Meeting to Order**

B. **Public Comment**
(Any person wishing to provide public comment on a closed session matter may do so at this time.)

C. **Recess City Council Meeting to a Closed Session**

1. Conference with real property negotiators - Government Code §54956.8
(Municipal and Utilities and Engineering Director Harris)

Property:	APNs 0300-451-13-0000, 0300-451-14-0000, 0300-451-24-0000, 0300-451-25-0000; (Property located on Helen Court)
Agency Negotiators:	Charles M. Duggan and John R. Harris
Negotiating Party:	Cathy A. Macknet, Kenneth D. Macknet II, Mark R. Macknet
Under negotiation:	Terms of payment and price of possible property purchase by City

2. Conference with real property negotiators - Government Code §54956.8
(Municipal and Utilities and Engineering Director Harris)

Property:	APNs 0318-061-07-0000, 0318-111-02-0000, 0303-071-14-0000, 0299-321-04-0000
Agency Negotiators:	Charles M. Duggan and John R. Harris
Negotiating Party:	South Mountain Water Company
Under negotiation:	Terms of payment and price of possible property purchase by City

6:00 P.M.

D. **Reconvene City Council Meeting**

1. 2021 By-District Council Member Election Boundaries Draft Map and Current Demographics
(Mayor to declare meeting open as a public hearing)
(Development Services Director Desatnik)

E. ***Invocation by Council Member Guzman-Lowery - Pledge of Allegiance***
(In keeping with long-standing traditions of legislative invocations, this City Council meeting may include a brief invocation. Such invocations are not intended to proselytize or advance any one, or to disparage any other, faith or belief. Neither the City nor the City Council endorses any particular religious belief or form of invocation.)

F. **City Council Appointment to Fill Council Member Vacancy in Council District 5**

a. Consideration of Council Member Appointment to the City Council (Mayor Barich and Mayor Pro Tem Tejeda)
b. Swearing in of new Council Member (City Clerk Donaldson)
c. Comments from new Council Member
d. Recess City Council Meeting for five minutes (Mayor Barich)

G. **Closed Session Report**
(No reportable action taken in closed session unless otherwise announced by the City Attorney at this time.)

H. **Public Comments - City Council**
(At this time, the City Council will provide an opportunity for the public to address them on any subject, within the jurisdiction of the City Council, which is not already scheduled on this agenda. However, any matter that requires action will be referred to staff for a report and possible action at a subsequent meeting. Comments will be limited to three {3} minutes.)

I. **Consent Calendar**
(The following routine items have been recommended for approval and will be acted upon simultaneously unless separate discussion and/or action is requested by a Councilmember or a member of the audience.)

1. Approve minutes of the regular meeting of December 21, 2021 (City Clerk Donaldson)

2. Report regarding Emergency Resolution No. 8065 proclaiming the existence of a local emergency in response to COVID-19 (Coronavirus Disease 2019) (Interim Fire Chief Sessler)

3. Approve Additional Appropriations of 2020-21 Year-End Encumbrance and Carryover Balances (Management Services/Finance Director Garcia)

4. Approve a revised request from Crown Castle to consent to the co-location of facilities on an existing cellular tower lease site at the Dearborn Reservoir site, and determine that this action is exempt from environmental review pursuant to Section 15061(b)(3) of the State's guidelines implementing the California Environmental Quality Act (Municipal Utilities and Engineering Director Harris)

5. Approve Resolution No. 8290 to adopt the Yucaipa Sub-Basin Groundwater Sustainability Plan (Basin No. 8-002.07) (Municipal Utilities and Engineering Director Harris)

6. Approve an agreement with Aero Tech Surveys to provide aerial mapping and land surveying services for the California Street Landfill in an amount not-to-exceed $39,000 for the initial term of one year, with the option to extend by two additional one-year terms for a total amount not-to-exceed $117,000.00; and determine that the project is not subject to environmental review pursuant to Section 15301 of the State's guidelines implementing the California Environmental Quality Act (Assistant City Manager Boatman)

7. Approve a Sole Source purchase order with Nextech Systems, Inc. in an amount not-to-exceed $48,500.81 for Traffic Signal Cabinet Battery Backup Systems; and determine that the purchase is not subject to environmental review pursuant to Section 15301 of the State's guidelines implementing the California Environmental Quality Act (Assistant City Manager Chris Boatman)

8. Approve request for the consumption of alcoholic beverages at Smiley Park at the Watchorn Lincoln Dinner to be held on February 12, 2022, and determination that the approval of the request is exempt from environmental review pursuant to Section 15061(b)(3) of the state’s guidelines implementing the California Environmental Quality Act (Assistant City Manager Boatman)

9. Authorize the acceptance of the California Market Match Program Grant through the Ecology Center in the amount of $4,260 and approve an additional appropriation of the same (Assistant City Manager Boatman)

10. Approve recommendation for Council District 2 appointment to the Citizens' Measure T Oversight Committee (Mayor Pro Tem Tejeda)

J. **Communications**

1. Video Series: Working for You: Making Redlands a Better Place (Public Information Officer Baker)

2. Recognition of military service members whose banners have been retired from the Redlands Hometown Heroes Military Banner Program (Assistant City Manager Boatman)

3. Discussion and possible action relating to the continuation of, and appointments to, the Council Ad Hoc COVID-19 Subcommittee (Mayor Pro Tem Tejeda)

4. Discussion and possible action regarding the renaming of Shoppers Lane (Council Member Davis)

5. Discussion and possible action relating to the holding of virtual City Council meetings in compliance with AB 361, and consideration of Resolution No. 8291 (Council Member Davis)

K. **Public Hearings**

1. **PUBLIC HEARING** to consider the following items:
(Mayor to declare meeting open as a public hearing)

    1. Consideration of a Notice of Exemption pursuant to Section 15061(b)(3) of the California Environmental Quality Act Guidelines.

    2. Ordinance No. 2930 (Ordinance Text Amendment No. 360) A proposal to amend Title 18 of the Redlands Municipal Code by modifying Chapter 18.92.080(B) pertaining to developments standards in the C-3, General Commercial District to allow residential density in accordance with the existing provisions of Measure "U," and modify the parking requirements for mixed use development and multifamily-attached residential development projects located within one-half mile of a train station.

    3. Resolution No. 8274 Specific Plan Amendment No. 22 to the Downtown Specific Plan (Specific Plan No. 45)– A proposal to amend Section III, Part C (Property Development Standards), sub-sections 1.7 and 3.7 of Specific Plan No. 45, to modify the on-site parking requirements for mixed use development and multifamily attached residential development projects located within one-half mile of a train station.
    (Development Director Desatnik)

L. **New Business**

1. Consideration of Resolution No. 8263 authorizing the City Manager to approve standard form Independent Contractor Agreements for recreational services and programs, administered by the Facilities and Community Services Department Recreational Division, and determine that approval of the resolution is exempt from environmental review pursuant to Section 15061(b)(3) of the State's guidelines implementing the California Environmental Quality Act (Assistant City Manager Boatman)

2. Consideration of a first amendment to the non-professional services agreement with RP Landscape and Irrigation to increase the second renewal annual compensation from $66,036 to $122,663.92 and the total compensation under the Agreement to an amount not-to-exceed $254,735.92, and determine approval of the amendment is exempt from environmental review pursuant to Section 15061(b)(3) of the State's guidelines implementing the California Environmental Quality Act (Assistant City Manager Boatman)

3. Consideration of a Professional Services Agreement with Carollo Engineers for the WWTP Recycled Water Reservoir Engineering Project, an additional appropriation in the amount of $734,839 from the Non-Potable Capital Improvement Fund (532), which is a Development Impact Fee Fund, and determine that these actions are exempt from review pursuant to Section 15061(b)(3) of the State's guidelines implementing the California Environmental Quality Act (Municipal Utilities and Engineering Department

Director Harris)

M. **Individual Council Member Announcements and/or Reports on Activities**
(No collective discussion or action.)

N. **Adjournment**
The next regular meeting of the City Council will be held on February 1, 2022

O. **Redlands Financing Authority**

1. Call regular meeting of the Board of Directors of the Redlands Financing Authority to order

2. **Public Comments - Redlands Financing Authority**
(At this time, the Redlands Financing Authority will provide an opportunity for the public to address them on any subject, within its jurisdiction, which is not already scheduled on this agenda. However, any matter that requires action will be referred to staff for a report and possible action at a subsequent meeting. Comments will be limited to three {3} minutes.)

3. Approve the minutes of the regular meeting of September 21, 2021 (Secretary Donaldson)

4. Adjourn Redlands Financing Authority meeting
The next Redlands Financing Authority meeting will be held on May 17, 2022.

If you challenge any proposed development entitlement listed on this agenda in court, you may be limited to raising only those issues you or someone else raised at the public hearing described in this notice, or in written correspondence delivered to the City Council at or prior to this public hearing.

In compliance with the Americans with Disabilities Act, if you need special assistance to participate in this meeting, please contact Goutam Dobey, of the Municipal Utilities and Engineering Department at (909) 798-7584 ext 2. Notification 48 hours prior to the meeting will enable the City to make reasonable arrangements to ensure accessibility to this meeting.
(28 CFR 35.102-35.104 ADA Title II)

Any writings or documents distributed to a majority of the City Council regarding an open session agenda item less than 72 hours before this meeting are available for public inspection at the City Clerk's Office or at the dais of the City Clerk once the open session meeting begins.

Staff reports or other written documentation relating to items referred to on the agenda are available at the A. K. Smiley Public Library, 125 West Vine Street, Redlands, California, and on the City's website referenced below.

Regular meetings are televised live on Redlands TV Channel 3 (Spectrum) and Channel 35 (Frontier) and re-broadcasted at 7:00 P.M. the following Wednesday, Friday and Sunday; and at 9:00 A.M. Thursday, Saturday and Monday. Agendas, staff reports and minutes of the City Council of the City of Redlands are available on the Internet:

http://www.cityofredlands.org

"A City That Works"

City Council/Financing Authority Meeting **D. 1.**

DATE: 01/18/2022

TO: Honorable Mayor and City Council Members

SUBJECT: 2021 By-District Council Member Election Boundaries Draft Map and Current Demographics
(Mayor to declare meeting open as a public hearing)
(Development Services Director Desatnik)

PROCEDURE FOR PUBLIC HEARING:

1. Mayor declares the meeting open as a public hearing.
2. Mayor calls upon Department Director for report.
3. Mayor calls for questions/comments from members of the City Council.
4. Mayor calls for comments/questions/testimony from members of the public (3 minutes per speaker).
5. Mayor calls upon City Clerk to note any written comments received.
6. Mayor closes the public hearing.

MOTION(S):

No action is required of the City Council at this time.

RECOMMENDATION:

Conduct the public hearing, hear the presentation from the redistricting consultant, and receive public comments.

DISCUSSION:

On September 21, 2021, the first of the required public hearings was conducted to receive public input on the 2021 By-District Council Member Election Boundaries Review Process for the five City Council election districts in the City. On September 30, 2021, a virtual community engagement workshop was held by the Development Services Department seeking input from members of the public on the criteria to be considered while drafting district maps. A news

release was published on December 2, 2021, seeking community participation in the redistricting update process and inviting the public to submit draft maps by January 31, 2022. No proposed maps have been submitted by the public to date.

The City Council must adopt boundaries for all the election districts based on 2020 U.S. Census data by April 17, 2022. The districts must be substantially equal in population and in compliance with federal and state law. The draft maps, which are based on existing district boundaries, are currently balanced and have been reviewed for compliance with Federal and State law including the Voting Rights Act and the Fair And Inclusive Redistricting for Municipalities And Political Subdivisions (FAIR MAPS) Act.

The 2020 U.S. Census data was released at the end of September 2021. This data was used to analyze the current district populations to see how they have changed since the last census. The official adjusted (Elections Code Section 21601(a)) requires that the population, as reflected in the Census, be adjusted to redistribute incarcerated prisoners back to their last known place of pre-incarceration residence) 2020 population of Redlands is 73,385, and the ideal district size is 14,680 total persons with no more than a 1,468 difference between the largest and the smallest. The populations of the existing districts as reflected in the adjusted Census data are as follows:

District 1: 14,332
District 2: 14,713
District 3: 14,749
District 4: 14,730
District 5: 14,861

The Supreme Court has held that there need not be perfect equality among the district populations; however, a plan with a "total deviation" exceeding 10% is presumed to be unconstitutionally mal-apportioned. The "total deviation" is calculated by determining the difference in population between the largest and smallest districts and then dividing by the ideal population.

Applying that formula, we subtract the population of District 1, the least populated at 14.332, (2.37% below the ideal) from the population of District 5, the most populated at 14,861 (1.23% above the ideal) to get a range of 529. Dividing that range by the ideal population of 14,680, the "total deviation" of the City's existing district plan is 3.6%, which is less than the permissible amount of 10%. Since the current district populations are within the permissible limits, district boundary lines are not required to be changed as they are substantially equal in population. The current district boundary and population map is an option for the City Council to consider as no changes are required to be made.

Next Steps:

In July 2021, the City Council authorized staff to procure the services of a consultant specializing in the California Voting Rights Act of 2001 (CVRA) to assist the Council in potential redistricting of current Council district boundaries.

Materials for members of the public to utilize for drawing draft district maps and submitting proposed maps to the City are available on the City's redistricting website, as required by state law, which can be found at drawredlands.org where the current election district boundary map, demographics and paper mapping tools can be found. The public is invited to submit information regarding their Communities of Interest and proposed district boundaries for the 2021 redistricting process by January 31, 2022, and all draft maps will be published to the website on February 7, 2022.

The future hearing date to consider draft maps will be held on February 15, 2022, and for final map adoption by April 17, 2022.

ALTERNATIVES:

Not applicable.

STRATEGIC PLAN:

Not applicable.

SUBMITTED BY:

Brian Desatnik, Development Services Director

Fiscal Impact

Discussion:

There is no additional fiscal impact with the approval of this item.

Attachments

Public Hearing Notice

NDC PowerPoint Presentation

PROOF OF PUBLICATION
(2015.5 C.C.P.)

STATE OF CALIFORNIA
County of San Bernardino
ss.

The undersigned hereby certifies as follows:

I am a citizen of the United States and a resident of the County aforesaid. I am over the age of twenty-one years, and not a party to or interested in the above entitled matter. I am the principal clerk of the printer of the Redlands Daily Facts, a newspaper of general circulation, published daily in the City of Redlands, County of San Bernardino, and which newspaper has been adjudged a newspaper of general circulation by the Superior Court of the County of San Bernardino, State of California, under the date of October 10, 1927, Case Number 26980; that the notice, of which the annexed is a true printed copy (set in type not smaller than nonpareil), has been published in each regular and entire issue of said newspaper and not in any supplement thereof on each of the following dates, to-wit:

9/11

all in the year 2021.

I certify under the penalty of perjury that the foregoing is true and correct:

Pamela S. Harris
Signature

Executed on the 11 day of Sept. 2021 at Redlands, in the County of San Bernardino, State of California.

(Space below for stamp only)

RECEIVED

SEP 20 2021

Redlands City Clerk

Proof of Publication of

CITY OF REDLANDS, CALIFORNIA

NOTICE OF PUBLIC HEARINGS

NOTICE IS HEARBY GIVEN that, pursuant to California Elections Code Section 21507.1, the City Council of the City of Redlands, County of San Bernardino, State of California, will hold a series of **PUBLIC HEARINGS** and one virtual workshop to receive input regarding potential redistricting of voting districts.

Public Hearing #1 is scheduled as follows:

DATE: Tuesday, September 21, 2021
TIME: 6:00 p.m.
LOCATION: City of Redlands
35 Cajon Street, Suite 2 – City Hall
Redlands, California, 92373

The purpose of the public hearings and virtual workshop are to receive public input relative to potential redistricting of voting boundaries. There will be a minimum of three (3) public hearings and one virtual workshop for a total of four (4) meetings. The public is invited to submit information regarding their Communities of Interest and proposed district boundaries for the 2021 redistricting process. Draft maps will not be available until 2020 U.S. census data is released, which is estimated to be at the end of September 2021.

The virtual workshop will be held on:

DATE: Thursday, September 30, 2021
TIME: 5:00 p.m. to 7:00 p.m.
ZOOM ID: 862 2201 6993
PHONE #: (669) 900-6833

Future hearing dates on this matter will be scheduled at City of Redlands 35 Cajon Street, Suite 2 – City Hall, Redlands, CA 92373 as follows:

PUBLIC HEARING #2:
Date: Tuesday, January 18, 2022
Time: 6:00 PM

PUBLIC HEARING #3:
Date: Tuesday, February 15, 2022
Time: 6:00 PM

ORDINANCE INTRODUCTION:
Date: Tuesday, March 1, 2022
Time: 6:PM

ORDINANCE ADOPTION:
Date: Tuesday, March 15, 2022
Time: 6:PM

Complete redistricting information can be found at www.drawredlands.org and questions or input may also be emailed to redistricting@cityofredlands.org

Dated this 7th day of September, 2021. Jeanne Donaldson, City Clerk
City of Redlands, California
Redlands Daily Facts 9/11/2021 #11487952



City of Redlands
Redistricting 2021

National Demographics Corporation

Redistricting Process

Step	Description
Two Initial Hearings September 21 & September 30	Held prior to release of draft maps. Education and to solicit input on the communities in the Districts.
Census Data Release Mid/Late August	Census Bureau releases official 2020 Census population data.
California Data Release Early October 2021	California Statewide Database releases California's official 'prisoner-adjusted' 2020 redistricting data.
Two Draft Map Hearings January 18 & February 15	Two Public Hearings to discuss and revise the draft maps and to discuss the election sequence.
Map Adoption By April 17, 2022	Final map must be posted at least 7 days prior to adoption. Map adopted via ordinance.*

NDC

Redistricting Rules and Goals

1. Federal Laws

Equal Population

Federal Voting Rights Act

No Racial Gerrymandering



2. California Criteria for Cities

1.Geographically contiguous

2.Undivided neighborhoods and "communities of interest"
(Socio-economic geographic areas that should be kept together)

3.Easily identifiable boundaries

4.Compact
(Do not bypass one group of people to get to a more distant group of people)

Prohibited:

"Shall not favor or discriminate against a political party."

3. Other Traditional Redistricting Principles

Minimize voters shifted to different election years

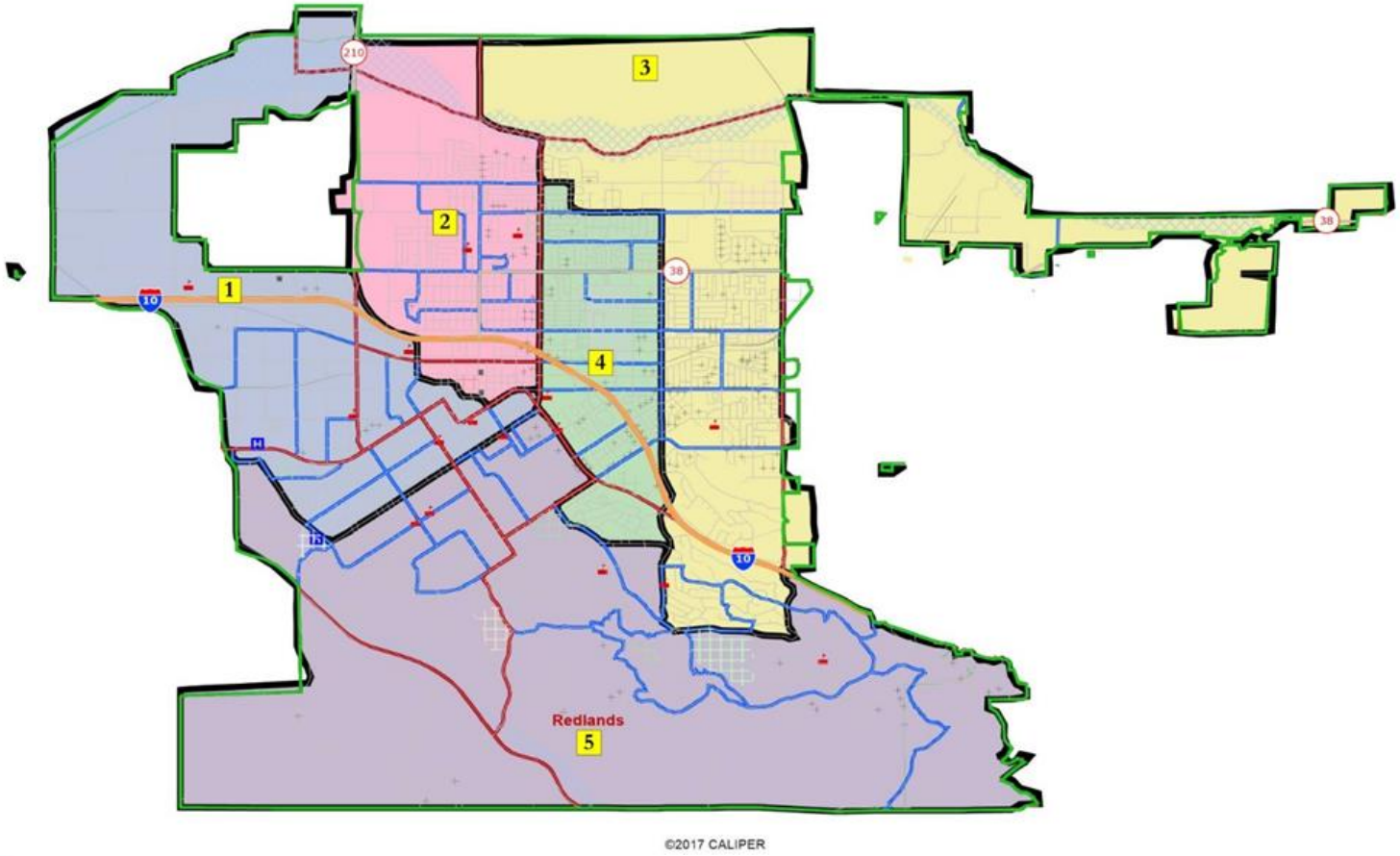
Respect voters' choices / continuity in office

Future population growth

Preserving the core of existing districts

NDC

Current District Map



NDC

Current District Demographics

Redlands Existing Districts

District			1	2	3	4	5	Total
	Total Pop		**14,332**	**14,713**	**14,749**	**14,730**	**14,861**	**73,385**
	Deviation from ideal		-345	36	72	53	184	529
	% Deviation		-2.35%	0.25%	0.49%	0.36%	1.25%	3.60%
Total Pop	% Hisp		38.60%	28%	31%	61%	18%	35%
	% NH White		43%	53%	46%	17%	65%	45%
	% NH Black		7%	4%	7%	8%	2%	5%
	% Asian-American		8%	12%	12%	11%	10%	11%
Citizen Voting Age Pop	**Total**		**10,679**	**11,071**	**9,871**	**9,527**	**10,756**	**51,905**
	% Hisp		32%	24%	29%	50%	14%	29%
	% NH White		54%	60%	56%	32%	77%	56%
	% NH Black		8%	3%	8%	7%	2%	5%
	% Asian/Pac. Isl.		6%	11%	6%	11%	6%	8%
Voter Registration (Nov 2020)	**Total**		**8,018**	**10,407**	**7,937**	**7,824**	**11,213**	**45,399**
	% Latino est.		29%	22%	23%	54%	13%	27%
	% Spanish-Surnamed		27%	20%	21%	49%	12%	25%
	% Asian-Surnamed		3%	4%	3%	3%	5%	4%
	% Filipino-Surnamed		1%	1%	1%	3%	1%	1%
	% NH White est.		62%	71%	65%	34%	80%	64%
	% NH Black		6%	3%	8%	9%	2%	5%

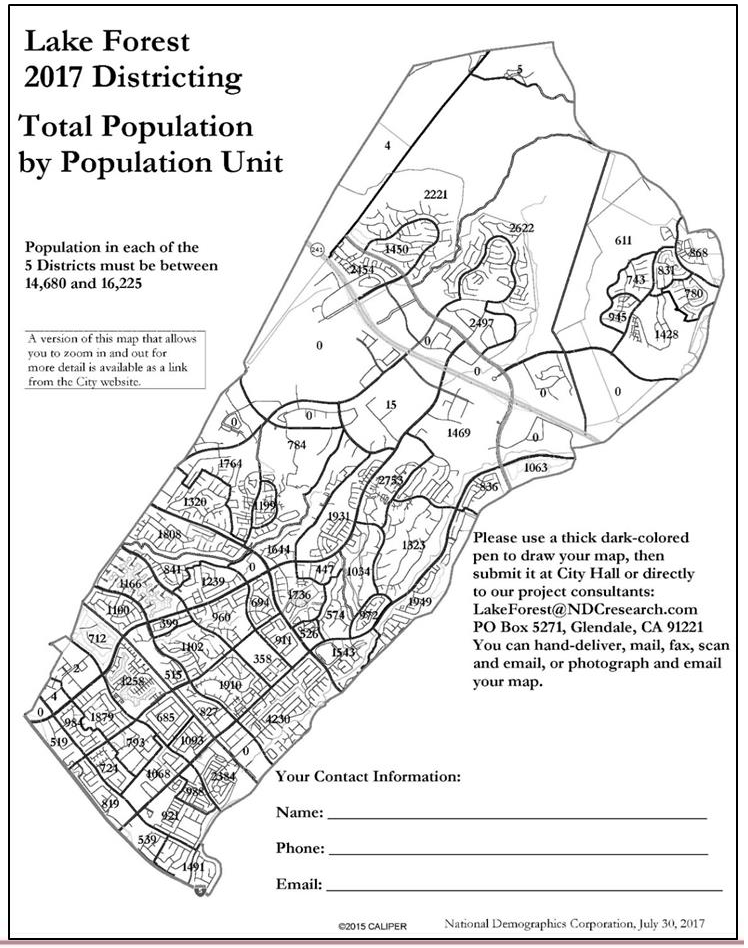
Current District Demographics

- Current Total Population is 73,385
- Each District population should be roughly 14,680
- Current Deviation is 3.60%
- The current District Map is considered 'Balanced' based on the criteria of the California Voting Rights Act.

Simple Map Drawing Tool

Paper "Public Participation Kit"

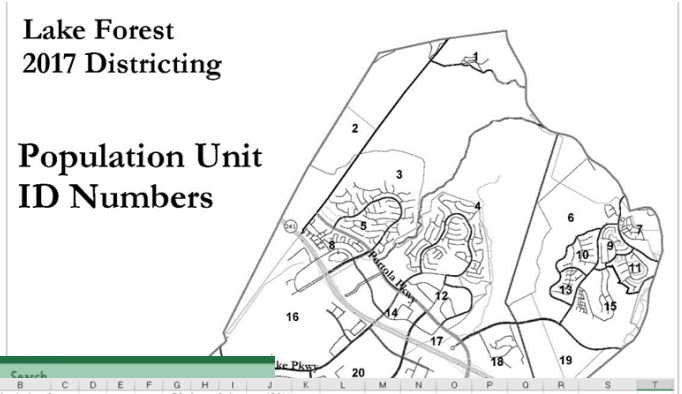
- For those without internet access or who prefer paper
- Total Population Counts only – no demographic numbers

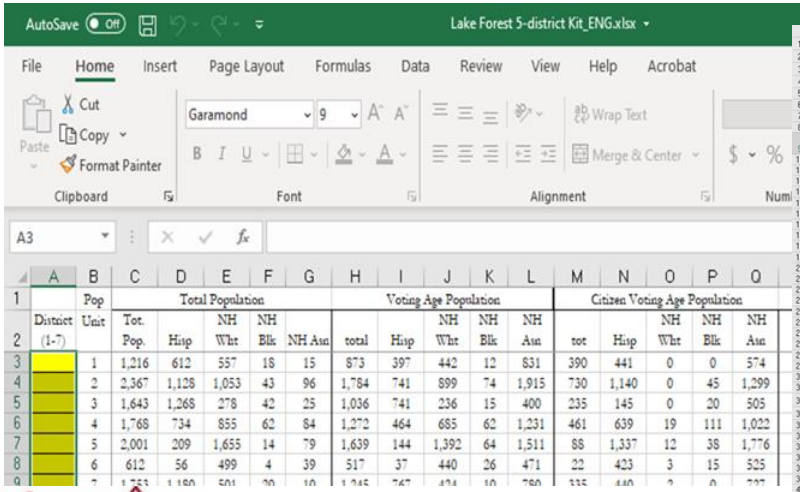


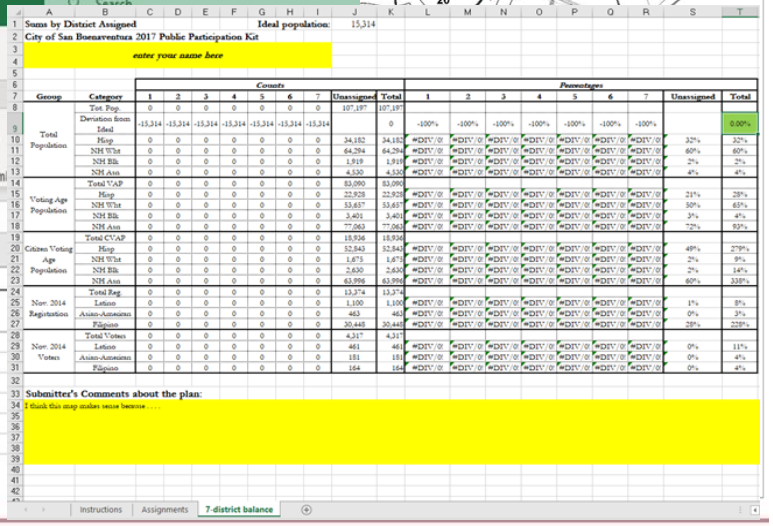
Simple Map Drawing Tool + Excel Supplement

"Public Participation Kit"

- For those who know Excel and do not wish to use online tools
- Adds CVAP data
- Excel does the math



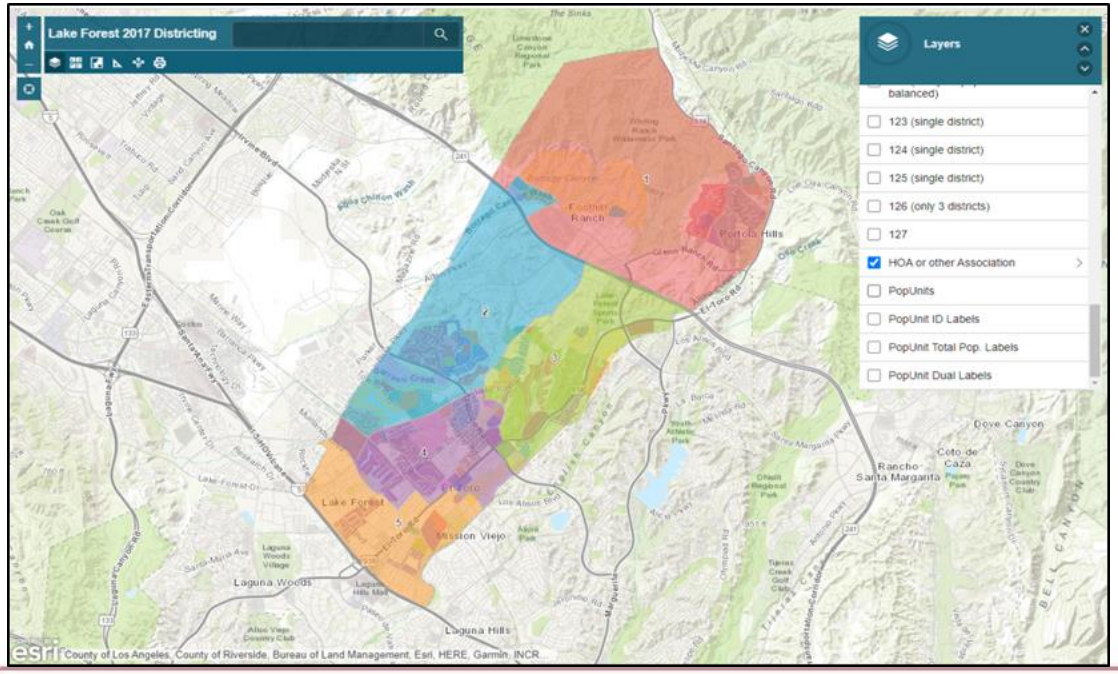




Simple Map Review Tool

Online Interactive Review Map

- ESRI's "ArcGIS Online" – similar to Google Maps in ease of use
- Used to review, analyze and compare maps, not to create them
- Includes overlays of "community of interest" and other data



Public Hearing & Discussion

- What is your neighborhood and what are its boundaries?
- What other notable areas are in the City, and what are their boundaries?
- Any questions about the mapping tools?
- Any Questions on the Current Map?

Discussion on:

- "neighborhoods"
- "communities of interest . . . that should be included within a single district for purposes of its effective and fair representation."

NDC

Share Your Thoughts

Website

https://drawredlands.org/

Phone

(909) 798-7533

Email

redistricting@cityofredlands.org

"A City That Works"

City Council/Financing Authority Meeting **F.**

DATE: 01/18/2022

TO: Honorable Mayor and City Council Members

SUBJECT: City Council Appointment to Fill Council Member Vacancy in Council District 5

a. Consideration of Council Member Appointment to the City Council (Mayor Barich and Mayor Pro Tem Tejeda)
b. Swearing in of new Council Member (City Clerk Donaldson)
c. Comments from new Council Member
d. Recess City Council Meeting for five minutes (Mayor Barich)

MOTION:

I move to appoint Mick Gallagher to serve on the City Council representing Council District 5 until a newly elected Council Member takes office in December 2022.

DISCUSSION:

As of January 3, 2022, a vacancy on the Redlands City Council exists due to the retirement of Council Member Foster. Pursuant to Government Code Section 36512(b), the City Council has 60 days from the occurrence of the vacancy to either fill the vacancy by appointment or call a special election to fill the vacancy. Based on the vacancy occurring on January 3, 2022, the 60-day period ends March 4, 2022.

At the December 7, 2021, City Council meeting, Mayor Barich and Mayor Pro Tem Tejeda reported on their Council District 5 outreach efforts to contact former City Council Members residing in District 5. The purpose was to determine if any of the former Council Members were interested in filling the upcoming vacancy resulting from Council Member Foster's retirement. Based on the information gathered during phone interviews, it was recommended by Mayor Barich and Mayor Pro Tem Tejeda that the City Council appoint former Council Member Mick Gallagher to fill the upcoming vacancy in Council District 5. Further, to promote transparency in the appointment process, the City Council interviewed former Council Member Gallagher at the Council meeting of

December 21, 2021. Following the interview, Mayor Barich directed staff to agendize the Council Member appointment on the January 18, 2022, City Council Meeting.

SUBMITTED BY:

Janice McConnell, Assistant City Manager

REVIEWED BY:

Charles M. Duggan, Jr.
Daniel J. McHugh, City Attorney

"A City That Works"

City Council/Financing Authority Meeting **I. 1.**

DATE: 01/18/2022

TO: Honorable Mayor and City Council Members

SUBJECT: Approve minutes of the regular meeting of December 21, 2021 (City Clerk Donaldson)

MOTION:

I move to approve the minutes of the regular meeting of December 21, 2021.

Attachments

Regular Meeting Minutes of December 21, 2021

MINUTES

Regular meeting of the City Council of the City of Redlands held in the Council Chambers, Civic Center, 35 Cajon Street, on December 21, 2021 at 5:00 P.M.

Present:	Paul Barich, Mayor Eddie Tejeda, Mayor Pro Tempore Denise Davis, Council Member Jenna Guzman-Lowery, Council Member
Absent:	Paul Foster, Council Member
Staff:	Janice McConnell, Assistant City Manager; Dan McHugh, City Attorney; Robert Dawes, City Treasurer; Jeanne Donaldson, City Clerk; Carl Baker, Public Information Officer; Mike Reiss, Deputy Police Chief; Danielle Garcia, Management Services/Finance Director; Chris Boatman, Facilities and Community Services Director; Brian Desatnik, Development Services Director; John Harris, Municipal Utilities and Engineering Director; Rich Sessler, Deputy Fire Chief

Mayor Barich called the meeting to order and offered those present the opportunity to provide public comment on any item on the agenda for the closed session.

PUBLIC COMMENT

None forthcoming

CLOSED SESSION

Conference with legal counsel: Anticipated Litigation - Government Code §54956.9(d)(2)(e)(2) and Government Code §54956.9(e)(3) (City Attorney McHugh)

One Case:

a. Facts and circumstances: Consideration of claim by Mr. Joe Miller and written correspondence from Mr. Miller's attorney

Conference with real property negotiators - Government Code §54956.8
(Facilities and Community Services Director Boatman)

Property:	1625 W. Redlands Blvd; APN 0292-157-16-0000
Agency Negotiators:	Janice McConnell; Chris Boatman
Negotiating Party:	Josh Kaplan and 625 W. Redlands, LLC
Under Negotiation:	Terms of payment and price of possible property purchase by the City

The City Council did not discuss the following item during Closed Session.

Conference with real property negotiators - Government Code §54956.8
(Municipal Utilities and Engineering Director Harris)

Property:	APNs 0300-451-13-0000, 0300-451-14-0000, 0300-451-24-0000, 0300-451-25-0000; (Property located on Helen Court)
Agency Negotiators:	Janice McConnell; John R. Harris
Negotiating Party:	Cathy A. Macknet, Kenneth D. Macknet II, Mark R. Macknet
Under Negotiation:	Terms of payment and price of possible property purchase by the City

RECONVENE CITY COUNCIL MEETING

The meeting reconvened at 6:00 P.M. with an invocation by Mayor Pro Tem Tejeda followed by the pledge of allegiance to the American flag.

CLOSED SESSION REPORT

City Attorney McHugh announced that no reportable action was taken during the closed session.

PUBLIC COMMENT

City Groves - Dennis Bell stated the City's citrus groves were losing money, but he said it wasn't clear how much they were losing. He wanted to see timely financial data be provided to the Citrus Preservation Commission and the public and if the groves couldn't be profitable, the City should consider selling them.

CONSENT CALENDAR

Minutes

On motion of Council Member Denise Davis, seconded by Mayor Pro Tempore Eddie Tejeda, the City Council unanimously approved minutes of the regular meeting of December 7, 2021, and special meeting of December 8, 2021.

Vote: 5 - 0 Passed

Planning Commissioner Appointments

On motion of Council Member Denise Davis, seconded by Mayor Pro Tempore Eddie Tejeda, the City Council unanimously reappointed Karah Shaw, Mathew Endsley, and Rosemarie Gonzales to serve four-year terms on the Planning Commission ending January 6, 2026; and appointed Maryn Wells to serve a four-year term on the Planning Commission ending January 6, 2026.

Vote: 4 - 0 Passed

Student Commissioner Appointments

On motion of Council Member Denise Davis, seconded by Mayor Pro Tempore Eddie Tejeda, the City Council unanimously appointed Varun Srivastava to serve as the student commissioner on the Human Relations Commission for calendar year 2022; appointed Saanya Shrivastav to serve as the student commissioner on the Traffic and Parking Commission for calendar year 2022; and appointed Mu Choi to serve as the student commissioner on the Parks and Recreation Advisory Commission for calendar year 2022.

Vote: 4 - 0 Passed

Cultural Arts Commissioner Appointments

On motion of Council Member Denise Davis, seconded by Mayor Pro Tempore Eddie Tejeda, the City Council unanimously appointed Danielle Giudici Wallis to serve the remainder of a four-year term on the Cultural Arts Commission ending January 6, 2023; appointed Daniel Gohman to serve a four-year term on the Cultural Arts Commission beginning January 6, 2022, and ending January 6, 2026; reappointed Kelly McGrail and Robert Walker to a second term ending January 6, 2026; and reappointed Dennis Christensen to a third term ending January 6, 2026.

Vote: 4 - 0 Passed

Firehouse Subs Public Safety Grant Award

On motion of Council Member Denise Davis, seconded by Mayor Pro Tempore Eddie Tejeda, the City Council unanimously approved an additional appropriation for the Firehouse Subs Public Safety grant award in the amount of $19,653.60 to the Fire Department.

Vote: 4 - 0 Passed

Local Hazard Mitigation Plan Agreement Amendment

On motion of Council Member Denise Davis, seconded by Mayor Pro Tempore Eddie Tejeda, the City Council unanimously approved a Second Amendment to the Professional Services Agreement with APetrow Consulting to support the implementation of the Local Hazard Mitigation Plan. The Amendment will increase the amount by $57,500, and extend the term of the agreement to March 21, 2022.

Vote: 4 - 0 Passed

Resolution No. 8284 Transportation Development Act Grant

On motion of Council Member Denise Davis, seconded by Mayor Pro Tempore Eddie Tejeda, the City Council unanimously approved Resolution No. 8284 authorizing the filing of the Claim Form, the submission of Reimbursement Request Form, and designating the individuals authorized to certify project completion for the Transportation Development Act, Article 3 grant; accepted a $46,340 Transportation Development Act, Article 3 Transit Stop Access Program grant; approved an additional appropriation in the amount of $46,340; and determined that these

actions are exempt from environmental review pursuant to Section 15061(b)(3) and Section 15301(c) of the State's Guidelines implementing the California Environmental Quality Act.

Vote: 4 - 0 Passed

Potable and Non-Potable/ Recycled Water Master Plans Amendment

On motion of Council Member Denise Davis, seconded by Mayor Pro Tempore Eddie Tejeda, the City Council unanimously determined that approval of the First Amendment to the Professional Services Agreements between the City of Redlands and Michael Baker International, Inc. is exempt from environmental review pursuant to Section 15061(b)(3) of the State's guidelines implementing the California Environmental Quality Act; and approved the First Amendment to the Professional Services Agreements between the City of Redlands and Michael Baker International, Inc. to continue the preparation of citywide Potable and Non-Potable/Recycled Water Master Plans.

Vote: 4 - 0 Passed

Utility Regulatory Compliance Data Management System Agreement

On motion of Council Member Denise Davis, seconded by Mayor Pro Tempore Eddie Tejeda, the City Council unanimously determined that the approval of the Professional Service Agreement with Hach Company is exempt from environmental review pursuant to Section 15061(b)(3) of the State's guidelines implementing the California Environmental Quality Act; and approved the Professional Service Agreement with Hach Company to implement a Water and Wastewater Utility Regulatory Compliance Data Management System in an amount not-to-exceed $155,492.

Vote: 4 - 0 Passed

Resolution No. 8286 CFD Annexation No. 26

On motion of Council Member Denise Davis, seconded by Mayor Pro Tempore Eddie Tejeda, the City Council unanimously determined that approval of Resolution No. 8286 is exempt from environmental review pursuant to Section 15061(b)(3) of the State's guidelines implementing the California Environmental Quality Act; and approved Resolution No. 8286, declaring intention to annex territory into Community Facilities District 2004-1.

Vote: 4 - 0 Passed

MOU Colton-Redlands-Yucaipa Regional Occupational Program

On motion of Council Member Denise Davis, seconded by Mayor Pro Tempore Eddie Tejeda, the City Council unanimously determined that approval of the Memorandum of Understanding is exempt from environmental review pursuant to Section 15061(b)(3) of the State's guidelines implementing the California Environmental Quality Act; and approved the Memorandum of Understanding with Colton-Redlands-Yucaipa Regional Occupational Program for the provision of temporary staffing services to support the City's Recreation and Senior Services Divisions in an amount not-to-exceed $10,000.

Vote: 4 - 0 Passed

License Agreement Outdoor Dining

On motion of Council Member Denise Davis, seconded by Mayor Pro Tempore Eddie Tejeda, the City Council unanimously determined that approval of the license agreement with David Kramer for use of the Orange Street Alley for outdoor dining purposes is Categorically Exempt from further environmental review pursuant to Section 15301 of the California Environmental Quality Act Guidelines; and approved the License Agreement with David Kramer.

Vote: 4 - 0 Passed

Resolution No. 8283 Surplus Lands Annual Report

On motion of Council Member Denise Davis, seconded by Mayor Pro Tempore Eddie Tejeda, the City Council unanimously determined that approval of the resolution is exempt from environmental review pursuant to Section 15061(b)(3) of the State's guidelines implementing the California Environmental Quality Act; and approved Resolution No. 8283, to receive and file an annual report of City of Redlands surplus lands.

Vote: 4 - 0 Passed

Annual Reports Community Facility Districts

On motion of Council Member Denise Davis, seconded by Mayor Pro Tempore Eddie Tejeda, the City Council unanimously approved to receive and file the Annual Reports for Community Facility District (CFD) No. 2001-1 and Community Facility District (CFD) No. 2003-1 pursuant to Local Agency Special Tax and Bond Accountability Act (SB 165).

Vote: 4 - 0 Passed

Resolution No. 8287 Annual DIF Report

On motion of Council Member Denise Davis, seconded by Mayor Pro Tempore Eddie Tejeda, the City Council unanimously approved Resolution No. 8287, adopting the Annual Report of Development Impact Fees for the Year Ended June 30, 2021, and adopting the findings therein.

Vote: 4 - 0 Passed

Traffic and Parking Commissioner Appointments

On motion of Council Member Denise Davis, seconded by Mayor Pro Tempore Eddie Tejeda, the City Council unanimously appointed Marc Tran and Cassie MacDuff to serve four-year terms on the Traffic and Parking Commission ending December 20, 2025.

Vote: 4 - 0 Passed

COMMUNICATIONS

Hometown Heroes Recognition

Facilities and Community Services Director Boatman commemorated military service members whose banners have been retired from the Redlands Hometown Heroes Military Banner Program. The program recognizes and honors Redlands residents and their immediate family members who are actively serving in, or have been honorably discharged from the United States Armed Forces. With appreciation for their sacrifice associated with military service to our country, the following banners have been retired:

1. Ernest Campos, Air Force - Banner flown over the streets of Redlands from May 2013 to March 2021
2. Paul Karge, Air Force - Banner flown over the streets of Redlands from May 2018 to March 2021
3. Kesler Reifel, Coast Guard - Banner flown over the streets of Redlands from May 2012 to March 2021
4. Andrew Saucedo, Army - Banner flown over the streets of Redlands from November 2011 to March 2021
5. Matthew Wiltgen, Air Force - Banner flown over the streets of Redlands from March 2012 to March 2021

District 5 Council Member Vacancy

Mayor Barich reported on the outreach efforts to fill the upcoming District 5 vacancy, resulting from Council Member Foster's retirement effective January 3, 2022. At the December 7, 2021 meeting, Mayor Barich and Mayor Pro Tem Tejeda recommended the Council appoint former Council Member Mick Gallagher to fill the vacancy, adding he possessed valuable experience, had the greatest availability and did not desire to seek election to this position in November 2022. The Council agreed to take the opportunity and interview Mr. Gallagher during tonight's meeting as a way to promote transparency and allow the public to be present during the process.

Mr. Gallagher briefly introduced himself, reviewed his resume and qualifications, reiterated he did not intend to run for the office in November 2022 and responded to Council Member questions. He was thanked for his willingness to attend this open meeting, thereby making the process more inclusive. As public comment, Dennis Bell saw the value in both methods to fill the vacancy, by appointing a former council member or by accepting applications from residents of District 5, but either way, he urged Council to approve the new district maps without gerrymandering. The City Council directed staff to agendize the Council Member appointment for the January 18, 2022 Council meeting.

NEW BUSINESS

Playground Mulch Installation

Facilities and Community Services Director Boatman explained the need for the agreement with Turboscape Inc., for the provision and installation of IPEMA Certified Playground Mulch at various City playgrounds. The City maintains twelve playground areas within its park system, and it was determined that new mulch was needed to raise the ground level and provide engineered transitions between the mulch surface and playground amenities.

On motion of Council Member Jenna Guzman-Lowery, seconded by Mayor Pro Tempore Eddie Tejeda, the City Council unanimously determined that the agreement with Turboscape, Inc., is exempt from environmental review pursuant to Section 15301 of the State's guidelines implementing the California Environmental Act; and approved the agreement with Turboscape, Inc., for the provision and installation of IPEMA Certified Playground Mulch in an amount not-to-exceed $85,505.00 for the initial term of one year, with an option to extend by two additional one-year terms for a total amount not-to-exceed $256,515.

Vote: 4 - 0 Passed

Planning Commission's Report Conformance with General Plan

Facilities and Community Services Director Boatman provided details of the Planning Commission's Report on its finding of conformance with the City's General Plan related to a Purchase and Sale Agreement (PSA) with 1625 W REDLANDS LLC for the acquisition of Assessor's Parcel No. 0292-157-16-0000. The City received an unsolicited offer to acquire the property in November. On November 16, 2021, the City Council reviewed the offer as part of its closed session agenda and authorized staff to negotiate a purchase price, for a future intended use as a police station. The property is located at 1625 West Redlands Boulevard, west of Alabama Street, and totals 8.62 acres. Government Code Section 65402 requires that such acquisition or sale be submitted to the Planning Commission for an evaluation as to its conformity with the General Plan and on December 14, 2021, the Commission unanimously agreed the sale would be consistent with the General Plan.

The PSA provided for a purchase price of $16,100,000. Some salient terms included: Due Diligence period of 60 days; City accepts property in “as-in” condition; Escrow opened once Escrow received fully executed copy of PSA and $329,000 to be deposited within three business days following escrow opening. The funds were in place to purchase this property outright without debt. Staff was requesting a transfer of $16,100,000 from the Strategic Planning Reserve in the General Fund to the Safety Hall Replacement Fund. After this action, the remaining balance in the Strategic Planning Reserve will be $16,102,230.

As public comment, Dennis Bell questioned whether there would be any money left from the $46 million proceeds of the recent land sale after the purchase and retrofit of the future City Hall building on State Street and the purchase and renovation of this site. Council Members supported the purchase and pointed out the Police Department has not had a proper police station since 2008 when the old Safety Hall building was declared unfit. The size of this proposed site will provide the opportunity for growth and will meet the needs of the department.

On motion of Mayor Pro Tempore Eddie Tejeda, seconded by Council Member Denise Davis, the City Council unanimously determined that the Purchase and Sale Agreement for Assessor's Parcel No. 0292-157-16-0000 is exempt from the California Environmental Quality Act pursuant to Section 15061(b)(3) of the CEQA Guidelines; accepted the Planning Commission's conformity report; determined that the City's acquisition of Assessor's Parcel No. 0292-157-16-0000 is in conformance with the City of Redlands General Plan; approved the Purchase and Sale Agreement with 1625 W REDLANDS LLC for Assessor's Parcel No. 0292-157-16-0000 in the amount of $16,100,000; and approved an additional appropriation in the amount of $16,100,00.

Vote: 4 - 0 Passed

WWTP Recycled Water Reservoir Engineering Project

Staff requested this item be pulled from the agenda to be presented to the City Council for consideration at a future meeting.

COUNCIL MEMBER ANNOUNCEMENTS AND ACTIVITIES

Council Member Davis announced there existed a serious blood supply shortage, and she encouraged everyone to donate blood.

Mayor Barich and Council Member Davis attended the Burrage Mansion Christmas drive-thru event, a special free event featuring live entertainment, Santa and Mrs. Claus and providing a spectacular holiday celebration for Redlands children and families.

ADJOURNMENT

Mayor Barich wished everyone a happy holiday season and with no further action required, the meeting adjourned at 6:38 P.M. The January 4, 2022 meeting was previously canceled, making the next regular meeting of the City of Redlands City Council scheduled for January 18, 2022.

"A City That Works"

City Council/Financing Authority Meeting **I. 2.**

DATE: 01/18/2022

TO: Honorable Mayor and City Council Members

SUBJECT: Report regarding Emergency Resolution No. 8065 proclaiming the existence of a local emergency in response to COVID-19 (Coronavirus Disease 2019) (Interim Fire Chief Sessler)

DISCUSSION:

On March 17, 2020, the City Council adopted Resolution No. 8065 proclaiming the existence of a "local emergency" in accordance with Chapter 2.52 of the Redlands Municipal Code and determined that there was substantial evidence to proclaim a local emergency due to COVID-19 Pandemic. This proclamation was done after the declaration of a public emergency by the United States Department of Public Health and Human Services, the State of California, and the County of San Bernardino County Health Officer and the Board of Supervisors.

Since the declaration of the local emergency, the City's Emergency Operations Center was activated and remains at a Level III activation. Additionally, several measures were put in place to adhere to California Department of Public Health and to keep employees and residents safe. As of this time, all City facilities and services listed below are being provided to the public while adhering to state guidelines pertaining to the use of masks and physical distancing:

- The City facilities reopened on May 3, 2021, adhering to public health orders that remain in effect.
- The Library and the Lincoln Shrine are open to the public with limited hours of operation.
- The gymnasium/community center and Senior Center facilities are open with no max capacity.
- Dance and fitness classes, as well as court rentals are open between the hours of 10:00am to 7:00pm, Monday through Friday.
- Sports fields are open for recreational activities such as tennis, pickleball, and golf programs, as well as for individual fitness opportunities.
- The Household Hazardous Waste facility remains open on Saturdays from 9:00 a.m. to 2:00 p.m.

- Regular City Council and Planning Commission meetings are now being held in person.
- All city board and commission meetings are being held in person.
- Updated protocols for the use of Personal Protective Equipment for all Fire Department Operations personnel.
- Updated protocols for in-person contact with persons reporting crimes.

Updates for San Bernardino County

San Bernardino County, along with the rest of the state, fully reopened its economy on June 15, 2021, eliminating various restrictions and discontinuing the color-coded county tier system.

- Restaurants, bars, retail stores, theaters, hotels and entertainment centers have returned to usual operations with no capacity limitations and no requirements for social distancing.
- Fully vaccinated individuals can resume activities without wearing a mask or physically distancing, except where required by federal, state, local, tribal, or territorial laws, rules, and regulations, including local business and workplace guidance.

Emergency Operations Planning and Response

The Emergency Operations Center (EOC) remains activated at a Level III since it was originally activated on March 16, 2020. A team of Responders was put together consisting of several City Department staff including Fire, Police, Information Technology, Human Resources Risk & Safety Division, Finance, and the City Manager's Office. The objective of the EOC Team, and the City as a whole, is to provide and maintain the safety for all City employees and the community, to keep essential services open and available to the community, provide a consistent message, and reduce the risk of the exposure and spread of COVID-19. Responders met regularly for status briefings and to ensure proper preparation, planning, prevention, and response to the COVID-19 pandemic.

With a focus on preparation, planning, prevention, and response, the EOC Team included specific roles for a PIO (primary and alternate), for the dissemination of consistent and critical information, a Safety Officer, and a Community Liaison. Additional categories were also added for Operations, Logistics, and Finance & Recovery. The focus of Finance & Recovery is to track personnel and non-personnel expenditures related to COVID-19 in order to seek reimbursement from the state.

The Latest COVID-19 Statistics:

As of Wednesday, January 5, 2022, COVID-19 numbers in the city of Redlands are as follows:

Total Cases: 12,416
Community Cases: 11,938
Deaths: 281
Total Tests: 205,447

Vaccinations and Testing

Vaccinations are in good supply and readily available to any resident aged 12 and over, and there are vaccination sites located throughout the County. For more information on COVID-19 vaccinations please visit sbcovid19.com/vaccine/.

Testing appointments can be made through the San Bernardino County COVID-19 Response website as follows: https://sbcovid19.com/testing-sites/.

SUBMITTED BY:
Rich Sessler, Interim Fire Chief

RECOMMENDED BY:
Charles M. Duggan, Jr., City Manager
Janice McConnell, Assistant City Manager

Fiscal Impact

Discussion:
The fiscal impact to the City due to COVID-19 as of January 5, 2022 is as follows: Personnel: $1,960,113.07 (Fully Burdened)
Non-Personnel: $481,384.47 (Equipment and Supplies)

Total: $2,441,497.54

"A City That Works"

City Council/Financing Authority Meeting **I. 3.**

DATE: 01/18/2022

TO: Honorable Mayor and City Council Members

SUBJECT: Approve Additional Appropriations of 2020-21 Year-End Encumbrance and Carryover Balances (Management Services/Finance Director Garcia)

MOTION(S):

If the City Council determines that staff's recommendation is appropriate, the following motion is provided:

I move to approve additional appropriations to the Fiscal Year 2021-22 budget for the Fiscal Year 2020-21 year-end encumbrances and carryovers.

RECOMMENDATION:

Staff recommends the City Council approve additional appropriations to the Fiscal Year 2021-22 budget for the Fiscal Year 2020-21 year-end encumbrances and carryovers.

DISCUSSION:

As the prior fiscal year is closed, a number of previously approved budget activities and projects remain in-progress and have not yet been completed. Staff routinely reviews these items during the year-end closing process and returns to City Council with a request to approve the carryover of those budget amounts into the new fiscal year as a continuing appropriation. At the close of last fiscal year, June 30, 2021, all unexpended appropriations lapse unless otherwise designated. To preserve unexpended appropriations for in-progress projects and purchases, it is necessary to request that those specific carryovers and encumbrances be approved as continuing appropriations in the current Fiscal Year 2021-2022.

An encumbrance refers to a budgeted expense for which a purchase order was issued in one fiscal year, but the goods or services were not received and paid

for until the next fiscal year, thus crossing fiscal years. Carryovers are for project, capital and contractual expenditures that were included in the budget, but at the end of the fiscal year, had not yet been encumbered or spent. Grant carryovers reflect active grant awards that have been advanced or are 100% reimbursable but remained unspent at June 30, 2021. Because expenditures of previously encumbered and carried over items will occur in the 2021-22 fiscal year, an additional appropriation is necessary to prevent overspending of the current fiscal year's budget. In the attachments to this report, specific projects and encumbrances are listed for the General Fund and non-General Funds, as well as the specific grant carryovers that are requested.

For the General Fund, approximately $5 million in project funding was added into the fiscal year 2020-21 12-Month Projections, as adopted by Council on June 1, 2021. Project funding was added to the areas of Public Safety, Parks and Recreation, Library, Street Repairs and Paving, and Storm Drains. Funding sources for these projects include Measure T funds as well as additional funding as a result of strong economic recovery during the fiscal year. Due to the timing constraints between budget adoption, June 1, 2021, and year-end, June 30, 2021, these projects will need to be added into 2021-22 budget. These projects are anticipated to be in progress and/or completed by June 30, 2022.

ALTERNATIVES:

The Council could decide not to appropriate any of these funds at this time. This is not recommended as many of the carryover requests are for items and services that have already received City Council approval during the FY 2020-21 Budget process.

STRATEGIC PLAN:

Not applicable.

SUBMITTED BY:
Danielle Garcia, Management Services/Finance Director

RECOMMENDED BY:
Charles M. Duggan, Jr., City Manager

REVIEWED BY:
Daniel J. McHugh, City Attorney
Janice McConnell, Assistant City Manager

PREPARED BY:
James Garland, Assistant Finance Director

Fiscal Impact

Discussion:

There is no fiscal impact. The amounts listed in each respective fund have been previously accounted for, both in the Fiscal Year 2020-2021 12-Month Projections within the Adopted Budget as well as in the various fund balance projections. Estimated available fund balances have previously been reduced by these amounts.

Attachments

General Fund Encumbrances 2020-21

All Other Fund Encumbrances 2020-21

Grant Carryovers 2020-21

CITY OF REDLANDS
ENCUMBRANCES - GENERAL FUND
AS OF 06/30/2021

P.O. #	ACCT. #		VENDOR		AMOUNT
CITY COUNCIL					
22202439	101100	6708	Upland Rock Inc.	$	102.61
Carryover	101100	6708	Community Day Of Service		18,232.67
		TOTAL		**$**	**18,335.28**
CITY CLERK					
22200445	101110	6710	Sterling Codifiers Llc	$	1,196.86
22201928	101110	6710	Sterling Codifiers Llc		5,000.00
		TOTAL		**$**	**6,196.86**
LIBRARY					
Carryover	101190	8501	Boiler Replacement	$	350,000.00
Carryover	101190	8503	Library Kitchen Repairs		5,000.00
Carryover	101190	8503	Library Roof Repairs		8,000.00
Carryover	101190	8503	Lincoln Shrine Roof Repairs		7,000.00
		TOTAL		**$**	**370,000.00**
CITY MANAGER					
22202476	101123	7802	Sparkletts	$	19.93
22202477	101123	7802	Sparkletts		3.99
22202478	101123	7802	Sparkletts		3.99
22200352	101124	6710	Inland Presort		351.77
		TOTAL		**$**	**379.68**
CITY ATTORNEY					
22200166	101150	6909	Thomson Reuters West	$	1,885.36
		TOTAL		**$**	**1,885.36**
DEVELOPMENT SERVICES					
22200553	101162	6705	File Keepers Llc	$	42,893.82
22202249	101162	6901	Citrograph Printing Comp		48.94
22200529	101164	6106	Environment Plan Dvlpmnt		9,632.32
22202001	101164	6106	Moule & Polyzoides Arc		25,000.00
22200553	101164	6705	File Keepers Llc		7,001.12
		TOTAL		**$**	**84,576.20**
POLICE					
22201724	101201	7102	Big Sky Communications Inc.	$	18.21
22202346	101201	7102	Big Sky Communications Inc.		93.19
22200592	101202	6105	Loma Linda Unvrsty Child Hos		1,200.00
22200076	101202	6710	Steps 4 Life		18,000.00
22200105	101202	7004	V & V Manufacturing Inc.		4,140.18
22202162	101202	7102	Adorama Inc.		4,676.49
22201531	101202	7805	Proforce Law Enforcement		4,870.30
22202132	101202	7805	Ultimate Training Munitions Inc.		1,757.51
22202347	101202	7810	Enviro Safety Products		826.50
22201393	101202	7810	Tri-Tech Forensics Inc.		71.27
22202184	101202	7810	SZY Holdings		230.90
Carryover	101202	8501	EOC Remodel		190,000.00
22202229	101202	8704	Lenco Industries Inc.		297,742.00
Carryover	101202	8704	Lenco Bearcat Armored Veh		52,258.00
22202309	101203	7804	Intervet Inc.		4,021.88
22202326	101203	8501	CWFC Inc.		23,000.00
Carryover	101203	8501	Fencing At Animal Shelter		4,500.00
Carryover	101203	8501	Pavement Repairs		30,000.00
		TOTAL		**$**	**637,406.43**
FIRE					
22201343	101250	7004	Fire Etc.	$	3,684.78
22201650	101250	7201	Rivcomm Inc.		986.56
22202042	101250	7204	West Coast Arborists Inc.		6,600.00
22201094	101250	7205	California Tool And Welding Supply		1,752.79
22202365	101250	7205	BK Technologies Inc.		1,340.00

CITY OF REDLANDS
ENCUMBRANCES - GENERAL FUND
AS OF 06/30/2021

P.O. #	ACCT. #		VENDOR	AMOUNT
22201593	101250	7804	Life-Assist Inc.	2,260.01
22202226	101250	7810	Calolympic Safety	283.36
22201343	101250	7810	Fire Etc.	17.68
22201855	101250	7901	Fire Apparatus Solutions	1.00
Carryover	101250	8501	Sec Fencing & Gate At Station 261	35,000.00
Carryover	101250	8501	Sec Fencing & Gate At Station 262	30,000.00
Carryover	101250	8501	Exhaust Hose At Station 262	12,000.00
Carryover	101250	8503	Station 262 Ada Retrofit	400,000.00
Carryover	101250	8503	Apparatus Bay Doors Station 261	195,875.00
Carryover	101250	8503	Station Lockers, Storage, Hose Cab	100,000.00
Carryover	101250	8704	Brush Engine	92,159.97
Carryover	101250	8801	Enterprise Lease	94,097.00
22200880	101251	6710	Interwest Consulting Group Inc.	28,345.25
22202201	101252	6710	Red Helmet Training	6,840.00
		TOTAL		**$ 1,011,243.40**
FACILITIES AND COMMUNITY SERVICES				
22200465	101300	6710	Masters Refreshment Services Llc	$ 46.13
22201978	101301	6309	Couts Heating And Cooling Inc.	1,106.40
22202425	101301	6309	Georgianna Air	985.00
22202426	101301	6309	Georgianna Air	1,950.00
22202467	101301	6710	Ben's Lock And Key	1,672.21
22200108	101301	6710	Haz Mat Trans Inc.	3,084.30
22201459	101301	6710	Security Signal Devices	1,771.75
22202428	101301	6710	Dormakaba Usa Inc.	1,696.07
22202457	101301	6710	Diamond Environmental Services Lp	100.00
22201755	101301	6710	Aramark Uniform	224.26
22201756	101301	6710	Rite Way Roof Corporation	85.00
22201261	101301	6903	Omni Enterprise	62,750.00
22200033	101301	7204	Firehawk Corporation	1,885.39
22200493	101301	7204	Firehawk Corporation	245.00
22200033	101301	7205	Firehawk Corporation	1,640.34
22202424	101301	7208	California Quality Plastics Inc.	234.45
22201856	101301	7208	Lekson Inc.	6,992.98
22202121	101301	7901	F C And Sons Roofing Inc.	24,900.00
Carryover	101301	8501	HVAC Design	60,000.00
Carryover	101301	8501	Exterior Plaster/Roof At Bowl	120,000.00
Carryover	101301	8501	Upgrade Security System At City Hall	300,000.00
22200141	101302	7208	Consolidated Electrical	257.26
22201977	101302	7901	Ameron International Corporation	15,664.88
22202131	101302	7901	Sierra Pacific Electrical	42,563.00
22202150	101303	6710	Basic Backflow	20,000.00
22202146	101303	6710	Jester's Lawnmower	5,000.00
22202303	101303	6710	STB Landscape Architects	4,990.00
22200713	101303	6710	West Coast Arborists Inc.	1,300.00
22202147	101303	6710	Wilbur's Power Equipment	5,000.00
22202306	101303	6710	Aero Tech	4,990.00
22200252	101303	6710	Statewide Pest Control Inc.	1,454.00
22201459	101303	6710	Security Signal Devices	176.75
22202423	101303	6710	Aramark Uniform	366.01
22202159	101303	6710	Inter-Con Security Systems Inc.	22,308.00
22200060	101303	6712	One Stop Landscape Supply Center	8,123.69
22201600	101303	7004	Aramark Uniform	64.62
22201046	101303	7810	Airgas Usa Llc	124.34
Carryover	101303	7901	Shade Sale Repair	40,000.00
Carryover	101303	8501 / 303002	Bowl Sound and Lighting	28,420.00
Carryover	101303	8501 / 303004	Parking Lighting Improvements	109,214.00
Carryover	101303	8501	Beverly Pond	10,000.00
Carryover	101303	8501 / 303006	Gateway Ranch Parking	9,885.00
Carryover	101303	8501	Crafton Parks Goal Posts	6,000.00
Carryover	101303	8501	Crafton Park Crows Nest Relocation	30,000.00
Carryover	101303	8501	Crafton Park Score Board Relocation	15,000.00
Carryover	101303	8501	Crafton Park Snack Bar Retrofit	10,000.00

CITY OF REDLANDS
ENCUMBRANCES - GENERAL FUND
AS OF 06/30/2021

P.O. #	ACCT. #		VENDOR	AMOUNT
Carryover	101303	8501	Crafton Park Bleachers	50,000.00
Carryover	101303	8501	Sylvan Park Rest. Replacement Grt Match	30,000.00
Carryover	101303	8501	Community Park Snack bar Renovation	10,000.00
Carryover	101303	8501	Ford Park Restroom Replacement	120,000.00
Carryover	101303	8501	Pickle ball Court Upgrades at Rec Center	120,000.00
22200787	101304	6710	Cannon Pacific Services Inc.	70,155.49
22200108	101304	6710	Haz Mat Trans Inc.	16,502.33
22202131	101304	6710	Sierra Pacific Electrical	2,637.00
22202042	101304	6710	West Coast Arborists Inc.	1,740.00
22200060	101304	6712	One Stop Landscape Supply Center	1,916.14
22202473	101304	6908	Ahern Rentals Inc.	2,224.90
22202138	101304	6908	United Rentals (North America) Inc.	159.98
22202427	101304	7208	Industrial Metal Supply	270.89
22201937	101304	7208	South Bay Foundry Inc.	505.44
22201932	101304	7208	Zap Manufacturing Inc.	4,677.41
22201829	101304	7208	Yardley Orgill Co Inc.	530.05
22201774	101304	8501	Three Peaks Corp	82,989.00
22200713	101305	6710	West Coast Arborists Inc.	22,418.00
22202042	101305	6710	West Coast Arborists Inc.	82,170.00
22201136	101309	6101	SGH Architects Inc.	9,250.00
22200032	101309	6710	Rymax Electric Inc.	2,830.00
22200156	101309	6710	Sullivan, Cindy L	341.56
22202390	101309	6710	Brucato Floor Covering	29,683.00
22202392	101309	6710	United Site Services Of Calif	5,000.00
22202258	101309	7101	Consolidated Office Systems	1,632.00
22202250	101309	7101	Trendway Corporation	7,874.69
Carryover	101309	8501	Community Center Game Room Upgrade	168,000.00
Carryover	101309	8501	Repaving/Striping Comm Center Park Lot	70,000.00
		TOTAL		**$ 1,895,778.71**
MUED				
22202185	101400	6106 / 400012	Carollo Engineers	$ 177,463.59
22200692	101400	6106	CASC Engineering And Consult	8,929.10
22200664	101400	6106	Hicks And Hartwick Inc.	5,613.00
22200681	101400	6106	Hilltop Geotechnical Inc.	361.81
22201697	101400	6106 / 400011	Huitt Zollars Inc.	65,999.34
22200696	101400	6106	Willdan	4,000.00
Carryover	101400	6106	Traffic/Parking Commission Improvements	25,000.00
Carryover	101400	6106	Citywide Transportation Master Plan	350,000.00
Carryover	101400	6106 / 400010	DMU Rail Platform	142,400.00
22201567	101400	6703	CDW Government Inc.	394.05
22202130	101400	7810	Goforth & Marti	3,727.11
Carryover	101400	8403	Public Parking Lot & Alley Impr. Project	800,000.00
Carryover	101400	8403	Citywide Sidewalk/ADA Repl. Project	500,000.00
Carryover	101400	8403	Bridge Preventative Maint Program	275,000.00
Carryover	101400	8403	Traffic/Parking Commission Improvements	25,000.00
Carryover	101400	8404	Citywide Storm drain System Imp. Proj.	500,000.00
	TOTAL			**$ 2,883,888.00**
MANAGEMENT SERVICES - FINANCE				
22201754	101501	6104	Eide Bailly LLP	**$** 48,238.00
22202337	101501	6106	HDL Coren & Cone	7,000.00
22200248	101501	6106	Hinderliter Dellamas & Assoc	8,464.41
22202144	101501	6106	KNN Public Finance Llc	50,000.00
		TOTAL		**113,702.41**
	TOTAL ENCUMBRANCES			**$ 1,475,350.69**
	TOTAL CARRYOVERS			**5,548,041.64**
	TOTAL GENERAL FUND			**$ 7,023,392.33**

CITY OF REDLANDS
ENCUMBRANCES - OTHER FUNDS
AS OF 06/30/2021

P.O. #	ACCT. #			VENDOR		AMOUNT
EMERGENCY SERVICES						
22201467	205250	7102		Zoll Medical Corp	$	1,136.50
22201593	205250	7804		Life-Assist Inc.		2,000.00
22201672	205250	7810		Life-Assist Inc.		3,167.86
	TOTAL				**$**	**6,304.36**
LOCAL TRANSPORTATION						
22200388	209400	7810		LCP Tracker Inc.	$	1,985.89
22200680	209400	7810		Virtual Proj. Manager		4,666.77
	TOTAL				**$**	**6,652.66**
PARIS						
22200664	211910	6106	211001	Hicks And Hartwick Inc.	$	35,310.00
Carryover	211910	6106	211001	PARIS 2019 Resurfacing (1741-1988)		5,000.00
Carryover	211910	6902	211001	PARIS 2019 Resurfacing (1741-1988)		482.00
22200696	211910	8403	211001	Willdan		45,000.00
Carryover	211910	8403	211001	PARIS 2019 Resurfacing (1741-1988)		100,190.27
Carryover	211910	8403	C531010	IVDA Mountain View Ave Infra Proj		202,818.00
	TOTAL				**$**	**388,800.27**
AIR QUALITY IMPROVEMENT						
22201549	221400	6106	400010	San Bernardino County Transp	$	127,342.38
Carryover	221400	8706		Changeable Signs and Mobile Radar Detection		50,000.00
	TOTAL				**$**	**177,342.38**
ASSET FORFEITURE						
22202017	246200	7810		American Blast And Bullet	$	48.13
22200982	246200	7810		CWFC Inc.		1,350.00
22200775	246200	7810		Mikes Custom Flooring		62.00
22202198	246200	8704		West Coast Lights & Sirens		6,819.52
	TOTAL				**$**	**8,279.65**
PARK AND OPEN SPACE						
Carryover	250400	8501		Isreal Beal Ballfield	$	50,000.00
	TOTAL				**$**	**50,000.00**
SAFETY/CITY HALL REPLACEMENT						
22202316	406501	6106		Terracon Consultants Inc.	$	9,200.00
22202336	406501	6710		Miller Architectural Corp		51,700.00
Carryover	406501	8502		300 E State Street		500,000.00
	TOTAL				**$**	**560,900.00**

CITY OF REDLANDS
ENCUMBRANCES - OTHER FUNDS
AS OF 06/30/2021

P.O. #	ACCT. #		VENDOR	AMOUNT
WATER OPERATIONS				
22200145	501900	6106	Babcock Laboratories Inc.	$ 106,683.07
22201181	501900	6106	Babcock Laboratories Inc.	2,775.00
22200692	501900	6106	CASC Engineering And Consulting Inc.	3,048.02
22200682	501900	6106	Geoscience Support Services Inc.	36,617.50
22200681	501900	6106	Hilltop Geotechnical Inc.	2.35
22200710	501900	6106	Raftelis Financial Consultants	10,577.95
22201882	501900	6106	Raftelis Financial Consultants	12,444.00
22200696	501900	6106	Willdan	36,530.00
22201946	501900	6106	The Converse Professional Group Inc.	19,015.00
22200732	501900	6313	Information Services Department	12,297.46
22201333	501900	6703	Itron Inc.	1,646.90
22201658	501900	6703	Systems & Software Inc.	459.45
22201582	501900	6703	Ferguson Us Holdings Inc.	22,560.00
22202385	501900	6703	Sedaru Inc.	5,600.00
22201293	501900	6708	Cooperative Personnel Services	588.93
22202349	501900	6710	A B Fence Company	1,606.50
22202245	501900	6710	McDonald Electric Inc.	1,202.20
22202475	501900	6710	Golden Meters Services Inc.	2,800.00
22202228	501900	6710	Amr Installs Inc.	4,054.58
22201459	501900	6710	Security Signal Devices	504.00
22201261	501900	6903	Omni Enterprise	1,200.00
22202130	501900	7101	Goforth & Marti	5,510.26
22202330	501900	7101	Goforth & Marti	1,839.02
22202349	501900	7204	A B Fence Company	1,087.50
22202087	501900	7204	C And S Powder Coating	340.00
22201265	501900	7204	McDonnell Roofing Inc.	4,698.00
22202245	501900	7208	McDonald Electric Inc.	3,500.00
22200195	501900	7208	Quantum Automation	175.09
22200192	501900	7208	Usa Blue Book	14,589.90
22200202	501900	7208	Ferguson Us Holdings Inc.	18,310.11
22201199	501900	7208	Thunderbird Communications Inc.	422.38
22202189	501900	7211	CDW Government Inc.	1,420.91
22202391	501900	7213	Lighting Technology Inc.	7,497.44
22200118	501900	7803	JCI Jones Chemicals Inc.	1,700.00
22200202	501900	7808	Ferguson Us Holdings Inc.	27,308.06
22202475	501900	7808	Golden Meters Services Inc.	2,175.00
22200388	501900	7810	LCP Tracker Inc.	9,016.66
22200680	501900	7810	Virtual Project Manager	4,666.47
Carryover	501900	8704	Motor Vehicles	72,313.22
22202325	501900	8706	Cummins Inc.	92,096.03
Carryover	501900	8706	All Other Equipment	24,919.97
	Sub-Total (501900)			$ 575,798.93

CITY OF REDLANDS
ENCUMBRANCES - OTHER FUNDS
AS OF 06/30/2021

P.O. #	ACCT. #				VENDOR		AMOUNT
WATER PROJECTS							
22201642	501910	6106	/		Cummins Inc.	$	41,172.35
Carryover	501910	8402	/	501002	Drought Tolerant Landscape Imprv		26,480.78
Carryover	501910	8706	/	501004	Hinckley WTP Backup Gen Rplcmt		140,000.00
Carryover	501910	8402	/	501005	2018 Well Rehabilitation		450,632.00
22201304	501910	6106	/	501006	Tesco Controls Inc.		103,835.01
22200321	501910	8706	/	501006	Baker Electric Inc.		762,295.65
Carryover	501910	8501	/	501006	Water SCADA System Upgrade		286,899.16
Carryover	501910	6106	/	501013	Water Master Plan Update		120.00
22200591	501910	6106	/	501013	Michael Baker International		139,074.96
22200326	501910	6106	/	501015	Carollo Engineers		40,162.25
Carryover	501910	8402	/	501021	Advanced Mtrng/Automatic Mtr Rdng		250,000.00
Carryover	501910	8501	/	501022	Roof Repairs		100,000.00
22200367	501910	8402	/	501023	Ferguson Us Holdings Inc.		16.21
Carryover	501910	8501	/	501023	Water Meter Replacement Project		542,860.21
22200446	501910	6106	/	501024	Carollo Engineers		31,767.86
Carryover	501910	6106	/	501024	WTP Operations Plan Update		1,374.00
Carryover	501910	8501	/	501027	Smart Irrig Controller for City Fac		50,000.00
Carryover	501910	8402	/	501028	Fixed Gen-5th Ave,Texas St,Cntry Cl		750,000.00
Carryover	501910	8402	/	501029	Tate ACH Tank Replacement		25,000.00
Carryover	501910	8501	/	501030	Hinckley Wash water & Pond Fencing		40,000.00
22201989	501910	8402	/	501031	Tryco General Engineering		1,044,228.50
Carryover	501910	8402	/	501031	2020 Water CIP		248,159.43
22201806	501910	6106	/	501035	Richard Brady & Associates Inc.		1,149,375.51
	Sub-Total (501910)					$	6,223,453.88
	TOTAL WATER					**$**	**6,799,252.81**
SOLID WASTE							
22201720	511900	6106			Montrose Environ Group Inc.	$	2,000.00
22201220	511900	6106			Weck Laboratories Inc.		1,191.00
22202328	511900	6710			Cannon Pacific Services Inc.		2,160.00
22200060	511900	6710			One Stop Landscape Supply Center		79,610.26
22202338	511900	6710			Rymax Electric Inc.		3,560.00
22200713	511900	6710			West Coast Arborists Inc.		19,368.00
22201459	511900	6710			Security Signal Devices		25.00
22201261	511900	6903			Omni Enterprise		600.00
22201630	511900	7205			Airgas Usa LLC		2,670.97
22202378	511900	7211			CDW Government Inc.		206.10
22202379	511900	7211			Curvature LLC		654.87
	Sub-Total (511900)					$	112,046.20
SOLID WASTE PROJECTS							
22200729	511910	8601	/	511002	Geo-Logic Associates	$	54,677.67
Carryover	511910	8610	/	511002	Landfill Site Work		734,162.02
Carryover	511910	8501	/	511003	Gas Collection System		43,421.00
Carryover	511910	6710	/	511003	Gas Collection System		40,000.00
Carryover	511910	8704	/	511005	Solid Waste Collection Vehicles		726,658.00
Carryover	511910	8706	/	511005	Solid Waste Collection Vehicles		82,800.00
Carryover	511910	8501	/	511006	Landfill Office and Buildings		2,617.16
Carryover	511910	8801	/	511007	Landfill Vehicles		150,000.00
	Sub-Total (511910)					$	1,834,335.85
	TOTAL SOLID WASTE					**$**	**1,946,382.05**

CITY OF REDLANDS
ENCUMBRANCES - OTHER FUNDS
AS OF 06/30/2021

P.O. #	ACCT. #				VENDOR		AMOUNT
SEWER SERVICES							
22200145	521900	6106			Babcock Laboratories Inc.	$	44,533.43
22201181	521900	6106			Babcock Laboratories Inc.		4,497.00
22200692	521900	6106			CASC Engineering And Consulting Inc.		802.34
22200681	521900	6106			Hilltop Geotechnical Inc.		6,524.84
22201720	521900	6106			Montrose Environmental Group Inc.		2,000.00
22200710	521900	6106			Raftelis Financial Consultants		10,577.96
22201882	521900	6106			Raftelis Financial Consultants		12,444.00
22200696	521900	6106			Willdan		44,670.00
22201946	521900	6106			The Converse Professional Group Inc.		8,000.00
22202381	521900	6703			Swiftcomply Us Opco Inc.		4,800.00
22202230	521900	6710			Tryco General Engineering		192,736.00
22200873	521900	6710			Synagro Wwt Inc.		176,918.86
22201459	521900	6710			Security Signal Devices		237.75
22201982	521900	6710			International Accreditation Service Inc.		2,000.00
22201261	521900	6903			Omni Enterprise		3,750.00
22200174	521900	6908			Evoqua Water Technologies LLC		700.66
22202153	521900	7211			CDW Government Inc.		1,341.81
22200425	521900	7211			AMR Installs Inc.		918.00
22200045	521900	7803			Brenntag		3,161.62
22202130	521900	7810			Goforth & Marti		5,510.25
22202334	521900	7810			Goforth & Marti		5,676.39
22200388	521900	7810			LCP Tracker Inc.		9,016.67
22200680	521900	7810			Virtual Project Manager		4,666.75
22201930	521900	8704			Glen B Dorning Inc.		26,998.53
Carryover	521900	8704			Motor Vehicles		192,465.86
22202384	521900	8705			YSI Inc.		25,814.80
	Sub-Total (521900)					$	790,763.52
SEWER PROJECTS							
Carryover	521910	8501	/	521001	Wastewater Collections Office Remodel	$	17,448.00
22201311	521910	6106	/	521003	Rincon Consultants Inc.		173,125.06
Carryover	521910	6106	/	521003	Alabama Septage Pond Site Assessment		42,920.19
Carryover	521910	6106	/	521004	WWTP Assessment		371,695.00
Carryover	521910	6710	/	521005	Centrifuge & SCADA Conveyor		225,000.00
22200276	521910	6106	/	521006	Wildermuth Environmental Inc.		28,703.00
22200504	521910	8401	/	521006	Parsons Water & Infrastructure		3,911,393.06
22200730	521910	8401	/	521006	Zenon Environmental Corp		1,028,438.38
22201012	521910	8401	/	521006	GSE Construction Company Inc.		2,775,977.49
Carryover	521910	8401	/	521006	WWTP Modifications		677,584.25
22200589	521910	6106	/	521010	Dudek & Associates Inc.		76,318.75
Carryover	521910	6106	/	521010	Wastewater Master Plan Update		56,040.00
Carryover	521910	6106	/	521011	WW Vulnerability Assessment & Emergency		50,000.00
22200676	521910	7901	/	521012	Manhole Adjusting In		24,801.20
Carryover	521910	8401	/	521013	Brine Cap Rehabilitation		70,000.00
Carryover	521910	8401	/	521014	On-Call WW System Improvements		41,124.72
Carryover	521910	8401	/	521015	WWTP Chemical Storage Tank Rplcmnt		150,000.00
Carryover	521910	8501	/	521018	Storm water-Hillside Stabilization		50,000.00
22200661	521910	6106	/	521023	Krieger & Stewart Inc.		90,228.83
Carryover	521910	6106	/	521023	Pretreatment Prg Rev & LCL Lmt Study		62,659.99
	Sub-Total (521910)					$	9,923,457.92
	TOTAL SEWER					**$**	**10,714,221.44**

CITY OF REDLANDS
ENCUMBRANCES - OTHER FUNDS
AS OF 06/30/2021

P.O. #	ACCT. #				VENDOR		AMOUNT
NON-POTABLE WATER PROJECTS							
22200590	531910	6106	/	531002	Michael Baker International	$	112,693.50
Carryover	531910	6106	/	531002	Nonpotable Master Plan Update		350.00
22202394	531910	7901	/	531003	Layne Christensen Co		44,541.75
22200674	531910	6106	/	531004	West Yost & Associates Inc.		26,238.04
22201690	531910	6106	/	531004	West Yost & Associates Inc.		288,766.57
Carryover	531910	6106	/	531004	Recycled Water Regulatory Compliance		222,871.73
Carryover	531910	8402	/	531005	South Mountain Water Board Project		111,000.00
	TOTAL					**$**	**806,461.59**
CEMETERY							
22200787	562900	6710			Cannon Pacific Services Inc.	$	3,000.00
22201261	562900	6903			Omni Enterprise		2,000.00
	TOTAL					**$**	**5,000.00**
AVIATION							
22201885	564900	6106			Firehawk Corporation	$	1,293.45
22201459	564900	6710			Security Signal Devices		137.50
22201261	564900	6903			Omni Enterprise		1,250.00
	TOTAL					**$**	**2,680.95**
INFORMATION TECHNOLOGY SERVICES							
22201112	604900	6106			Eco Office Werks LLC	$	1,160.00
22202387	604900	6106			Rampart Security Solutions Inc.		2,355.00
22202181	604900	6403			Solutions Ii Inc.		199.99
22201914	604900	6703			BMC Software Inc.		2,649.27
22200225	604900	6703			Oracle America Inc.		775.40
22200565	604900	6703			Oracle America Inc.		823.61
22200275	604900	6703			San Bernardino County Sheriff's Dept		426.94
22202181	604900	6703			Solutions Ii Inc.		1,067.94
22202286	604900	6703			Superion LLC		5,138.77
22201153	604900	6703			Trebron Company Inc.		2,256.00
22202287	604900	6703			Tritech Software Systems		6,036.81
22201976	604900	6703			Vertiv Corporation		17,626.75
22202288	604900	6703			Progress Software Corporation		6,936.78
22202395	604900	6703			Alliant Cybersecurity LLC		8,141.25
Carryover	604900	6703			Software Support and Development		100,000.00
22201459	604900	6710			Security Signal Devices		86.75
22200856	604900	6907			Crown Castle Fiber LLC		400.00
22201025	604900	6907			Leverage Information Systems		3,000.00
22201666	604900	7201			Cms Communications Inc.		235.97
22202380	604900	7201			Southern Computer Warehouse		1,559.52
22202125	604900	7201			Key Code Media Inc.		516.56
Carryover	604900	7201			Hardware Maintenance and Replacement		100,000.00
Carryover	604900	7211			Computer Components		100,000.00
22201245	604900	8703			Convergeone Inc.		3,324.35
Carryover	604900	8703			Computer Equipment		150,000.00
	TOTAL					**$**	**514,717.66**

CITY OF REDLANDS
ENCUMBRANCES - OTHER FUNDS
AS OF 06/30/2021

P.O. #	ACCT. #	VENDOR	AMOUNT
UTILITY BILLING			
22200518	608900 6601	Inland Presort And Mailing Services	$ 8,380.74
	TOTAL		**$ 8,380.74**
	TOTAL ENCUMBRANCES		**$ 13,507,309.60**
	TOTAL CARRYOVERS		**8,488,066.96**
	TOTAL NON-GENERAL FUND		**$ 21,995,376.56**

Grant Carryovers
06/30/2021

PROJECT NAME	ACCOUNT STRING	GL NAME	Department	GL ORG	GL OBJ	CARRYOVER AMOUNT REVENUE	EXPENDITURES	MATCH
FY18/19 Civic Center ADA Imprvmnt	F164001 -CDBG -	Federal Grants	DSD	200164	4407	(111,290.27)		
FY19/20 Alley/Street Improvement	F164002 -CDBG -	Federal Grants	DSD	200164	4407	(19,701.38)		
CDBG-SB Sexual Assault Services	F164004 -CDBG -FY2021	Federal Grants	DSD	200164	4407	(2,562.19)		
Joslyn Senior Center Rehab Project	F164010 -CDBG -	Federal Grants	DSD	200164	4407	(326,064.86)		
Joslyn Senior Center Rehab Project	F164010 -NONCAP -PERSNL -	Salaries: Full-Time	DSD	200164	5001		18,812.53	
Joslyn Senior Center Rehab Project	F164010 -NONCAP -PERSNL -	Pension Contributions	DSD	200164	5401		4,755.22	
Joslyn Senior Center Rehab Project	F164010 -NONCAP -PERSNL -	Social Security/Medicare	DSD	200164	5501		1,438.84	
Joslyn Senior Center Rehab Project	F164010 -NONCAP -PERSNL -	Health/Dental Insurance	DSD	200164	5701		2,745.60	
Joslyn Senior Center Rehab Project	F164010 -NONCAP -PERSNL -	Disability Insurance	DSD	200164	5703		48.00	
Joslyn Senior Center Rehab Project	F164010 -NONCAP -PERSNL -	Unemployment Insurance	DSD	200164	5704		75.86	
Joslyn Senior Center Rehab Project	F164010 -NONCAP -PERSNL -	Life Insurance	DSD	200164	5705		10.81	
Joslyn Senior Center Rehab Project	F164010 -NONCAP -MISC -	License & Permits	DSD	200164	6005		2,491.70	
Joslyn Senior Center Rehab Project	F164010 -NONCAP -MISC -	Architect & Engineer	DSD	200164	6101		21,900.00	
Joslyn Senior Center Rehab Project	F164010 -NONCAP -MISC -	Printing and Binding	DSD	200164	6901		400.00	
Joslyn Senior Center Rehab Project	F164010 -NONCAP -MISC -	Advertising & Other Misc Exp	DSD	200164	6902		650.00	
Joslyn Senior Center Rehab Project	F164010 -CAP -CON&CONMGT-	Building Const/Improv	DSD	200164	8503		262,878.00	
CDBG-CV Senior Meals Program FCS	F16412A -CDBG -	Federal Grants	DSD	200164	4407	(27,970.54)		
CDBG-CV Senior Meals Program FCS	F16412A -NONCAP -PERSNL -	Salaries: Full-Time	DSD	200164	5001		13,810.57	
CDBG-CV Senior Meals Program FCS	F16412A -NONCAP -PERSNL -	Salaries: Part-Time	DSD	200164	5002		0.00	
CDBG-CV Senior Meals Program FCS	F16412A -NONCAP -PERSNL -	Pension Contributions	DSD	200164	5401		4,027.16	
CDBG-CV Senior Meals Program FCS	F16412A -NONCAP -PERSNL -	Social Security/Medicare	DSD	200164	5501		1,077.10	
CDBG-CV Senior Meals Program FCS	F16412A -NONCAP -PERSNL -	Health/Dental Insurance	DSD	200164	5701		2,869.85	
CDBG-CV Senior Meals Program FCS	F16412A -NONCAP -PERSNL -	Workers' Comp Insurance	DSD	200164	5702		0.00	
CDBG-CV Senior Meals Program FCS	F16412A -NONCAP -PERSNL -	Disability Insurance	DSD	200164	5703		143.24	
CDBG-CV Senior Meals Program FCS	F16412A -NONCAP -PERSNL -	Unemployment Insurance	DSD	200164	5704		0.00	
CDBG-CV Senior Meals Program FCS	F16412A -NONCAP -PERSNL -	Life Insurance	DSD	200164	5705		10.71	
CDBG-CV Senior Meals Program FCS	F16412A -NONCAP -MISC -	Special Departmental Supplies	DSD	200164	7810		425.29	
CDBG-CV Housing Inland Housing Sol	F16412B -CDBG -	Federal Grants	DSD	200164	4407	(3,544.12)		
CDBG-CV Senior Meals Program FSA	F16412C -CDBG -	Federal Grants	DSD	200164	4407	(15,564.26)		
CDBG Unprogrammed Funds	F164013 -CDBG -	Federal Grants	DSD	200164	4407	(27,483.21)		
CDBG Unprogrammed Funds	F164013 -NONCAP -MISC -	Non-Capital Expenditures	DSD	200164	7901		27,483.21	
CDBG-CV3 Family Srvc Assoc of Redl	F16428A -CDBG -	Federal Grants	DSD	200164	4407	(125,000.00)		
CDBG-CV3 Family Srvc Assoc of Redl	F16428A -NONCAP -MISC -	Special Contractual Services	DSD	200164	6710		125,000.00	
CDBG-CV3 Inland Temporary Homes	F16428B -CDBG -	Federal Grants	DSD	200164	4407	(110,920.00)		
CDBG-CV3 Inland Temporary Homes	F16428B -NONCAP -MISC -	Special Contractual Services	DSD	200164	6710		110,920.00	
CDBG-CV3 FCS Senior Transportation	F16428C -CDBG -	Federal Grants	DSD	200164	4407	(24,000.00)		
CDBG-CV3 FCS Senior Transportation	F16428C -NONCAP -MISC -	Compressed Natural Gas (LCNG)	DSD	200164	7302		3,000.00	
CDBG-CV3 FCS Senior Transportation	F16428C -NONCAP -MISC -	Special Departmental Supplies	DSD	200164	7810		3,000.00	
CDBG-CV3 FCS Senior Transportation	F16428C -NONCAP -PERSNL -	Salaries: Part-Time	DSD	200164	5002		18,000.00	
CDBG-CV3 FCS Senior Care Program	F16428D -CDBG -	Federal Grants	DSD	200164	4407	(31,000.00)		
CDBG-CV3 FCS Senior Care Program	F16428D -NONCAP -MISC -	Special Contractual Services	DSD	200164	6710		20,000.00	
CDBG-CV3 FCS Senior Care Program	F16428D -NONCAP -MISC -	Compressed Natural Gas (LCNG)	DSD	200164	7302		1,000.00	
CDBG-CV3 FCS Senior Care Program	F16428D -NONCAP -PERSNL -	Salaries: Part-Time	DSD	200164	5002		10,000.00	
SB2 Planning Grants Program	S164009 -SB2 -	State Grants	DSD	200164	4401	(310,000.00)		
SB2 Planning Grants Program	S164009 -NONCAP -MISC -	Other Professional Services	DSD	200164	6106		222,934.52	
LEAP-Housing Element Update	S16426A -LEAP -	State Grants	DSD	200164	4401	(241,045.00)		
LEAP-Housing Element Update	S16426A -NONCAP -MISC -	Other Professional Services	DSD	200164	6106		131,699.27	
LEAP-Transit Village Plan EIR	S16426B -LEAP -	State Grants	DSD	200164	4401	(58,955.00)		
LEAP-Transit Village Plan EIR	S16426B -NONCAP -MISC -	Other Professional Services	DSD	200164	6106		53,160.00	
			DSD Total			**(1,435,100.83)**	**1,064,767.48**	**0.00**
FY17 Bryne Justice Assistance Grant	F202005 -JAG -	Federal Grants	Police	200202	4407	(13,937.00)		
FY17 Bryne Justice Assistance Grant	F202005 -NONCAP -MISC -	Special Dept Supplies	Police	200202	7810		13,937.00	
FY18 Bryne Justice Assistance Grant	F202006 -JAG -	Federal Grants	Police	200202	4407	(13,826.00)		
FY18 Bryne Justice Assistance Grant	F202006 -NONCAP -MISC -	Special Dept Supplies	Police	200202	7810		13,826.00	
FY18 Homeland Security Grant Prgm	F202007 -CAP -EQUIP -	All Other Equipment	Police	200202	8706		20,800.00	
FY18 Homeland Security Grant Prgm	F202007 -HSGP -	Federal Grants	Police	200202	4407	(20,800.00)		
FY2019 HSGP-Riverside UASI	F202009 -CAP -EQUIP -	All Other Equipment	Police	200202	8706		45,000.00	
FY2019 HSGP-Riverside UASI	F202009 -HSGP -	Federal Grants	Police	200202	4407	(45,000.00)		
FY20 BJA Coronavirus Emerg Supp Fnd	F202010 -BJA -	Federal Grants	Police	200202	4407	(34,630.16)		
FY20 BJA Coronavirus Emerg Supp Fnd	F202010 -NONCAP -MISC -	Special Dept Supplies	Police	200202	7810		34,474.39	
FY19 Homeland Security Grant Prgm	F202018 -CAP -EQUIP -	All Other Equipment	Police	200202	8706		20,451.00	
FY19 Homeland Security Grant Prgm	F202018 -HSGP -	Federal Grants	Police	200202	4407	(20,451.00)		
FY20/21 OTS Selective Trfc Enfrcmnt	F202019 -STEP -	Federal Grants	Police	200202	4407	(96,188.98)		
FY20/21 OTS Selective Trfc Enfrcmnt	F202019 -NONCAP -PERSNL -	OT Reimbursable	Police	200202	5102		60,880.45	
FY20/21 OTS Selective Trfc Enfrcmnt	F202019 -NONCAP -TRVL -	Travel Reimbursement	Police	200202	6402		3,613.38	
FY20/21 OTS Selective Trfc Enfrcmnt	F202019 -NONCAP -MISC -	Special Dept Supplies	Police	200202	7810		2,712.91	
FY19 Bryne Justice Assistance Grant	F202020 -JAG -	Federal Grants	Police	200202	4407	(14,530.00)		
FY19 Bryne Justice Assistance Grant	F202020 -NONCAP -MISC -	Special Dept Supplies	Police	200202	7810		14,530.00	
FY20 Bryne Justice Assistance Grant	F202021 -JAG -	Federal Grants	Police	200202	4407	(14,374.00)		
FY20 Bryne Justice Assistance Grant	F202021 -NONCAP -MISC -	Special Dept Supplies	Police	200202	7810		14,374.00	
San Manuel RESA Grant	P202022 -OTH GRANT -	Other Grants	Police	200202	4410	(28,000.00)		
San Manuel RESA Grant	P202022 -NONCAP -PERSNL -	Overtime Salaries	Police	200202	5101		28,000.00	
19/20 Tobacco Grant	S202003 -CDOJ -	State Grants	Police	200202	4401	(5,021.31)		
Bd of State & Community Corrections	S202004 -BSCC -	State Grants	Police	200202	4401	(23,207.52)		
Bd of State & Community Corrections	S202004 -NONCAP -MISC -	Special Contractual Services	Police	200202	6710		23,207.52	
FY20/21 Alcoholic Beverage Control	S202023 -ABC -	State Grants	Police	200202	4401	(15,271.24)		
FY20/21 Alcoholic Beverage Control	S202023 -NONCAP -PERSNL -	OT Reimbursable	Police	200202	5102		7,730.21	
			POLICE TOTAL			**(345,237.21)**	**303,536.86**	**0.00**
FY2017 Pre-Disaster Mitigation Grnt	F250002 -FEMA -	Federal Grants	Fire	200250	4407	(99,949.99)		
FY2017 Pre-Disaster Mitigation Grnt	F250002 -NONCAP -MISC -	Other Professional Services	Fire	200250	6106		93,407.21	
FY2017 Pre-Disaster Mitigation Grnt	F250002 -MATCH -FEMA -	Reimbursed Expenditures	Fire	200250	6912		(23,351.81)	
FY19 Homeland Security Grant Prgm	F250013 -HSGP -	Federal Grants	Fire	200250	4407	(17,930.00)		
FY20 AFG-COVID 19 Supplemental Prgm	F250015 -AFG -	Federal Grants	Fire	200250	4407	(34,081.82)		
FY20 AFG-COVID 19 Supplemental Prgm	F250015 -MATCH -LOCAL -	Reimbursed Expenditures	Fire	200250	6912		(1,510.03)	
FY20 AFG-COVID 19 Supplemental Prgm	**NONE**	Reimbursed Expenditures	Fire	**101250**	6912			1,510.03
FY20 AFG-COVID 19 Supplemental Prgm	F250015 -NONCAP -MISC -	Special Departmental Supplies	Fire	200250	7810		18,508.51	
FY20 Emergency Mgt Performance Grnt	F250020 -EMPG -	Federal Grants	Fire	200250	4407	(16,761.00)		
SoCalGas Climate Adaptation Prgm	P250001 -OTH GRANT -	Other Grants	Fire	200250	4410	(32,588.74)		
SoCalGas Climate Adaptation Prgm	P250001 -NONCAP -PERSNL -	Salaries: Part-Time	Fire	200250	5002		3,603.99	

Grant Carryovers
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SoCalGas Climate Adaptation Prgm	P250001	-NONCAP -MISC -	Printing & Binding	Fire	200250	6901		0.22	
SoCalGas Climate Adaptation Prgm	P250001	-NONCAP -MISC -	Reimbursed Expenditures	Fire	200250	6912		23,351.81	
SoCalGas Climate Adaptation Prgm	P250001	-NONCAP -MISC -	Office Supplies	Fire	200250	7002		5,547.53	
SoCalGas Climate Adaptation Prgm	P250001	-NONCAP -MISC -	Computer Components	Fire	200250	7211		85.19	
Household Hazardous Waste Grnt Cy34	S250019	-CAHHW -	State Grants	Fire	200250	4401	(244,500.00)		
Household Hazardous Waste Grnt Cy34	S250019	-CAP -CON&CONMGT-	Other Betterments/Improv	Fire	200250	8501		228,291.80	
Household Hazardous Waste Grnt Cy34	S250019	-NONCAP -PERSNL -	Salaries: Full-Time	Fire	200250	5001		16,208.20	
				FIRE TOTAL			**(445,811.55)**	**364,142.62**	**1,510.03**
2021 California Market Match Prgm	C300005	-CNIP -FEDERAL	Federal Grants	FCS	200300	4407	(1,639.93)		
2021 California Market Match Prgm	C300005	-CNIP -STATE	State Grants	FCS	200300	4401	0.00		
2021 California Market Match Prgm	C300005	-NONCAP -INCENTIVE -	Food Incentives	FCS	200300	7807		1,456.93	
2021 California Market Match Prgm	C300005	-NONCAP -PERSNL -	Salaries: Full-Time	FCS	200300	5001		0.00	
2021 California Market Match Prgm	C300005	-NONCAP -PERSNL -	Pension Contributions	FCS	200300	5401		0.00	
2021 California Market Match Prgm	C300005	-NONCAP -PERSNL -	Social Security/Medicare	FCS	200300	5501		0.00	
2021 California Market Match Prgm	C300005	-NONCAP -PERSNL -	Deferred Compensation	FCS	200300	5601		0.00	
2021 California Market Match Prgm	C300005	-NONCAP -PERSNL -	Health/Dental Insurance	FCS	200300	5701		0.00	
2021 California Market Match Prgm	C300005	-NONCAP -PERSNL -	Workers' Comp Insurance	FCS	200300	5702		0.00	
2021 California Market Match Prgm	C300005	-NONCAP -PERSNL -	Disability Insurance	FCS	200300	5703		0.00	
2021 California Market Match Prgm	C300005	-NONCAP -PERSNL -	Unemployment Insurance	FCS	200300	5704		0.00	
2021 California Market Match Prgm	C300005	-NONCAP -PERSNL -	Life Insurance	FCS	200300	5705		0.00	
21-22 OmniTrans Senior Transp Progm	P309006	-OMNI -	Other Grants	FCS	200309	4410	(150,709.29)		
21-22 OmniTrans Senior Transp Progm	P309006	-NONCAP -PERSNL -	Salaries: Full-Time	FCS	200309	5001		131,080.64	
21-22 OmniTrans Senior Transp Progm	P309006	-NONCAP -PERSNL -	Overtime Salaries	FCS	200309	5101		0.00	
21-22 OmniTrans Senior Transp Progm	P309006	-NONCAP -PERSNL -	Holiday Pay	FCS	200309	5202		0.00	
21-22 OmniTrans Senior Transp Progm	P309006	-NONCAP -PERSNL -	Pension Contributions	FCS	200309	5401		0.00	
21-22 OmniTrans Senior Transp Progm	P309006	-NONCAP -PERSNL -	Social Security/Medicare	FCS	200309	5501		0.00	
21-22 OmniTrans Senior Transp Progm	P309006	-NONCAP -PERSNL -	Health/Dental Insurance	FCS	200309	5701		0.00	
21-22 OmniTrans Senior Transp Progm	P309006	-NONCAP -PERSNL -	Workers' Comp Insurance	FCS	200309	5702		0.00	
21-22 OmniTrans Senior Transp Progm	P309006	-NONCAP -PERSNL -	Disability Insurance	FCS	200309	5703		0.00	
21-22 OmniTrans Senior Transp Progm	P309006	-NONCAP -PERSNL -	Unemployment Insurance	FCS	200309	5704		0.00	
21-22 OmniTrans Senior Transp Progm	P309006	-NONCAP -PERSNL -	Life Insurance	FCS	200309	5705		0.00	
21-22 OmniTrans Senior Transp Progm	P309006	-NONCAP -MISC -	Telephone	FCS	200309	6304		1,115.37	
21-22 OmniTrans Senior Transp Progm	P309006	-NONCAP -MISC -	Advertising	FCS	200309	6902		2,000.00	
21-22 OmniTrans Senior Transp Progm	P309006	-MATCH -LOCAL -	Reimbursed Expenditures	FCS	200309	6912		(33,409.56)	
21-22 OmniTrans Senior Transp Progm	NONE		Reimbursed Expenditures	FCS	**101309**	6912			33,409.56
21-22 OmniTrans Senior Transp Progm	P309006	-NONCAP -MISC -	Vehicle Maintenance	FCS	200309	7206		16,269.67	
21-22 OmniTrans Senior Transp Progm	P309006	-NONCAP -MISC -	Compressed Natural Gas (LCNG)	FCS	200309	7302		16,582.15	
				FCS TOTAL			**(152,349.22)**	**135,095.20**	**33,409.56**
Highland/Redlands Regnl Connector	C400005	-HIGHLAND -	State Grants	MUED	200400	4401	(1,420,769.32)		
Highland/Redlands Regnl Connector	C400005	-PREENG -DESIGN -COH	Other Professional Services	MUED	200400	6106		0.00	
Highland/Redlands Regnl Connector	C400005	-MATCH -COH -	Reimbursed Expenditures	MUED	200400	6912		(14,535.08)	
Highland/Redlands Regnl Connector	NONE		Reimbursed Expenditures	MUED	**209400**	6912			14,535.08
Highland/Redlands Regnl Connector	C400005	-CONST -CON&CONMGT-COH	Other Betterments/Improv	MUED	200400	8501		1,435,304.40	
East Valley Corridor Bike Rte Proj	C400007	-ATP -PH3	State Grants	MUED	200400	4401	(2,112,000.00)		
East Valley Corridor Bike Rte Proj	C400007	-CONST -CON&CONMGT-ATP	Other Betterments/Improv	MUED	200400	8501		2,112,000.00	
Cycle 7-Pedestrian Crosswalk Enhanc	C400008	-HSIP -PH2	Federal Grants	MUED	200400	4407	(753.28)		
Cycle 8-Emergency Veh Preemption	F400001	-HSIP -	Federal Grants	MUED	200400	4407	(1,147,179.63)		
Cycle 8-Emergency Veh Preemption	F400001	-PREENG -PERSNL -	Salaries: Full-Time	MUED	200400	5001		84,206.63	
Cycle 8-Emergency Veh Preemption	F400001	-PREENG -MISC -	Other Professional Services	MUED	200400	6106		0.00	
Cycle 8-Emergency Veh Preemption	F400001	-CONST -CON&CONMGT-	Other Betterments/Improv	MUED	200400	8501		1,039,500.00	
Cycle 8-Pedestrian Countdown Heads	F400002	-HSIP -	Federal Grants	MUED	200400	4407	(238,849.31)		
Cycle 8-Pedestrian Countdown Heads	F400002	-CONST -CON&CONMGT-	Other Betterments/Improv	MUED	200400	8501		233,300.00	
Bridge Preventive Maintenance Plan	F400004	-BPMPL -	Federal Grants	MUED	200400	4407	(62,375.89)		
Cycle 9-In-Roadway Lights for OBT3	F400006	-HSIP -	Federal Grants	MUED	200400	4407	(250,000.00)		
Cycle 9-In-Roadway Lights for OBT3	F400006	-PREENG -PERSNL -	Salaries: Full-Time	MUED	200400	5001		43,000.00	
Cycle 9-In-Roadway Lights for OBT3	F400006	-CONST -CON&CONMGT-	Other Betterments/Improv	MUED	200400	8501		207,000.00	
Highland/Redlands Regnl Connector	C400005	-TDA -	TDA State Gran	MUED	241400	4401	(157,934.00)		
Highland/Redlands Regnl Connector	C400005	-CONST -CON&CONMGT-TDA	TDA Other Bett	MUED	241400	8501		175,482.00	
Highland/Redlands Regnl Connector	C400005	-MATCH -TDA -	TDA Reimbursed	MUED	241400	6912		(17,548.00)	
Highland/Redlands Regnl Connector	NONE		Reimbursed Expenditures	MUED	**101400**	6912			17,548.00
East Valley Corridor Bike Rte Proj	C400007	-TDA -PH1	TDA State Gran	MUED	241400	4401	(34,609.09)		
East Valley Corridor Bike Rte Proj	C400007	-TDA -PH2	TDA State Gran	MUED	241400	4401	(80,000.00)		
East Valley Corridor Bike Rte Proj	C400007	-TDA -PH3	TDA State Gran	MUED	241400	4401	(50,401.00)		
East Valley Corridor Bike Rte Proj	C400007	-PREENG -DESIGN -TDA	TDA Other Prof	MUED	241400	6106		70,046.49	
East Valley Corridor Bike Rte Proj	C400007	-PREENG -ROW -TDA	TDA Other Prof	MUED	241400	6106		135,000.00	
East Valley Corridor Bike Rte Proj	C400007	-MATCH -OTHER -	TDA Reimbursed	MUED	241400	6912		(42,751.40)	
East Valley Corridor Bike Rte Proj	C400007	-MATCH -TDA -PH 2	TDA Reimbursed	MUED	241400	6912		(55,000.00)	
East Valley Corridor Bike Rte Proj	C400007	-CONST -CON&CONMGT-TDA	TDA Other Bett	MUED	241400	8501		50,401.00	
East Valley Corridor Bike Rte Proj	NONE		Cost Recovery	MUED	**209400**	4415	(44,000.00)		
East Valley Corridor Bike Rte Proj	NONE		TDA Reimbursed	MUED	**209400**	6912			42,751.40
East Valley Corridor Bike Rte Proj	NONE		TDA Reimbursed	MUED	**209400**	6912			55,000.00
Orange Blossom Trail Phase III	S241001	-TDA -	TDA State Gran	MUED	241400	4401	(811,163.95)		
Orange Blossom Trail Phase III	S241001	-NONCAP -MISC -	TDA Printing a	MUED	241400	6901		1,809.93	
Orange Blossom Trail Phase III	S241001	-MATCH -BEAR VLY -	TDA Reimbursed	MUED	241400	6912		(13,800.00)	
Orange Blossom Trail Phase III	NONE		Cost Recovery	MUED	**101400**	4415	(13,800.00)		
Orange Blossom Trail Phase III	NONE		TDA Reimbursed	MUED	**101400**	6912			13,800.00
Orange Blossom Trail Phase III	S241001	-MATCH -PB TRAIL -	TDA Reimbursed	MUED	241400	6912		(129,347.15)	
Orange Blossom Trail Phase III	NONE		TDA Reimbursed	MUED	**101400**	6912			129,347.15
Orange Blossom Trail Phase III	S241001	-CAP -CON&CONMGT-	OBT III Trail Construction	MUED	241400	8405		952,501.17	
				MUED TOTAL			**(6,423,835.47)**	**6,266,569.99**	**272,981.63**
CalRecycle Bev Cont City/Cnty Pymts	S511001	-CAPRS -	State Grants	Solid Waste	511910	4401	(36,398.83)		
CalRecycle Bev Cont City/Cnty Pymts	S511001	-NONCAP -MISC -	SW Ops Training	Solid Waste	511910	6403		0.00	
CalRecycle Bev Cont City/Cnty Pymts	S511001	-NONCAP -MISC -	Special Departmental Supplies	Solid Waste	511910	7810		36,398.83	
				SOLID WASTE TOTAL			**(36,398.83)**	**36,398.83**	**0.00**
CA Aid to Airports Program (CAAP)	S564001	-CAAP -	AirportOps State Gran	Airport	564910	4401	(15,920.00)		
CA Aid to Airports Program (CAAP)	S564001	-NONCAP -MISC -	AirportOps Building/G	Airport	564910	7204		15,920.00	
				AIRPORT TOTAL			**(15,920.00)**	**15,920.00**	**0.00**
				GRAND TOTAL			**(8,854,653.11)**	**8,186,430.98**	**307,901.22**

"A City That Works"

City Council/Financing Authority Meeting **I. 4.**

DATE: 01/18/2022

TO: Honorable Mayor and City Council Members

SUBJECT: Approve a revised request from Crown Castle to consent to the co-location of facilities on an existing cellular tower lease site at the Dearborn Reservoir site, and determine that this action is exempt from environmental review pursuant to Section 15061(b)(3) of the State's guidelines implementing the California Environmental Quality Act (Municipal Utilities and Engineering Director Harris)

MOTION(S):

If the City Council determines that the staff recommendation is appropriate, the following motions are provided:

1. I move that the City Council determine that approval of the revised request to co-locate facilities on an existing cellular tower lease site at the Dearborn Reservoir site is exempt from environmental review under Section 15061(b)(3) of the State's guidelines implementing the California Environmental Quality Act;

2. I move that the City Council approve the revised Crown Castle Consent Request to co-locate facilities on an existing cellular tower lease site at the Dearborn Reservoir site.

RECOMMENDATION:

Staff recommends City Council determine approval of the revised Consent Request with Crown Castle to co-locate facilities on an existing cellular tower lease site at the Dearborn Reservoir site is exempt from environmental review under Section 15061(b)(3) of the State's guidelines implementing the California Environmental Quality Act and approve the revised Consent Request.

DISCUSSION:

In July 2006, the City of Redlands executed an Agreement with New Cingular Wireless PCS, LLC to lease approximately 925 square feet of the City's Dearborn Reservoir site to construct cellular communication infrastructure. This infrastructure includes an antenna support structure and communication equipment for a wireless service facility. The initial term of this Agreement was for five (5) years, and included three (3) automatic 5-year renewals, for a total of twenty (20) years. New Cingular Wireless PCS, LLC is a subsidiary of AT&T. In 2014, AT&T assigned all rights and obligations of the ground lease Agreement to Crown Castle.

Crown Castle would now like to co-locate DISH Network facilities on the Dearborn Reservoir cellular tower lease site. The co-location will include the installation of new equipment within Crown Castle's lease area, but will not alter the character or use of the leased area. Section 7 - Assignment/Subletting of the current Agreement states the following:

"Tenant shall not sell, assign, or transfer this Lease or sublet all or any portion of the site to any other party without the prior written consent of Landlord, which consent shall not be unreasonably withheld."

On October 19, 2021, Ciy Council accepted the Consent Request with Crown Castle. Soon after, the location of the DISH Network facilities was revised, and Crown Castle requested approval of an updated Consent Request and Letter of Authorization. The relocated DISH Network facilities will remain within the Crown Castle lease site, and will not impact water operations.

Acceptance of this revised Consent Request is exempt from environmental review under Section 15061(b)(3) of the State's guidelines implementing the California Environmental Quality Act as it can be seen with certainty it will not have a significant effect on the environment.

ALTERNATIVES:

N/A

STRATEGIC PLAN:

N/A

SUBMITTED BY:
John R. Harris, Municipal Utilities and Engineering Director

RECOMMENDED BY:
Charles M. Duggan Jr., City Manager

REVIEWED BY:
Daniel J. McHugh, City Attorney
Janice McConnell, Assistant City Manager
Danielle Garcia, Management Services/Finance Director

PREPARED BY:
John R. Harris, MUED Director

Fiscal Impact

Discussion:

There is no fiscal impact associated with acceptance of this Consent Request.

Attachments

October 2021 Crown Castle Consent Request
November 2021 Crown Castle Consent Request
Crown Castle LOA
Crown Castle Construction Plans

CROWN CASTLE

200 Spectrum Center Dr,
Irvine, CA 92618

Phone: (480) 735-6948
Email: Angie.Ghobrial-Amer.Contractor@crowncastle.com
www.crowncastle.com

October 19, 2021

VIA email: jharris@cityofredlands.org

CITY OF REDLANDS - CA
PO BOX 3005
REDLANDS, CA 92373

Re: BU 856905 / "ES0079-01 DEARBORN RESERVOIR" / 444 NORTH DEARBORN STREET, REDLANDS, CA 92374 ("Site")Wireless Service Facility Land Lease Agreement, dated July 18, 2006, as it may have been amended and assigned ("Lease")
Consent for sublease

Dear CITY OF REDLANDS - CA,

I am reaching out to you on behalf of CCATT LLC ("Lessee") in order to obtain your consent as may be required by the Lease.

In order to better serve the public and minimize the amount of towers in an area where this property is located, DISH Network intends to sublease a portion of the Site. The sublease will include installation of new equipment within the lease area; however, it will not alter the character or use of the site nor will it change the nature of the occupancy of the Site. As used in this letter, the term "sublease" may include any arrangement by which a third party can install and operate its equipment at the Site as permitted under the Lease.

Under the Lease, Landlord's consent cannot be unreasonably withheld, conditioned or delayed. Please provide your consent **on or before October 29, 2021** by signing below and returning to Angie.Ghobrial-Amer.Contractor@crowncastle.com so that we may install DISH Network's equipment as permitted under the Lease.

If you have any questions concerning this request, please contact Angie Ghobrial-Amer at (480) 735-6948 or Angie.Ghobrial-Amer.Contractor@crowncastle.com

Sincerely,

Angie Amer

Angie Ghobrial-Amer, Real Estate Specialist

Agreed and accepted 10/19/21
(Date)

(Lessor's signature)

PAUL T. BARICH, MAYOR
(Lessor's name and title)

[Enclosures]

P.S. Please indicate below if you are interested in learning more about removing the obligation for you to sign these consent letters and receive a notice letter instead.

☐ *(check here) Yes, I'm interested in learning more.*

November 19, 2021

VIA email

CITY OF REDLANDS - CA
PO BOX 3005
REDLANDS, CA 92373

Re: BU 856905 / "ES0079-01 DEARBORN RESERVOIR" / 444 NORTH DEARBORN STREET, REDLANDS, CA 92374 ("Site") Wireless Service Facility Land Lease Agreement , dated July 18, 2006, as it may have been amended and assigned ("Lease")
Consent for sublease

Dear CITY OF REDLANDS - CA,

I am reaching out to you on behalf of CCATT LLC ("Lessee") in order to obtain your consent as may be required by the Lease.

In order to better serve the public and minimize the amount of towers in an area where this property is located, DISH Network intends to sublease a portion of the Site. The sublease will include installation of new equipment within the lease area; however, it will not alter the character or use of the site nor will it change the nature of the occupancy of the Site. As used in this letter, the term "sublease" may include any arrangement by which a third party can install and operate its equipment at the Site as permitted under the Lease.

Under the Lease, Landlord's consent cannot be unreasonably withheld, conditioned or delayed. Please provide your consent **on or before January 21, 2022** by signing below and returning to Angie.Ghobrial-Amer.Contractor@crowncastle.com so that we may install DISH Network's equipment as permitted under the Lease.

If you have any questions concerning this request, please contact Angie Ghobrial-Amer at (480) 735-6948 or Angie.Ghobrial-Amer.Contractor@crowncastle.com

Sincerely,

Angie Amer

Angie Ghobrial-Amer

Agreed and accepted _____

(Date)

_____

(Lessor's signature)

Real Estate Specialist

_____

(Lessor's name and title)

[Enclosures]

P.S. Please indicate below if you are interested in learning more about removing the obligation for you to sign these consent letters and receive a notice letter instead.

☐ *(check here) Yes, I'm interested in learning more.*

200 Spectrum Center Dr,
Irvine, CA 92618

Phone: (480) 735-6948
www.crowncastle.com

November 19, 2021

VIA Email

CITY OF REDLANDS - CA
PO BOX 3005
REDLANDS, CA 92373

RE: **BU# 856905 – ES0079-01 DEARBORN RESERVOIR**
Site Address: 444 NORTH DEARBORN STREET, REDLANDS, CA 92374

Dear CITY OF REDLANDS - CA:

In order to better serve the public and minimize the amount of towers in an area where a Lease is located, DISH Network plans to modify the equipment at the telecommunication facility. The modification will not alter the character or use of the site nor will it change the nature of Crown Castle's occupancy of the site.

The CITY OF REDLANDS, CA requires Landowners Authorization for applications related to Land Use, zoning and/or building permits. Therefore, I respectfully request your notarized signature where indicated on the enclosed Property Owner Letter of Authorization (a notary Acknowledgement form is included, and a notary can be scheduled to meet with you upon request).

Thank you for your continued cooperation with Crown Castle. If you have any questions concerning this request, please feel free contact me at (480) 735-6948 or via email at Angie.Ghobrial-Amer.Contractor@crowncastle.com

Yours truly,

Angie Amer

Angie Ghobrial-Amer
Real Estate Specialist
(480) 735-6948
Angie.Ghobrial-Amer.Contractor@crowncastle.com

Property Owner Letter of Authorization

CITY OF REDLANDS, CA
35 CAJON STREET SUITE 20
REDLANDS, CA 92373

Re: Zoning/ Permitting – Plan / Design Review Process

I hereby represent that I am the legal owner of the property referenced below, and I hereby give my authorization to DISH NETWORK and/or its Agent(s), to act as our Agent(s) in processing and obtaining approval for Building and/or Zoning permits through the CITY OF REDLANDS, CA for the modification of the facility located at the existing wireless communications site described as:

Crown Site ID:	**856905/ES0079-01 DEARBORN RESERVOIR**
DISH NETWORK Site ID:	**LSSNA03071A/CA-CCI-T-856905**
Site Address:	**444 NORTH DEARBORN STREET, REDLANDS, CA 92374**
APN:	**0170-302-17-0000**

Property Owner: CITY OF REDLANDS - CA

Signature: _____

Print Name:_____

Date: _____

DISH WIRELESS L.L.C. SITE ID:

LSSNA03071A

DISH WIRELESS L.L.C. SITE ADDRESS:

444 NORTH DEARBORN
REDLANDS, CA 92374

CALIFORNIA - CODE COMPLIANCE

ALL WORK SHALL BE PERFORMED AND MATERIALS INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES:

CODE TYPE	CODE
BUILDING	2019 CALIFORNIA BUILDING CODE (CBC)/2018 IBC
MECHANICAL	2019 CALIFORNIA MECHANICAL CODE (CMC)/2018 UMC
ELECTRICAL	2019 CALIFORNIA ELECTRICAL CODE (CEC)/2017 NEC

SHEET INDEX

SHEET NO.	SHEET TITLE
T-1	TITLE SHEET
LS-1	LAND SURVEY (BY OTHERS)
A-1	OVERALL AND ENLARGED SITE PLAN
A-2.1	EXISTING AND PROPOSED ELEVATIONS
A-2.2	ANTENNA LAYOUT AND SCHEDULE
A-3	EQUIPMENT SLAB AND H-FRAME DETAILS
A-4	EQUIPMENT DETAILS
A-5	EQUIPMENT DETAILS
A-6	EQUIPMENT DETAILS
E-1	ELECTRICAL/FIBER ROUTE PLAN AND NOTES
E-2	ELECTRICAL DETAILS
E-3	ELECTRICAL ONE-LINE & PANEL SCHEDULE
G-1	GROUNDING PLANS AND NOTES
G-2	GROUNDING DETAILS
G-3	GROUNDING DETAILS
RF-1	RF CABLE COLOR CODES
GN-1	LEGEND AND ABBREVIATIONS
GN-2	GENERAL NOTES
GN-3	GENERAL NOTES
GN-4	GENERAL NOTES
S-1	FOUNDATION DETAILS

SCOPE OF WORK

THIS IS NOT AN ALL INCLUSIVE LIST. CONTRACTOR SHALL UTILIZE SPECIFIED EQUIPMENT PART OR ENGINEER APPROVED EQUIVALENT. CONTRACTOR SHALL VERIFY ALL NEEDED EQUIPMENT TO PROVIDE A FUNCTIONAL SITE. THE PROJECT GENERALLY CONSISTS OF THE FOLLOWING:

TOWER SCOPE OF WORK:
- INSTALL (3) PROPOSED PANEL ANTENNAS (1 PER SECTOR)
- INSTALL (3) PROPOSED ANTENNA T-ARM MOUNTS (1 PER SECTOR) (COMMSCOPE MC-K6MHDX-9-96)
- INSTALL PROPOSED JUMPERS
- INSTALL (6) PROPOSED RRHs (2 PER SECTOR)
- INSTALL (1) PROPOSED OVER VOLTAGE PROTECTION DEVICE (OVP)
- INSTALL (1) PROPOSED HYBRID CABLE

GROUND SCOPE OF WORK:
- EXISTING ABANDONED CONCRETE SLAB TO BE REMOVED
- INSTALL (1) PROPOSED PPC CABINET
- INSTALL (1) PROPOSED EQUIPMENT CABINET
- INSTALL (1) PROPOSED POWER CONDUIT
- INSTALL (1) PROPOSED TELCO CONDUIT
- INSTALL (1) PROPOSED TELCO-FIBER BOX
- INSTALL (1) PROPOSED GPS UNIT
- INSTALL (1) PROPOSED FIBER NID (IF REQUIRED)
- INSTALL (1) PROPOSED METER SOCKET
- INSTALL (1) PROPOSED FUSIBLE SAFETY SWITCH (IF REQUIRED)
- INSTALL (1) PROPOSED CONCRETE SLAB WITH FOOTERS

SITE PHOTO



UNDERGROUND SERVICE ALERT
UTILITY NOTIFICATION CENTER OF CALIFORNIA
(800) 422-4133
WWW.CALIFORNIA811.ORG

CALL 2-14 WORKING DAYS UTILITY NOTIFICATION PRIOR TO CONSTRUCTION

811

GENERAL NOTES

THE FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. A TECHNICIAN WILL VISIT THE SITE AS REQUIRED FOR ROUTINE MAINTENANCE. THE PROJECT WILL NOT RESULT IN ANY SIGNIFICANT DISTURBANCE OR EFFECT ON DRAINAGE. NO SANITARY SEWER SERVICE, POTABLE WATER, OR TRASH DISPOSAL IS REQUIRED AND NO COMMERCIAL SIGNAGE IS PROPOSED.

11"x17" PLOT WILL BE HALF SCALE UNLESS OTHERWISE NOTED

CONTRACTOR SHALL VERIFY ALL PLANS, EXISTING DIMENSIONS, AND CONDITIONS ON THE JOB SITE, AND SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK.

SITE INFORMATION

PROPERTY OWNER:	CITY OF REDLANDS MUNICIPAL UTILITIES DEPARTMENT
ADDRESS:	TBD
TOWER TYPE:	MONOPINE
TOWER CO SITE ID:	856905
TOWER APP NUMBER:	562393
COUNTY:	SAN BERNARDINO
LATITUDE (NAD 83):	34° 03' 33.59" N 34.059331 N
LONGITUDE (NAD 83):	117° 08' 46.07" W 117.146131 W
ZONING JURISDICTION:	CITY OF REDLANDS
ZONING DISTRICT:	NOT REQUIRED
PARCEL NUMBER:	0170-302-17-0000
OCCUPANCY GROUP:	U
CONSTRUCTION TYPE:	II-B
POWER COMPANY:	SCE
TELEPHONE COMPANY:	TBD

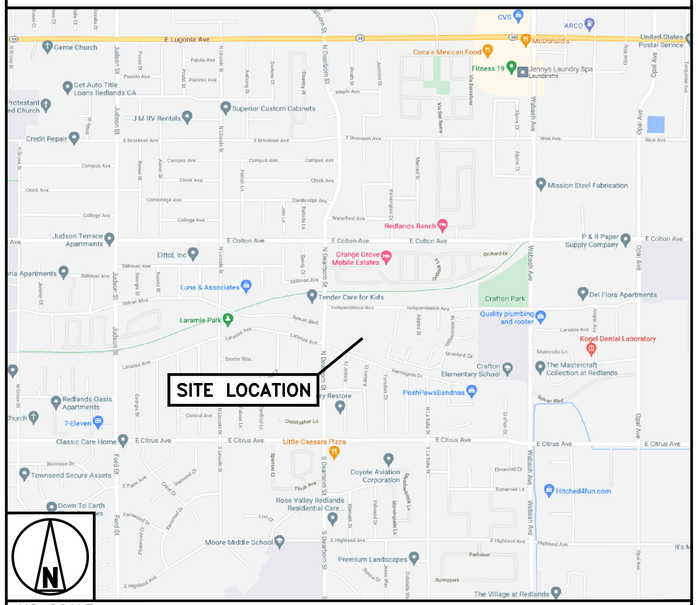
PROJECT DIRECTORY

APPLICANT:	DISH WIRELESS L.L.C. 5701 SOUTH SANTA FE DRIVE LITTLETON, CO 80120
TOWER OWNER:	CROWN CASTLE USA, INC. 2000 CORPORATE DRIVE CANONSBURG, PA 15317 877.486.9377
SITE DESIGNER:	JACOBS TELECOMMUNICATIONS, INC 5449 BELLS FERRY ROAD ACWORTH, GA 30102 470.785.4050
SITE ACQUISITION:	SARAH KIM SARAH.KIM@CROWNCASTLE.COM
CONSTRUCTION MANAGER:	CARRINGTON HILDEBRANT CARRINGTON.HILDEBRANT@DISH.COM
RF ENGINEER:	JONATHAN BADE JONATHAN.BADE@DISH.COM

DIRECTIONS

FROM DISH OFFICE AT 16812 ARMSTRONG AVE., SUITE 200 IRVINE, CA 92606, HEAD NORTHEAST TOWARD DEERE AVE. TURN RIGHT ONTO BARRANCA PKWY. USE THE LEFT 2 LANES TO TURN LEFT ONTO JAMBOREE RD. CONTINUE ONTO CA-261 N (TOLL ROAD). USE ANY LANE TO MERGE ONTO CA-241 N (TOLL ROAD), USE THE RIGHT 2 LANES TO TAKE EXIT 39A TO MERGE ONTO CA-91 E TOWARD RIVERSIDE. KEEP LEFT TO STAY ON CA-91 E. CONTINUE ONTO I-215 N. USE THE RIGHT 2 LANES TO TAKE EXIT 40A TO MERGE ONTO I-10 E TOWARD REDLANDS. TAKE EXIT 80 TOWARD N UNIVERSITY ST. TURN RIGHT ONTO N UNIVERSITY ST. TURN LEFT AT THE 1ST CROSS STREET ONTO E CITRUS AVE. TURN LEFT ONTO N DEARBORN ST. SITE IS ACCESSIBLE VIA ACCESS ROAD ON THE RIGHT.

VICINITY MAP



NO SCALE

dish wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

Jacobs.
Challenging today.
Reinventing tomorrow.

Jacobs Telecommunications, Inc.
5449 BELLS FERRY ROAD
ACWORTH, GA 30102

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

DRAWN BY:	CHECKED BY:	APPROVED BY:
CRO	SEL	KRK

RFDS REV #: TBD

PRELIMINARY DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	08/23/2021	ISSUED FOR REVIEW
B	11/08/2021	ISSUED FOR REVIEW

A&E PROJECT NUMBER

EUCC0309

DISH WIRELESS L.L.C.
PROJECT INFORMATION

LSSNA03071A
444 NORTH DEARBORN
REDLANDS, CA 92374

SHEET TITLE

TITLE SHEET

SHEET NUMBER

T-1

(E) PEDESTAL

PROPERTY LINE N89°45'10"E 598.14'

A.P.N 0170-302-07

PROPERTY LINE N52°00'00"E 105.39'

PROPERTY LINE N63°29'00"E 105.10'

(E) DIRT AREA

(E) TREE TYP.

(E) MOBILE OFFICE

(E) UTILITY POLE

(E) DIRT AREA

(E) VERIZON POLE

(E) TREE TYP.

(E) DIRT AREA

A.P.N 0170-302-08

(E) STUMP

DEARBORN STREET N00°15'20"W 404.88'

PROPERTY LINE N00°15'20"W

DRIVEWAY

A.P.N 0170-302-18

10'-0"

(E) ROAD

ANTENNA PLAN

ENLARGED SITE PLAN

(E) TREE ±75'H

(E) TREE ±83'H

(E) TREE ±69'H

(E) POWER P.O.C.

(E) TRANSFORMER # P5523774

(E) CONCRETE PAD

SIDEWALK

80'-0"

PROPERTY LINE N68°05'02"W 470.71'

MILL CREEK N68.05'02"W 473.90'

(E) UTILITY CABINET

(E) CMU WALL ENCLOSURE

(E) TREE ±36'H

HERRINGTON DRIVE N68.05'02"W 473.90'

A.P.N 0170-302-16

(E) CHAINLINK FENCE

335'-0" DIST. TO (E) RESIDENTIAL AREA

(E) CONCRETE RESERVOIR

±320'-0"

(E) CONCRETE RESERVOIR

50'-0"

20'-0"

(E) LEASE AREA

±200'-0" DIST. TO (E) RESIDENTIAL AREA

PROPERTY LINE N11°11'38"E 180.02'

(E) RESIDENTIAL AREA

PROPERTY LINE N11°11'38"E 336.54'

A.P.N 0170-50

MAGNETIC NORTH

TRUE NORTH

14°

FULL SCALE 1/32"=1'-0"

32 16 0 32 64 FT

HALF SCALE 1/64"=1'-0"

BECHTEL COMMUNICATIONS, INC.
6131 ORANGETHORPE AVENUE, 5TH FL.
BUENA PARK, CA 90620

NO.	DATE	REVISIONS	BY	CHK	APP'D
0	12/16/11	ISSUED FOR CONSTRUCTION	SK	AB	GDN

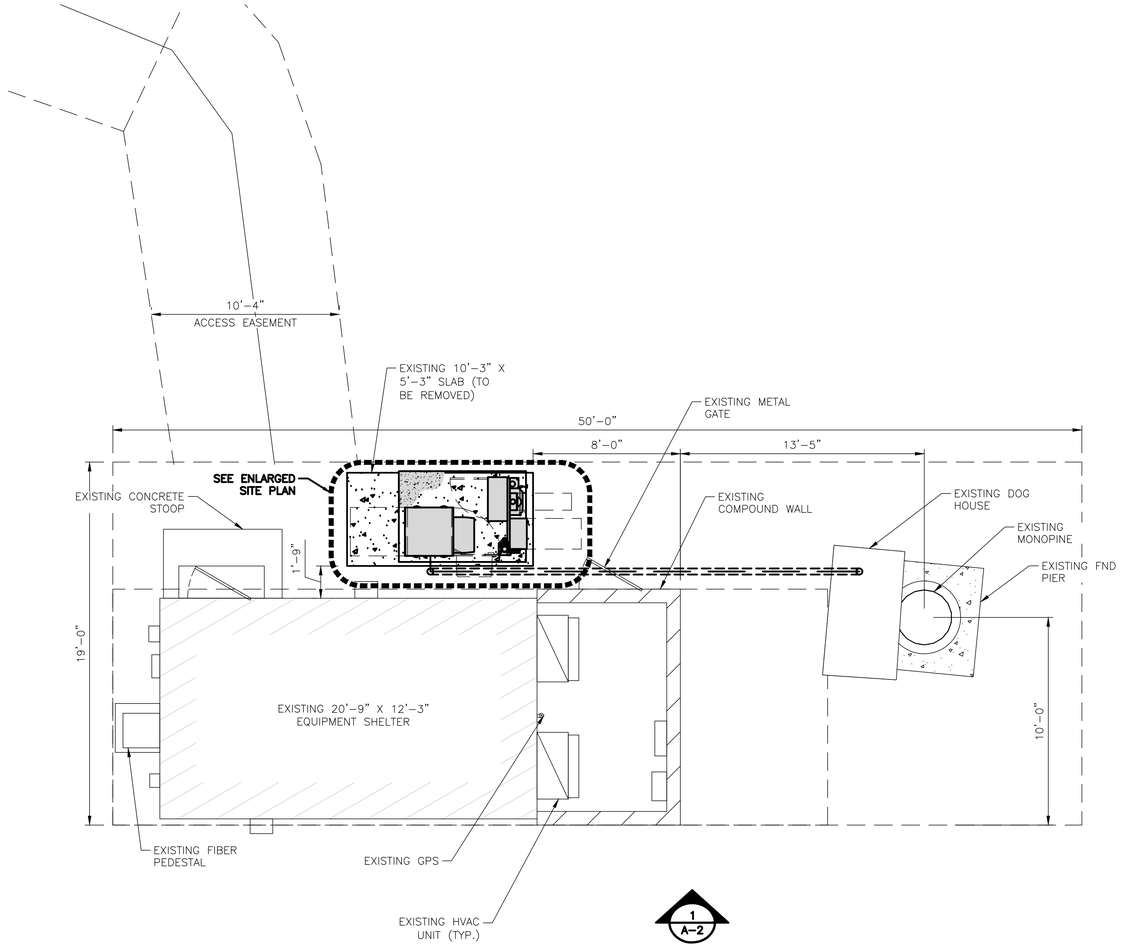
SCALE: AS SHOWN | DESIGNED: JAI | DRAWN: JAI

SHEET NUMBER

LS-1

NOTES

1. CONTRACTOR SHALL FIELD VERIFY ALL PROPOSED UNDERGROUND UTILITY CONDUIT ROUTE.
2. ANTENNAS AND MOUNTS OMITTED FOR CLARITY.
3. DUE TO UTILITY EASEMENT RIGHTS SPECIFIED IN THE GROUND LEASE, CUSTOMER MAY INSTALL EQUIPMENT WITHIN SPECIFIED UTILITY EASEMENT AREA. "PWR" AND "FBR" PATH DEPICTED ON A-1 AND E-1 REPRESENT PLANNED ROUTING BASED ON BEST AVAILABLE INFORMATION INCLUDING BUT NOT LIMITED TO A SURVEY, EXHIBITS, METES AND BOUNDS OF THE UTILITY EASEMENT, FIELD VERIFICATION, PRIOR PROJECT DOCUMENTATION AND OTHER REAL PROPERTY RIGHTS DOCUMENTS. WHEN INSTALLING THE UTILITIES PLEASE LOCATE AND FOLLOW EXISTING PATH. IF EXISTING PATH IS MATERIALLY INCONSISTENT WITH THE "PWR" AND "FBR" PATH DEPICTED ON A-1 AND E-1 AND SAID VARIANCE IS NOT NOTED ON CDS, PLEASE NOTIFY CROWN CASTLE REAL ESTATE AS FURTHER COORDINATION MAY BE NEEDED.



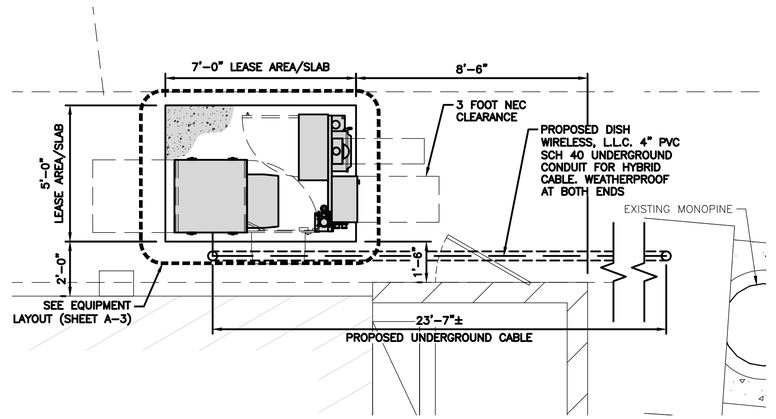
OVERALL SITE PLAN

4' 2' 0 4' 8'
1/4"=1'-0"

1

NOTES

1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. CONTRACTOR SHALL MAINTAIN A 10'-0" MINIMUM SEPARATION BETWEEN THE PROPOSED GPS UNIT, TRANSMITTING ANTENNAS AND EXISTING GPS UNITS.
3. ANTENNAS AND MOUNTS OMITTED FOR CLARITY.



ENLARGED SITE PLAN

12" 6" 0 1' 2' 3' 4' 5' 6' 7'
3/8"=1'-0"

2



ESA

NO SCALE

3

dish wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

Jacobs.
Challenging today.
Reinventing tomorrow.

Jacobs Telecommunications, Inc.
5449 BELLS FERRY ROAD
ACWORTH, GA 30102

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DRAWN BY:	CHECKED BY:	APPROVED BY:
CRO	SEL	KRK

RFDS REV #: TBD

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DISH WIRELESS L.L.C.
PROJECT INFORMATION

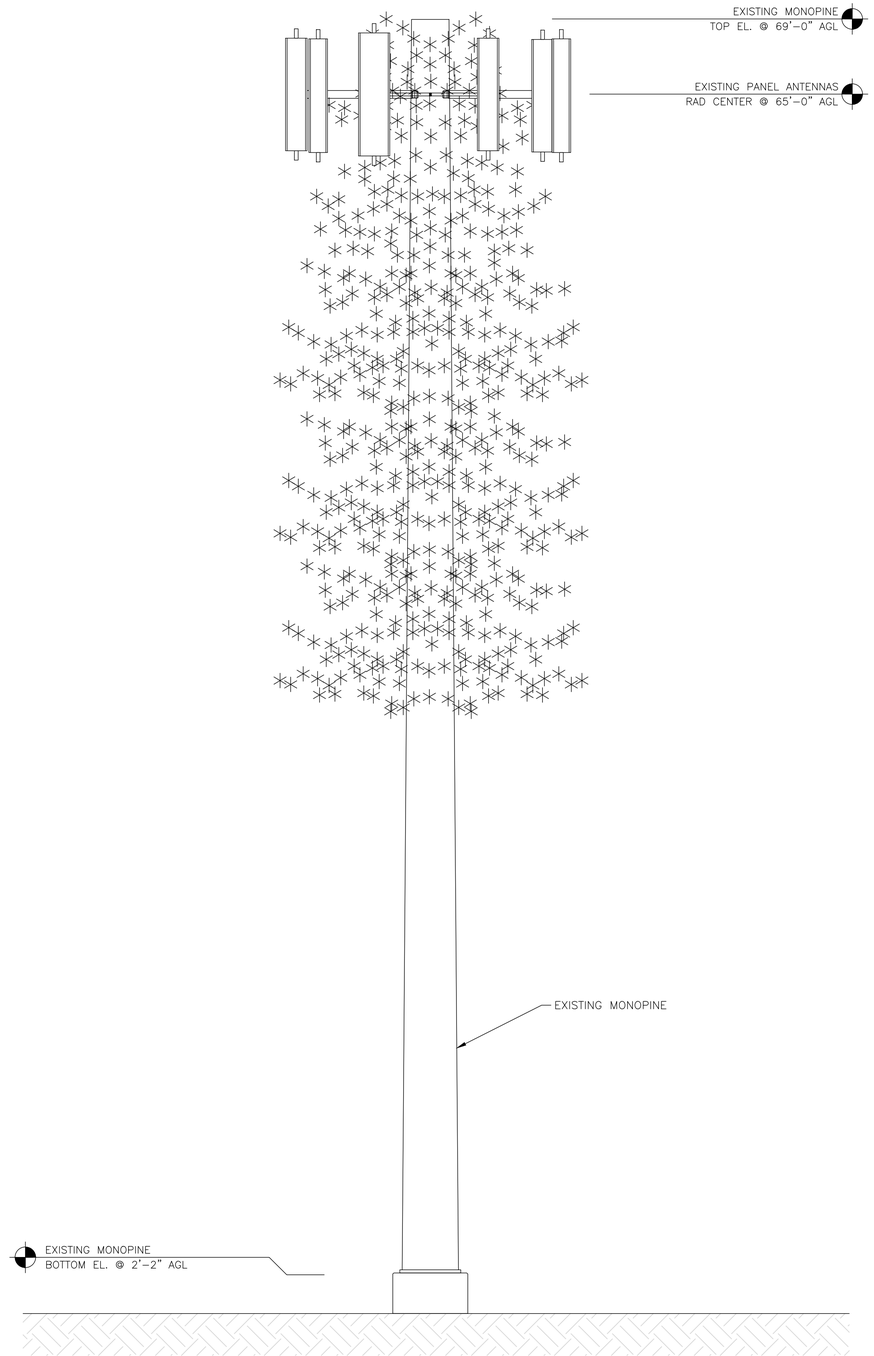
LSSNA03071A
444 NORTH DEARBORN
REDLANDS, CA 92374

SHEET TITLE

OVERALL AND ENLARGED SITE PLAN

SHEET NUMBER

A-1



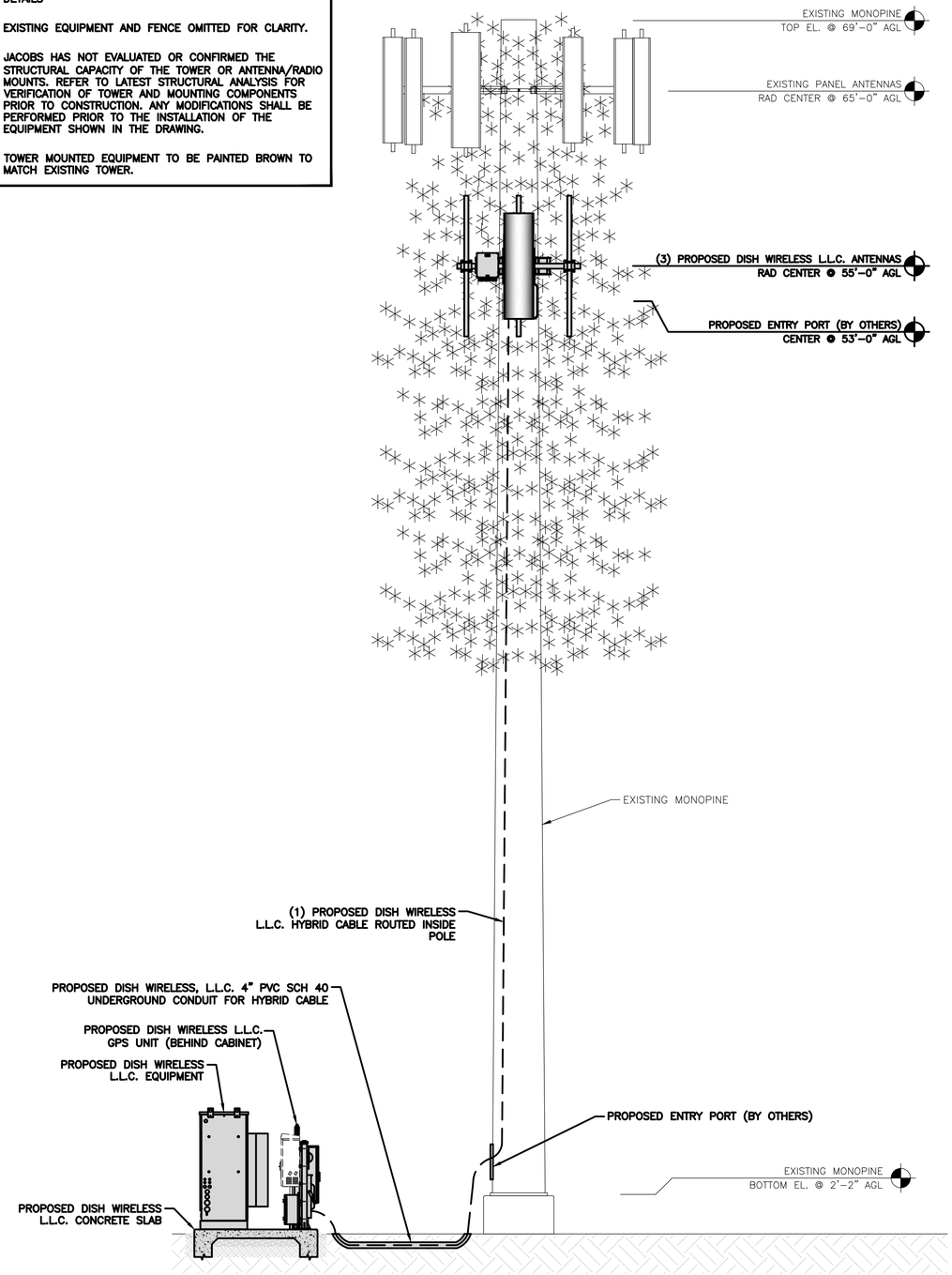
EXISTING EAST ELEVATION

4' 2' 0 4' 8'
1/4"=1'-0"

1

NOTES

1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. FOR ANTENNA SPECIFICATIONS REFER TO ANTENNA SCHEDULE AND FINAL CONSTRUCTION RFDS FOR ALL RF DETAILS
3. EXISTING EQUIPMENT AND FENCE OMITTED FOR CLARITY.
4. JACOBS HAS NOT EVALUATED OR CONFIRMED THE STRUCTURAL CAPACITY OF THE TOWER OR ANTENNA/RADIO MOUNTS. REFER TO LATEST STRUCTURAL ANALYSIS FOR VERIFICATION OF TOWER AND MOUNTING COMPONENTS PRIOR TO CONSTRUCTION. ANY MODIFICATIONS SHALL BE PERFORMED PRIOR TO THE INSTALLATION OF THE EQUIPMENT SHOWN IN THE DRAWING.
5. TOWER MOUNTED EQUIPMENT TO BE PAINTED BROWN TO MATCH EXISTING TOWER.



PROPOSED EAST ELEVATION

4' 2' 0 4' 8'
1/4"=1'-0"

2

dish wireless.
5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

Jacobs
Challenging today.
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DRAWN BY:	CHECKED BY:	APPROVED BY:
CRO	SEL	KRK

RFDS REV #: TBD

PRELIMINARY DOCUMENTS

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DISH WIRELESS L.L.C.
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LSSNA03071A
444 NORTH DEARBORN
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SHEET TITLE

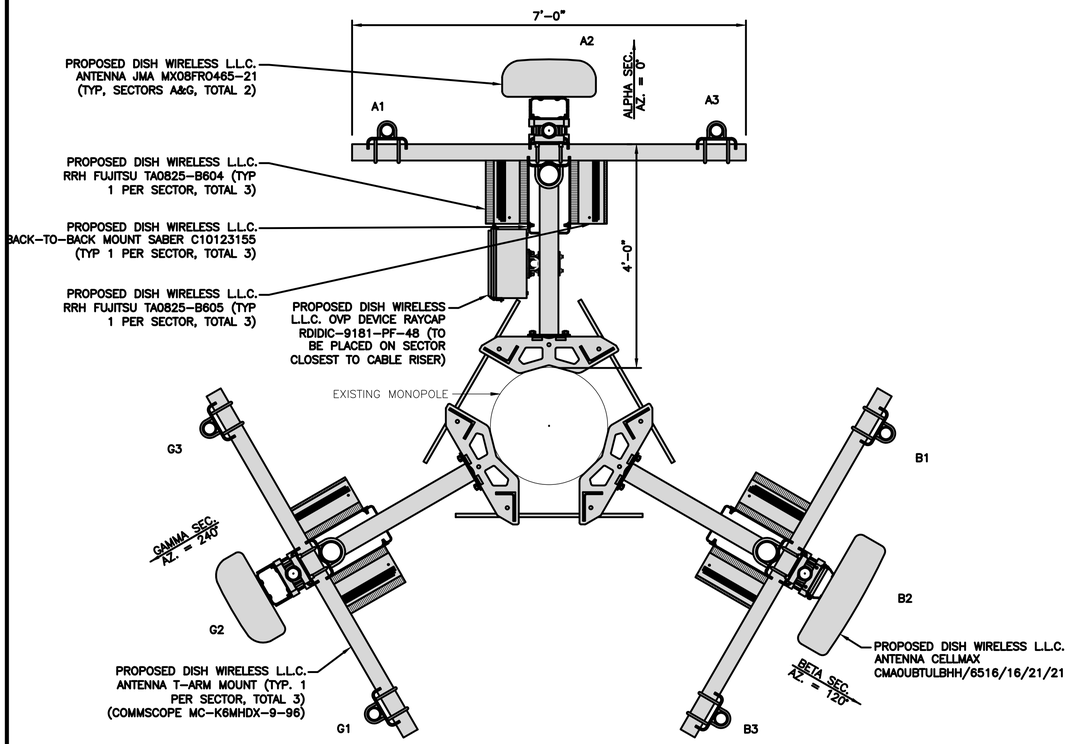
ELEVATION, ANTENNA LAYOUT AND SCHEDULE

SHEET NUMBER

A-2.1

NOTES

1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. FOR ANTENNA SPECIFICATIONS REFER TO ANTENNA SCHEDULE AND FINAL CONSTRUCTION RFDS FOR ALL RF DETAILS
3. JACOBS HAS NOT EVALUATED OR CONFIRMED THE STRUCTURAL CAPACITY OF THE TOWER OR ANTENNA/RADIO MOUNTS. REFER TO LATEST STRUCTURAL ANALYSIS FOR VERIFICATION OF TOWER AND MOUNTING COMPONENTS PRIOR TO CONSTRUCTION. ANY MODIFICATIONS SHALL BE PERFORMED PRIOR TO THE INSTALLATION OF THE EQUIPMENT SHOWN IN THE DRAWING.
4. TOWER MOUNTED EQUIPMENT TO BE PAINTED BROWN TO MATCH EXISTING TOWER.



ANTENNA LAYOUT

12" 6" 0 1' 2' 3'
3/4"=1'-0"

1

SECTOR POS.	ANTENNA				RRH		OVP	TRANSMISSION CABLE
	EXISTING OR PROPOSED	MANUFACTURER – MODEL NUMBER	AZIMUTH	RAD CENTER	MANUFACTURER – MODEL NUMBER	TECH	MANUFACTURER MODEL	FEED LINE TYPE AND LENGTH
A1	--	--	--	--	--	--	RAYCAP RDIDC-9181-PF-48	(1) HIGH-CAPACITY HYBRID CABLE (80' LONG)
A2	PROPOSED	JMA WIRELESS – MX08FRO665-21	0°	55'-0"	FUJITSU – TA08025-B604 FUJITSU – TA08025-B605	5G		
A3	--	--	--	--	--	--		
B1	--	--	--	--	--	--	SHARED W/ALPHA	SHARED W/ALPHA
B2	PROPOSED	CELLMAX – 12044x CMA-UBTULBULBHH/6516/16/21/21	120°	55'-0"	FUJITSU – TA08025-B604 FUJITSU – TA08025-B605	5G		
B3	--	--	--	--	--	--		
G1	--	--	--	--	--	--	SHARED W/ALPHA	SHARED W/ALPHA
G2	PROPOSED	JMA WIRELESS – MX08FRO665-21	240°	55'-0"	FUJITSU – TA08025-B604 FUJITSU – TA08025-B605	5G		
G3	--	--	--	--	--	--		

NOTES

1. CONTRACTOR TO REFER TO FINAL CONSTRUCTION RFDS FOR ALL RF DETAILS.
2. ANTENNA AND RRH MODELS MAY CHANGE DUE TO EQUIPMENT AVAILABILITY. ALL EQUIPMENT CHANGES MUST BE APPROVED AND REMAIN IN COMPLIANCE WITH THE PROPOSED DESIGN AND STRUCTURAL ANALYSES.

*SEE LATEST DISH RFDS FOR AZIMUTH INFORMATION AT TIME OF BUILD

ANTENNA SCHEDULE

NO SCALE

2

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CRO	SEL	KRK

RFDS REV #: TBD

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A&E PROJECT NUMBER

EUCC0309

DISH WIRELESS L.L.C.
PROJECT INFORMATION

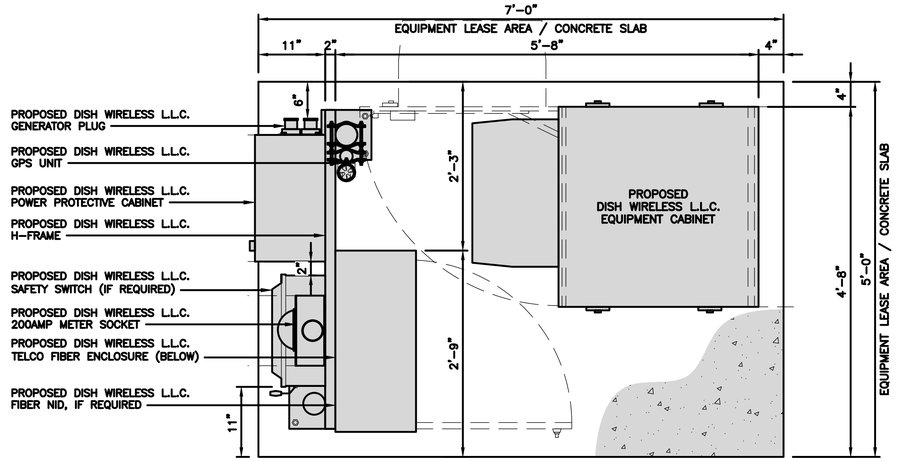
LSSNA03071A
444 NORTH DEARBORN
REDLANDS, CA 92374

SHEET TITLE

ELEVATION, ANTENNA LAYOUT AND SCHEDULE

SHEET NUMBER

A-2.2



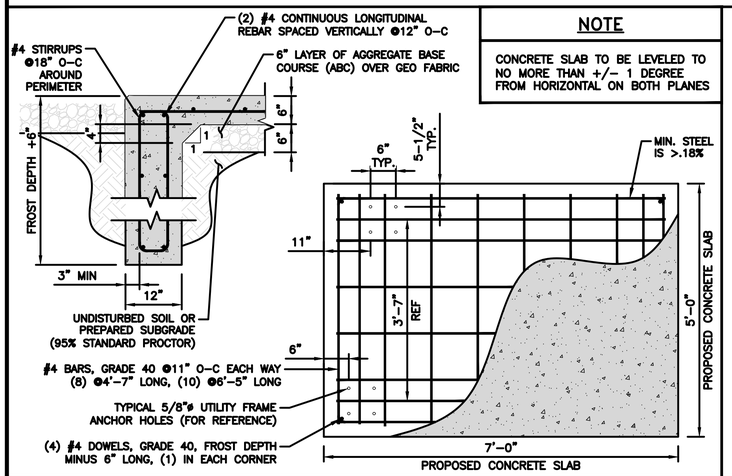
CONCRETE SLAB EQUIPMENT PLAN

12" 9" 6" 3" 0 1' 2'
1"=1'-0"

1

NOTE

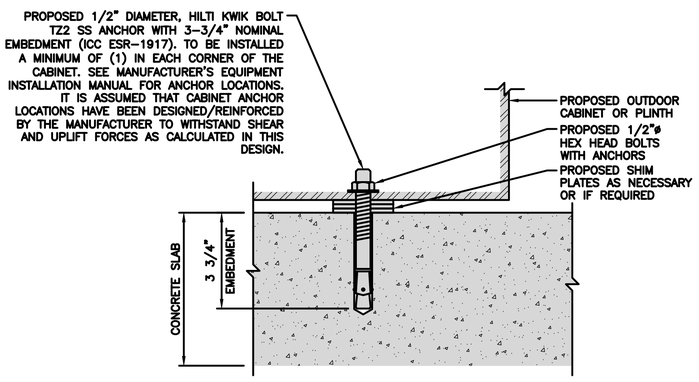
CONCRETE SLAB TO BE LEVELED TO NO MORE THAN +/- 1 DEGREE FROM HORIZONTAL ON BOTH PLANES



CONCRETE SLAB WITH FOOTERS DETAIL

NO SCALE

2

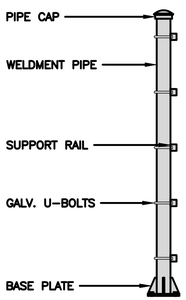


TYPICAL OUTDOOR EQUIPMENT TO CONCRETE SLAB ANCHORAGE

NO SCALE

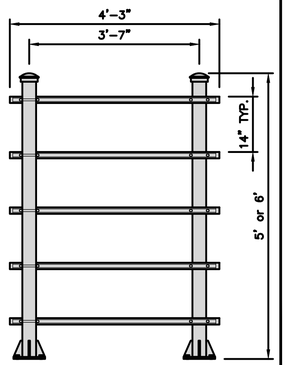
3

COMMSCOPE MTC4045HFLD H-FRAME	
UNISTRUT/SUPPORT RAILS QTY	5
WEIGHT	59.74 lbs



SIDE

NOTE:
OR DISH WIRELESS L.L.C. APPROVED EQUIVALENT



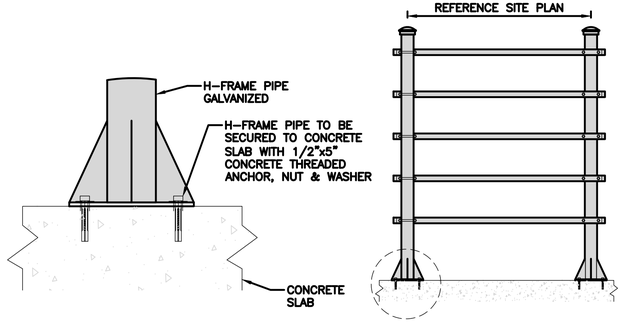
FRONT

H-FRAME DETAIL

NO SCALE

4

H-FRAME	
UNISTRUT/SUPPORT RAIL	5



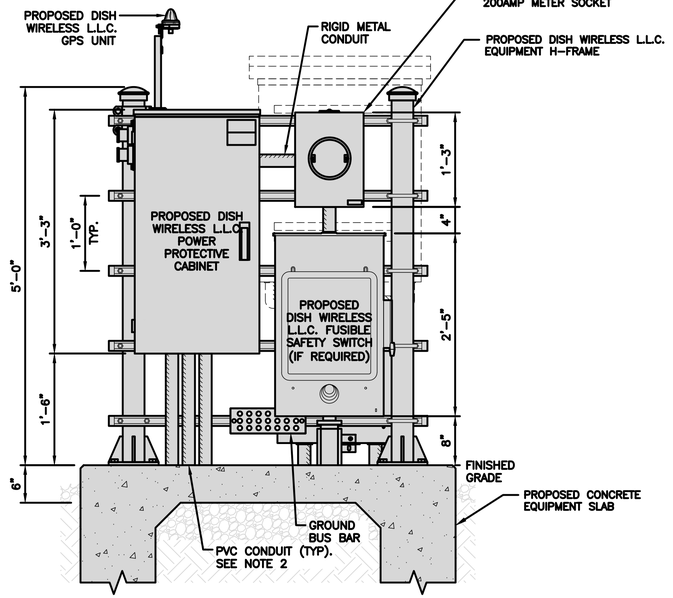
H-FRAME CONCRETE SLAB INSTALLATION DETAIL

NO SCALE

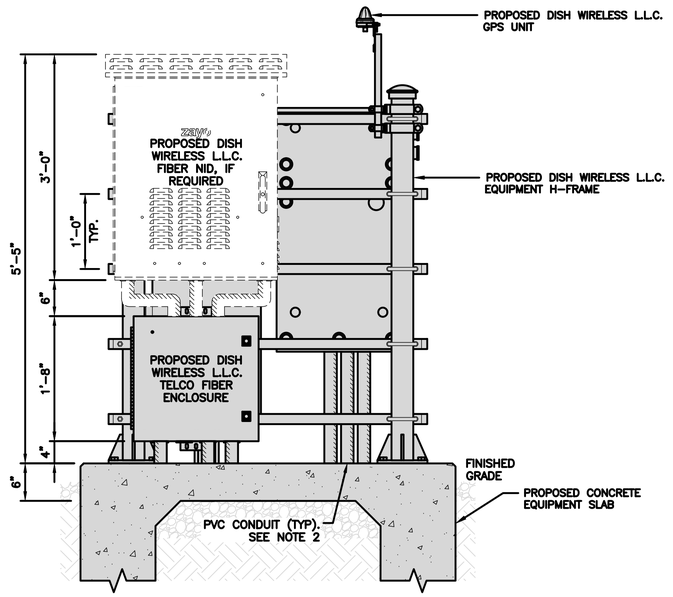
5

NOTES

1. EQUIPMENT CABINET OMITTED FOR CLARITY
2. DETAIL IS FOR H-FRAME EQUIPMENT ELEVATION PURPOSES. EXACT CONDUIT QUANTITIES MAY VARY. REFER TO LINE DIAGRAMS FOR EXACT QUANTITY.



FRONT ELEVATION



BACK ELEVATION

H-FRAME EQUIPMENT ELEVATION

12" 9" 6" 3" 0 1' 2'
1"=1'-0"

6

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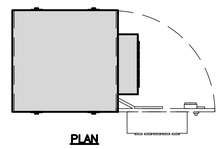
SHEET TITLE

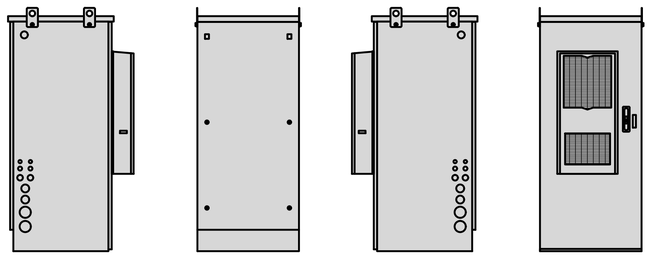
EQUIPMENT SLAB AND H-FRAME DETAILS

SHEET NUMBER

A-3

CHARLES INDUSTRY HVAC CUBE–PM63915IN4	
DIMENSIONS (HxWxD):	74"x32"x32"
POWER PLANT:	–48VDC ABB/600W
TOTAL WEIGHT (EMPTY)	383 LBS

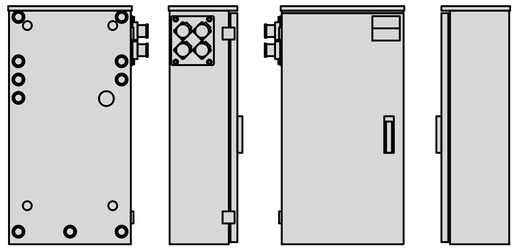

PLAN


SIDE BACK SIDE FRONT

CABINET DETAIL | NO SCALE | 1

RAYCAP PPC RDIAC–2465–P–240–MTS	
ENCLOSURE DIMENSIONS (HxWxD):	39"x22.855"x12.593
WEIGHT:	80 lbs
OPERATING AC VOLTAGE	240/120 1 PHASE 3W+G

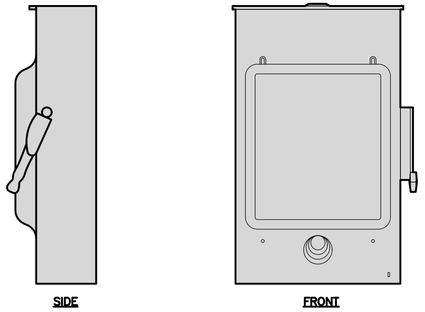

TOP


BACK SIDE FRONT SIDE

POWER PROTECTION CABINET (PPC) DETAIL | NO SCALE | 2

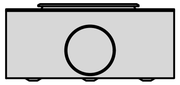
SQUARE D FUSIBLE SAFETY SWITCH D224NRB	
ENCLOSURE DIM (HxWxD)	29.25"x19.00"x8.50"
ENCLOSURE TYPE	NEMA 3R RAINPROOF
UL LISTED	FILE E–2875

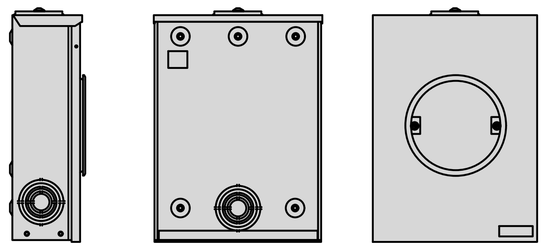

TOP


SIDE FRONT

FUSIBLE SAFETY SWITCH DETAIL | NO SCALE | 3

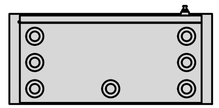
EATON METER SOCKET UNRRS213BEUSE	
METER SOCKET TYPE	RING
ENCLOSURE DIM (HxWxD)	16"x12"x6"
MAIN AMPERE RATING	200A
WEIGHT	18 LBS

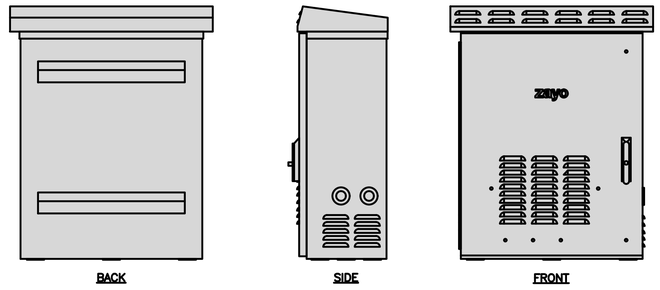

PLAN


SIDE BACK FRONT

METER SOCKET DETAIL | NO SCALE | 4

ZAYO 5RU (LEFT SWING DOOR) FIBER NID ENCLOSURE	
DIMENSIONS (HxWxD)	36.1"x29"x12.9"
WEIGHT	85 lbs

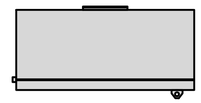

BOTTOM

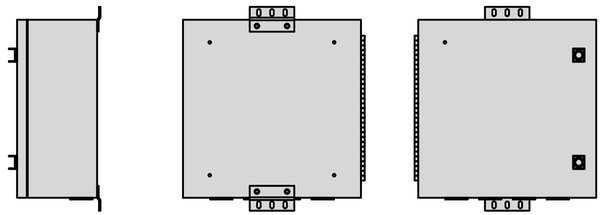


BACK SIDE FRONT

FIBER NID ENCLOSURE DETAIL | NO SCALE | 5

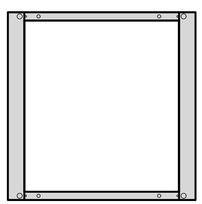
CHARLES CFIT–PF2020DSH1 FIBER TELCO ENCLOSURE	
ENCLOSURE DIMS (HxWxD)	20"x20"x9"
ENCLOSURE WEIGHT	20 lbs
MOUNTING	WALL
COMPLIANCE	TYPE 4

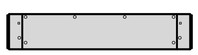

FRONT


SIDE BACK FRONT

FIBER TELCO ENCLOSURE DETAIL | NO SCALE | 6

CHARLES INDUSTRY LT–97–002422 PLINTH KIT	
DIMENSIONS (HxWxD):	6"x 32"x 32"
NOTE: GASKET AND MOUNTING HARDWARE INCLUDED	


PLAN


FRONT/BACK


SIDE

PLINTH DETAIL | NO SCALE | 7

NOT USED | NO SCALE | 8

NOT USED | NO SCALE | 9

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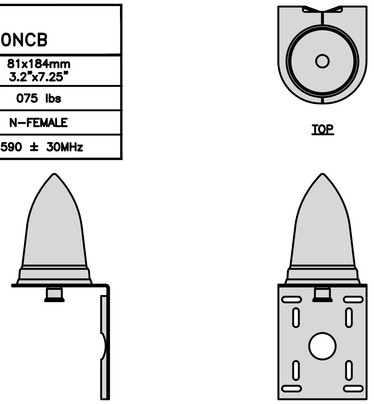
SHEET TITLE

EQUIPMENT DETAILS

SHEET NUMBER

A-4

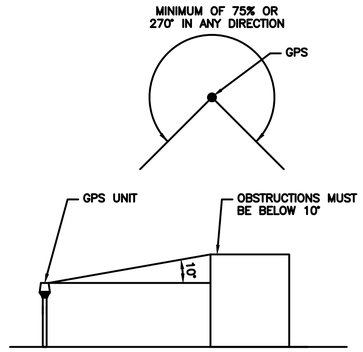
PCTEL GPSGL-TMG-SPI-40NCB	
DIMENSIONS (DIAxH) MM/INCH	81x184mm 3.2"x7.25"
WEIGHT W/ACCESSORIES	075 lbs
CONNECTOR	N-FEMALE
FREQUENCY RANGE	1590 ± 30MHz



GPS DETAIL

NO SCALE

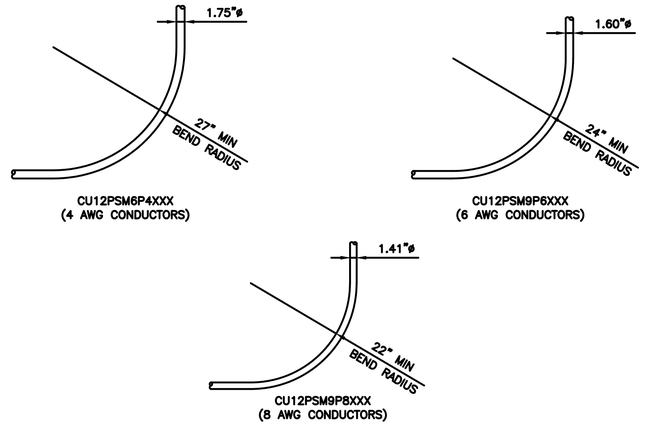
1



GPS MINIMUM SKY VIEW REQUIREMENTS

NO SCALE

2



CABLES UNLIMITED HYBRID CABLE MINIMUM BEND RADIUSES

NO SCALE

3

NOT USED

NO SCALE

4

NOT USED

NO SCALE

5

NOT USED

NO SCALE

6

NOT USED

NO SCALE

7

NOT USED

NO SCALE

8

NOT USED

NO SCALE

9

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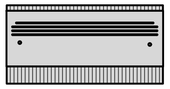
SHEET TITLE

EQUIPMENT DETAILS

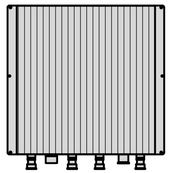
SHEET NUMBER

A-5

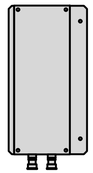
FUJITSU DUAL BAND TA08025-B604	
DIMENSIONS (HxWxD)	14.9"x15.7"x7.8"
WEIGHT	63.9 lbs
CONNECTOR TYPE	4.3-10 RF CONNECTOR
POWER SUPPLY	DC -58~-36V



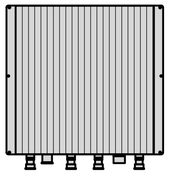
PLAN



BACK



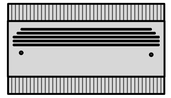
SIDE



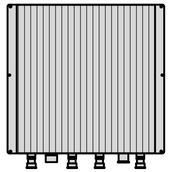
FRONT

REMOTE RADIO HEAD DETAIL (RRH) | NO SCALE | 1

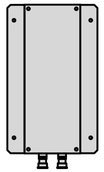
FUJITSU TRIPLE BAND TA08025-B605	
DIMENSIONS (HxWxD)	14.9"x15.7"x9"
WEIGHT	74.95 lbs
CONNECTOR TYPE	4.3-10 RF CONNECTOR
POWER SUPPLY	DC -58~-36V



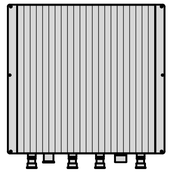
PLAN



BACK



SIDE

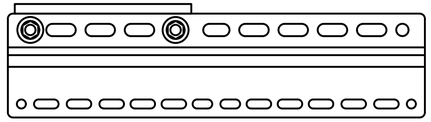


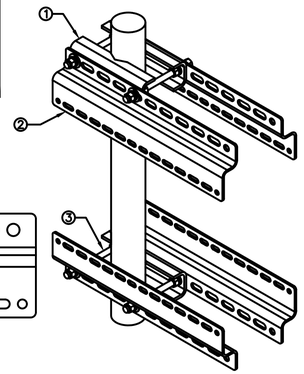
FRONT

REMOTE RADIO HEAD DETAIL (RRH) | NO SCALE | 2

SABRE DOUBLE Z-BRACKET C10123155	
DIMENSIONS (HxWxD) (1 BRACKET)	5"x20"x1-13/16"
WEIGHT (FULL ASSEMBLY)	35.79 lbs
PACKAGE QUANTITY	4

#	DESCRIPTION
1	PLATE, CHANNEL BRACKET
2	RRH Z BRACKET, 3/16"
3	THREADED ROD ASSEMBLY 1/2"x12"





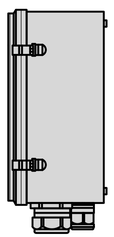
NOTE:
OR DISH WIRELESS L.L.C.
APPROVED EQUIVALENT

RRH MOUNT DETAIL | NO SCALE | 3

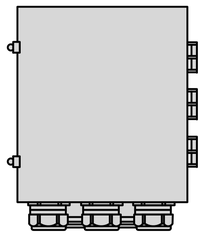
RAYCAP RDIDC-9181-PF-48 DC SURGE PROTECTION (OVP)	
DIMENSIONS (HxWxD)	18.98"x14.39"x8.15"
WEIGHT	21.82 LBS



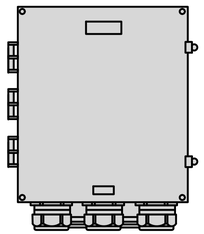
PLAN



SIDE



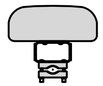
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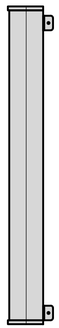
FRONT

SURGE SUPPRESSION DETAIL (OVP) | NO SCALE | 4

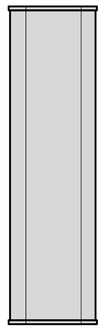
JMA MX08FRO665-21	
DIMENSIONS (HxWxD)	72"x20.0"x8.0"
RF PORTS, CONNECTOR TYPE	8 x 4.3-10 FEMALE
WEIGHT	64.5 lbs
WEIGHT WITH BRACKETS	82.5 lbs



PLAN



SIDE



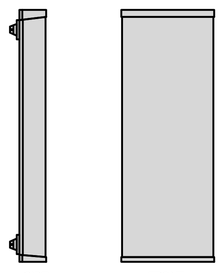
FRONT

ANTENNA DETAIL | NO SCALE | 5

CELLMAX 12044x CMA-UBTULBULBHH/6516/16/21/21	
DIMENSIONS (HxWxD)(MM/IN)	1840x680x196 72.4"x26.7"x7.7"
CONNECTORS	8 x 4.3-10 FEMALE
WEIGHT (kg/lb)	48/105
WEIGHT WITH BRACKETS (kg/lb)	53/116



PLAN



SIDE

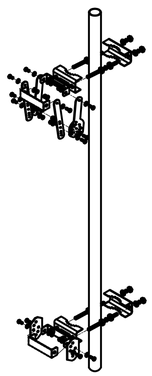
FRONT

ANTENNA DETAIL | NO SCALE | 6

JMA ANTENNA MOUNT BRACKET #91900318	
TOTAL WEIGHT (WITH BRACKETS)	18 lbs (8.18 Kg)
POLE DIAMETER RANGE	2.5" TO 4.5"

NOTE:
KIT #91900318: TOP AND BOTTOM BRACKETS FOR 4-,6-, AND 8-FOOT ANTENNAS

ANTENNA BRACKET NOT PART OF KIT

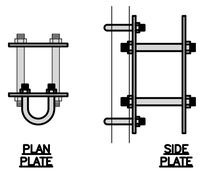


NOTE:
OR DISH WIRELESS L.L.C.
APPROVED EQUIVALENT

ANTENNA BRACKET DETAIL | NO SCALE | 7

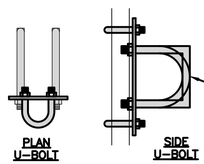
COMMSCOPE XP-2040 CROSSOVER PLATE	
DIMENSIONS (HxW)	10"x12"
WEIGHT	11 LBS

NOTE:
OR DISH WIRELESS L.L.C.
APPROVED EQUIVALENT



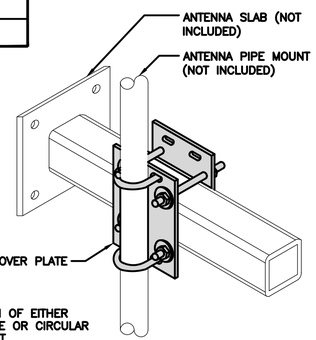
PLAN
PLATE

SIDE
PLATE



PLAN
U-BOLT

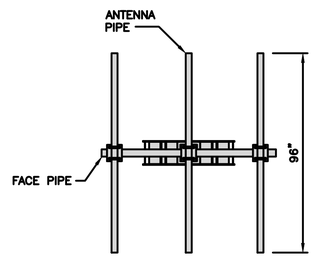
SIDE
U-BOLT

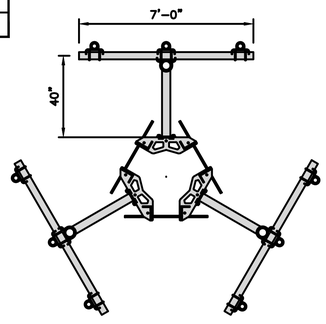


RRH/OVP MOUNT DETAIL | NO SCALE | 8

COMMSCOPE MC-K6MHDX-9-96	
FACE WIDTH	7'-0"
WEIGHT	1203.31 lbs
NOTE: 15" TO 50" O.D.	

NOTE:
OR DISH WIRELESS L.L.C.
APPROVED EQUIVALENT





T-ARM MOUNT DETAIL | NO SCALE | 9

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CRO	SEL	KRK

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REDLANDS, CA 92374

SHEET TITLE

EQUIPMENT DETAILS

SHEET NUMBER

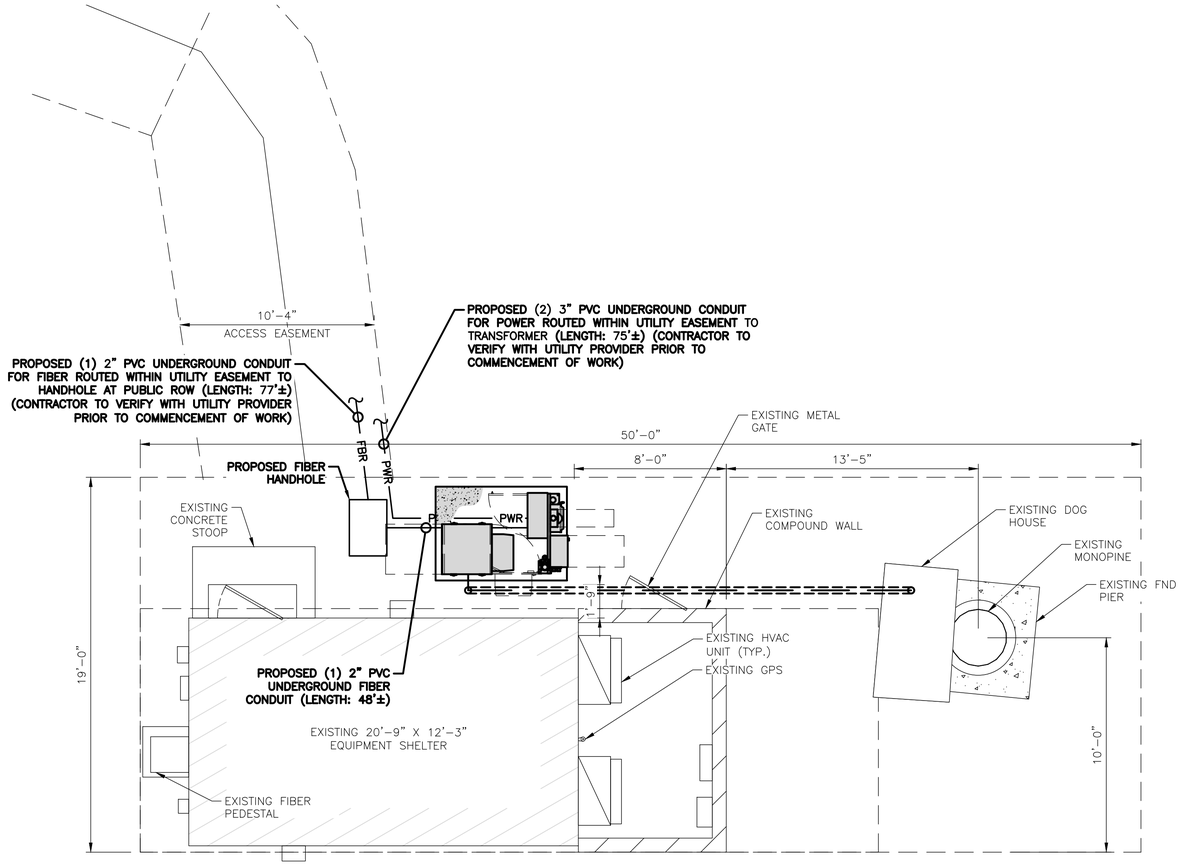
A-6

ROW NOTE

NO WORK WITHIN THIS PERMIT APPLICATION SHALL BE PERFORMED WITHIN THE PUBLIC ROW. UTILITY WORK WITHIN THE PUBLIC ROW SHALL BE THE RESPONSIBILITY OF THE UTILITY PROVIDER AND REQUIRES A SEPARATE PERMIT.

NOTES

1. CONTRACTOR SHALL FIELD VERIFY ALL PROPOSED UNDERGROUND UTILITY CONDUIT ROUTE.
2. ANTENNAS AND MOUNTS OMITTED FOR CLARITY.
3. DUE TO UTILITY EASEMENT RIGHTS SPECIFIED IN THE GROUND LEASE, CUSTOMER MAY INSTALL EQUIPMENT WITHIN SPECIFIED UTILITY EASEMENT AREA. "PWR" AND "FBR" PATH DEPICTED ON A–1 AND E–1 REPRESENT PLANNED ROUTING BASED ON BEST AVAILABLE INFORMATION INCLUDING BUT NOT LIMITED TO A SURVEY, EXHIBITS, METES AND BOUNDS OF THE UTILITY EASEMENT, FIELD VERIFICATION, PRIOR PROJECT DOCUMENTATION AND OTHER REAL PROPERTY RIGHTS DOCUMENTS. WHEN INSTALLING THE UTILITIES PLEASE LOCATE AND FOLLOW EXISTING PATH. IF EXISTING PATH IS MATERIALLY INCONSISTENT WITH THE "PWR" AND "FBR" PATH DEPICTED ON A–1 AND E–1 AND SAID VARIANCE IS NOT NOTED ON CDS, PLEASE NOTIFY CROWN CASTLE REAL ESTATE AS FURTHER COORDINATION MAY BE NEEDED.



UTILITY ROUTE PLAN

4' 2' 0 4' 8'
1/4"=1'–0"

1

DC POWER WIRING SHALL BE COLOR CODED AT EACH END FOR IDENTIFYING +24V AND –48V CONDUCTORS. RED MARKINGS SHALL IDENTIFY +24V AND BLUE MARKINGS SHALL IDENTIFY –48V.

1. CONTRACTOR SHALL INSPECT THE EXISTING CONDITIONS PRIOR TO SUBMITTING A BID. ANY QUESTIONS ARISING DURING THE BID PERIOD IN REGARDS TO THE CONTRACTOR'S FUNCTIONS, THE SCOPE OF WORK, OR ANY OTHER ISSUE RELATED TO THIS PROJECT SHALL BE BROUGHT UP DURING THE BID PERIOD WITH THE PROJECT MANAGER FOR CLARIFICATION, NOT AFTER THE CONTRACT HAS BEEN AWARDED.
2. ALL ELECTRICAL WORK SHALL BE DONE IN ACCORDANCE WITH CURRENT NATIONAL ELECTRICAL CODES AND ALL STATE AND LOCAL CODES, LAWS, AND ORDINANCES. PROVIDE ALL COMPONENTS AND WIRING SIZES AS REQUIRED TO MEET NEC STANDARDS.
3. LOCATION OF EQUIPMENT, CONDUIT AND DEVICES SHOWN ON THE DRAWINGS ARE APPROXIMATE AND SHALL BE COORDINATED WITH FIELD CONDITIONS PRIOR TO CONSTRUCTION.
4. CONDUIT ROUGH–IN SHALL BE COORDINATED WITH THE MECHANICAL EQUIPMENT TO AVOID LOCATION CONFLICTS. VERIFY WITH THE MECHANICAL EQUIPMENT CONTRACTOR AND COMPLY AS REQUIRED.
5. CONTRACTOR SHALL PROVIDE ALL BREAKERS, CONDUITS AND CIRCUITS AS REQUIRED FOR A COMPLETE SYSTEM.
6. CONTRACTOR SHALL PROVIDE PULL BOXES AND JUNCTION BOXES AS REQUIRED BY THE NEC ARTICLE 314. PROVIDE 1 PULL BOX EVERY 150' TO 200' MAX.
7. CONTRACTOR SHALL PROVIDE ALL STRAIN RELIEF AND CABLE SUPPORTS FOR ALL CABLE ASSEMBLIES. INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.
8. ALL DISCONNECTS AND CONTROLLING DEVICES SHALL BE PROVIDED WITH ENGRAVED PHENOLIC NAMEPLATES INDICATING EQUIPMENT CONTROLLED, BRANCH CIRCUITS INSTALLED ON, AND PANEL FIELD LOCATIONS FED FROM.
9. INSTALL AN EQUIPMENT GROUNDING CONDUCTOR IN ALL CONDUITS PER THE SPECIFICATIONS AND NEC 250. THE EQUIPMENT GROUNDING CONDUCTORS SHALL BE BONDED AT ALL JUNCTION BOXES, PULL BOXES, AND ALL DISCONNECT SWITCHES, AND EQUIPMENT CABINETS.
10. ALL NEW MATERIAL SHALL HAVE A U.L. LABEL.
11. PANEL SCHEDULE LOADING AND CIRCUIT ARRANGEMENTS REFLECT POST–CONSTRUCTION EQUIPMENT.
12. CONTRACTOR SHALL BE RESPONSIBLE FOR AS–BUILT PANEL SCHEDULE AND SITE DRAWINGS.
13. ALL TRENCHES IN COMPOUND TO BE HAND DUG.

ELECTRICAL NOTES

NO SCALE

2



ESA

NO SCALE

3

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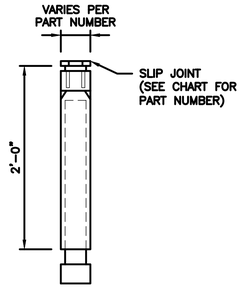
SHEET TITLE

ELECTRICAL/FIBER ROUTE PLAN AND NOTES

SHEET NUMBER

E-1

CARLON EXPANSION FITTINGS				
COUPLING END PART#	MALE TERMINAL ADAPTER END PART#	SIZE	STD CTN QTY.	TRAVEL LENGTH
E945D	E945DX	1/2"	20	4"
E945E	E945EX	3/4"	15	4"
E945F	E945FX	1"	10	4"
E945G	E945GX	1 1/4"	5	4"
E945H	E945HX	1 1/2"	5	4"
E945J	E945JX	2"	15	8"
E945K	E945KX	2 1/2"	10	8"
E945L	E945LX	3"	10	8"
E945M	E945MX	3 1/2"	5	8"
E945N	E945NX	4"	5	8"
E945P	E945PX	5"	1	8"
E945R	E945RX	6"	1	8"

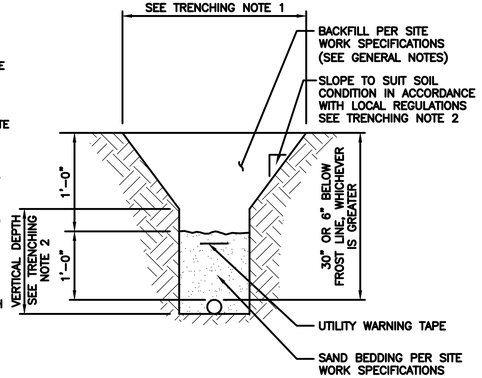


NOTE:
CONTRACTOR TO INSTALL EXPANSION FITTING SLIP JOINT AT METER CENTER CONDUIT TERMINATION, AS PER LOCAL UTILITY POLICY, ORDINANCE AND/OR SPECIFIED REQUIREMENT.

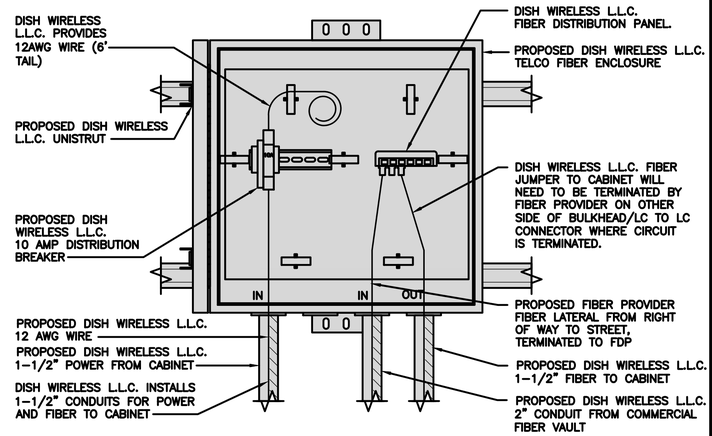
EXPANSION JOINT DETAIL | NO SCALE | 1

TRENCHING NOTES

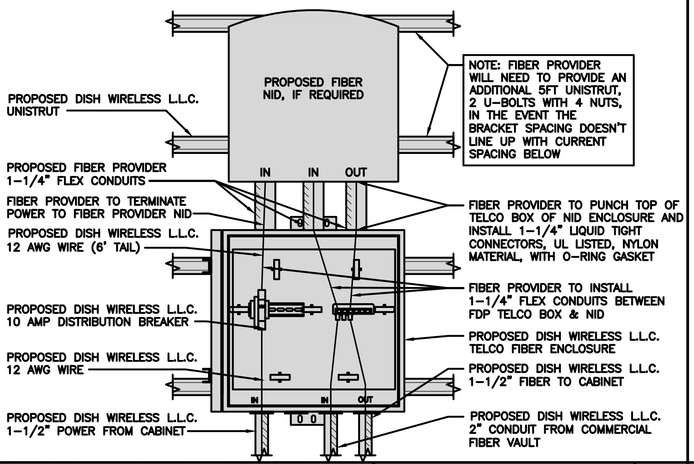
1. CONTRACTOR SHALL RESTORE THE TRENCH TO ITS ORIGINAL CONDITIONS BY EITHER SEEDING OR SODDING GRASS AREAS, OR REPLACING ASPHALT OR CONCRETE AREAS TO ITS ORIGINAL CROSS SECTION.
2. TRENCHING SAFETY; INCLUDING, BUT NOT LIMITED TO SOIL CLASSIFICATION, SLOPING, AND SHORING, SHALL BE GOVERNED BY THE CURRENT OSHA TRENCHING AND EXCAVATION SAFETY STANDARDS.
3. ALL CONDUITS SHALL BE INSTALLED IN COMPLIANCE WITH THE CURRENT NATIONAL ELECTRIC CODE (NEC) OR AS REQUIRED BY THE LOCAL JURISDICTION, WHICHEVER IS THE MOST STRINGENT.



TYPICAL UNDERGROUND TRENCH DETAIL | NO SCALE | 2



DARK TELCO BOX – INTERIOR WIRING LAYOUT | NO SCALE | 3



LIT TELCO BOX – INTERIOR WIRING LAYOUT (OPTIONAL) | NO SCALE | 4

NOT USED | NO SCALE | 5

NOT USED | NO SCALE | 6

NOT USED | NO SCALE | 7

NOT USED | NO SCALE | 8

NOT USED | NO SCALE | 9

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CRO	SEL	KRK

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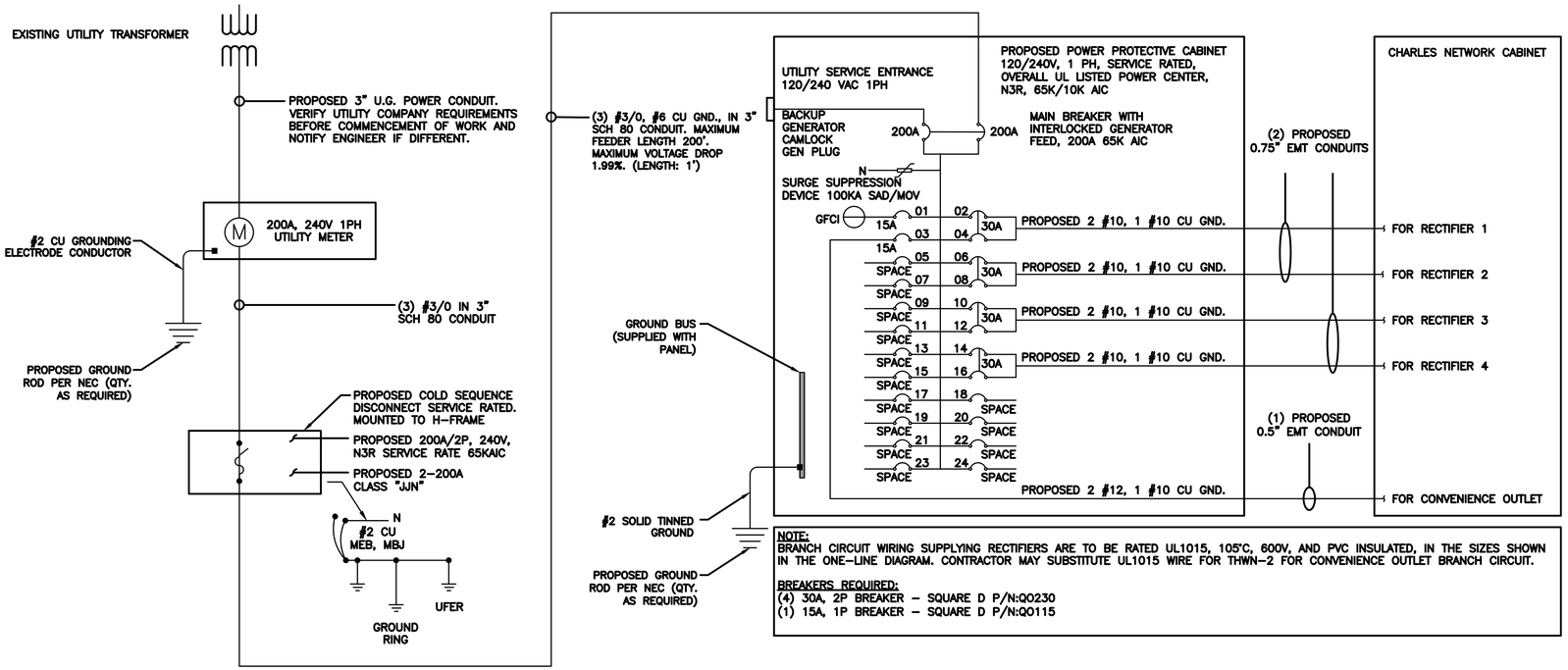
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REDLANDS, CA 92374

SHEET TITLE
ELECTRICAL DETAILS

SHEET NUMBER
E-2



NOTE:
BRANCH CIRCUIT WIRING SUPPLYING RECTIFIERS ARE TO BE RATED UL1015, 105°C, 600V, AND PVC INSULATED, IN THE SIZES SHOWN IN THE ONE-LINE DIAGRAM. CONTRACTOR MAY SUBSTITUTE UL1015 WIRE FOR THWN-2 FOR CONVENIENCE OUTLET BRANCH CIRCUIT.

BREAKERS REQUIRED:
(4) 30A, 2P BREAKER - SQUARE D P/N:QO230
(1) 15A, 1P BREAKER - SQUARE D P/N:QO115

NOTES

ELECTRICAL CONTRACTOR TO ACHIEVE A LETTER FROM UTILITY COMPANY WITH AVAILABLE FAULT CURRENT AND NOTIFY THE ENGINEER IF DIFFERENT THAN 65KAIC PRIOR TO ORDERING THE EQUIPMENT. LABEL PANEL IN ACCORDANCE WITH NEC AS REQUIRED BY JURISDICTION.
THE ENGINEER OF RECORD HAS PERFORMED ALL REQUIRED VOLTAGE DROP CALCULATIONS AND ALL BRANCH CIRCUIT AND FEEDERS COMPLY WITH THE NEC (LISTED ON T-1) ARTICLE 210.19(A)(1) FPN NO. 4.

THE (2) CONDUITS WITH (4) CURRENT CARRYING CONDUCTORS EACH, SHALL APPLY THE ADJUSTMENT FACTOR OF 80% PER 2014/17 NEC TABLE 310.15(B)(3)(a) OR 2020 NEC TABLE 310.15(C)(1) FOR UL1015 WIRE.

#12 FOR 15A-20A/1P BREAKER: 0.8 x 30A = 24.0A
#10 FOR 25A-30A/2P BREAKER: 0.8 x 40A = 32.0A
#8 FOR 35A-40A/2P BREAKER: 0.8 x 55A = 44.0A
#6 FOR 45A-60A/2P BREAKER: 0.8 x 75A = 60.0A

CONDUIT SIZING: AT 40% FILL PER NEC CHAPTER 9, TABLE 4, ARTICLE 358.
0.5" CONDUIT - 0.122 SQ. IN AREA
0.75" CONDUIT - 0.213 SQ. IN AREA
2.0" CONDUIT - 1.316 SQ. IN AREA
3.0" CONDUIT - 2.907 SQ. IN AREA

CABINET CONVENIENCE OUTLET CONDUCTORS (1 CONDUIT): USING THWN-2, CU.

#10 - 0.0211 SQ. IN X 2 = 0.0422 SQ. IN
#10 - 0.0211 SQ. IN X 1 = 0.0211 SQ. IN <GROUND
TOTAL = 0.0633 SQ. IN

0.5" EMT CONDUIT IS ADEQUATE TO HANDLE THE TOTAL OF (3) WIRES, INCLUDING GROUND WIRE, AS INDICATED ABOVE.

RECTIFIER CONDUCTORS (2 CONDUITS): USING UL1015, CU.

#10 - 0.0266 SQ. IN X 4 = 0.1064 SQ. IN
#10 - 0.0082 SQ. IN X 1 = 0.0082 SQ. IN <BARE GROUND
TOTAL = 0.1146 SQ. IN

0.75" EMT CONDUIT IS ADEQUATE TO HANDLE THE TOTAL OF (5) WIRES, INCLUDING GROUND WIRE, AS INDICATED ABOVE.

PPC FEED CONDUCTORS (1 CONDUIT): USING THWN, CU.

3/0 - 0.2679 SQ. IN X 3 = 0.8037 SQ. IN
#6 - 0.0507 SQ. IN X 1 = 0.0507 SQ. IN. <GROUND
TOTAL = 0.8544 SQ. IN

3.0" SCH 40 PVC CONDUIT IS ADEQUATE TO HANDLE THE TOTAL OF (4) WIRES; INCLUDING GROUND WIRE, AS INDICATED ABOVE.

PPC ONE-LINE DIAGRAM

NO SCALE

1

PROPOSED CHARLES PANEL SCHEDULE

LOAD SERVED	VOLT AMPS (WATTS) L1	VOLT AMPS (WATTS) L2	TRIP	CKT #	PHASE	CKT #	TRIP	VOLT AMPS (WATTS) L1	VOLT AMPS (WATTS) L2	LOAD SERVED
PPC GFCI OUTLET	180		15A	1	A	2	30A	2880		ABB/GE INFINITY RECTIFIER 1
CHARLES GFCI OUTLET		180	15A	3	B	4			2880	
-SPACE-				5	A	6	30A	2880		ABB/GE INFINITY RECTIFIER 2
-SPACE-				7	B	8			2880	
-SPACE-				9	A	10	30A	2880		ABB/GE INFINITY RECTIFIER 3
-SPACE-				11	B	12			2880	
-SPACE-				13	A	14	30A	2880		ABB/GE INFINITY RECTIFIER 4
-SPACE-				15	B	16			2880	
-SPACE-				17	A	18				-SPACE-
-SPACE-				19	B	20				-SPACE-
-SPACE-				21	A	22				-SPACE-
-SPACE-				23	B	24				-SPACE-
VOLTAGE AMPS	180	180						11520	11520	
200A MCB, 1ϕ, 24 SPACE, 120/240V			L1		L2					
MB RATING: 65,000 AIC			11700		11700		VOLTAGE AMPS			
			98		98		AMPS			
			98				MAX AMPS			
			123				MAX 125%			

PANEL SCHEDULE

NO SCALE

2

NOT USED

NO SCALE

3

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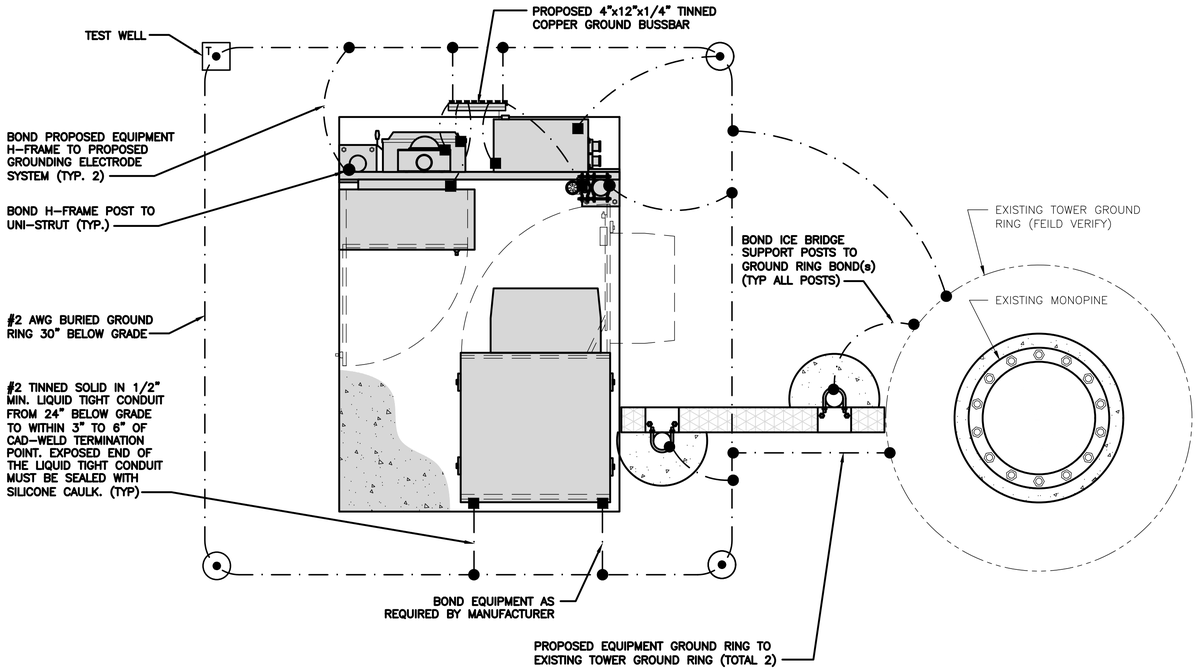
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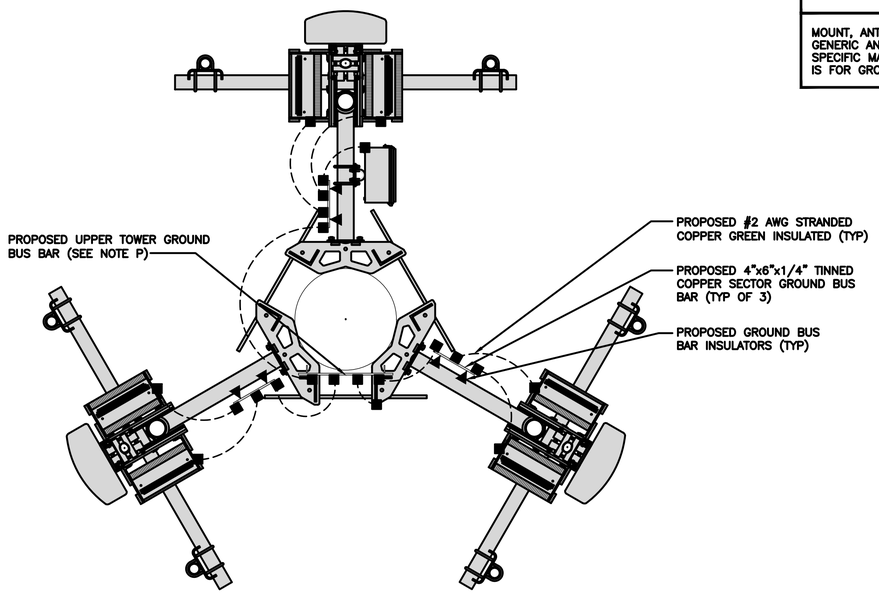
SHEET TITLE
ELECTRICAL ONE-LINE & PANEL SCHEDULE

SHEET NUMBER
E-3



TYPICAL EQUIPMENT GROUNDING PLAN

NO SCALE | 1



TYPICAL ANTENNA GROUNDING PLAN

NO SCALE | 2

NOTES

MOUNT, ANTENNAS AND OVP SHOWN ARE GENERIC AND NOT REFERENCING TO A SPECIFIC MANUFACTURER. THIS LAYOUT IS FOR GROUNDING REFERENCE ONLY.

EXOTHERMIC CONNECTION
MECHANICAL CONNECTION
GROUND BUS BAR
GROUND ROD
TEST GROUND ROD WITH INSPECTION SLEEVE
#2 AWG STRANDED & INSULATED
#2 AWG SOLID COPPER TINNED

GROUNDING LEGEND

1. GROUNDING IS SHOWN DIAGRAMMATICALLY ONLY.
2. CONTRACTOR SHALL GROUND ALL EQUIPMENT AS A COMPLETE SYSTEM. GROUNDING SHALL BE IN COMPLIANCE WITH NEC SECTION 250 AND DISH WIRELESS L.L.C. GROUNDING AND BONDING REQUIREMENTS AND MANUFACTURER'S SPECIFICATIONS.
3. ALL GROUND CONDUCTORS SHALL BE COPPER; NO ALUMINUM CONDUCTORS SHALL BE USED.

GROUNDING KEY NOTES

(A) EXTERIOR GROUND RING: #2 AWG SOLID COPPER, BURIED AT A DEPTH OF AT LEAST 30 INCHES BELOW GRADE, OR 6 INCHES BELOW THE FROST LINE AND APPROXIMATELY 24 INCHES FROM THE EXTERIOR WALL OR FOOTING.

(B) TOWER GROUND RING: THE GROUND RING SYSTEM SHALL BE INSTALLED AROUND AN ANTENNA TOWER'S LEGS, AND/OR GUY ANCHORS. WHERE SEPARATE SYSTEMS HAVE BEEN PROVIDED FOR THE TOWER AND THE BUILDING, AT LEAST TWO BONDS SHALL BE MADE BETWEEN THE TOWER RING GROUND SYSTEM AND THE BUILDING RING GROUND SYSTEM USING MINIMUM #2 AWG SOLID COPPER CONDUCTORS.

(C) INTERIOR GROUND RING: #2 AWG STRANDED GREEN INSULATED COPPER CONDUCTOR EXTENDED AROUND THE PERIMETER OF THE EQUIPMENT AREA. ALL NON-TELECOMMUNICATIONS RELATED METALLIC OBJECTS FOUND WITHIN A SITE SHALL BE GROUNDED TO THE INTERIOR GROUND RING WITH #6 AWG STRANDED GREEN INSULATED CONDUCTOR.

(D) BOND TO INTERIOR GROUND RING: #2 AWG SOLID TINNED COPPER WIRE PRIMARY BONDS SHALL BE PROVIDED AT LEAST AT FOUR POINTS ON THE INTERIOR GROUND RING, LOCATED AT THE CORNERS OF THE BUILDING.

(E) GROUND ROD: UL LISTED COPPER CLAD STEEL. MINIMUM 1/2" DIAMETER BY EIGHT FEET LONG. GROUND RODS SHALL BE INSTALLED WITH INSPECTION SLEEVES. GROUND RODS SHALL BE DRIVEN TO THE DEPTH OF GROUND RING CONDUCTOR.

(F) CELL REFERENCE GROUND BAR: POINT OF GROUND REFERENCE FOR ALL COMMUNICATIONS EQUIPMENT FRAMES. ALL BONDS ARE MADE WITH #2 AWG UNLESS NOTED OTHERWISE STRANDED GREEN INSULATED COPPER CONDUCTORS. BOND TO GROUND RING WITH (2) #2 SOLID TINNED COPPER CONDUCTORS.

(G) HATCH PLATE GROUND BAR: BOND TO THE INTERIOR GROUND RING WITH TWO #2 AWG STRANDED GREEN INSULATED COPPER CONDUCTORS. WHEN A HATCH-PLATE AND A CELL REFERENCE GROUND BAR ARE BOTH PRESENT, THE CRGB MUST BE CONNECTED TO THE HATCH-PLATE AND TO THE INTERIOR GROUND RING USING (2) TWO #2 AWG STRANDED GREEN INSULATED COPPER CONDUCTORS EACH.

(H) EXTERIOR CABLE ENTRY PORT GROUND BARS: LOCATED AT THE ENTRANCE TO THE CELL SITE BUILDING. BOND TO GROUND RING WITH A #2 AWG SOLID TINNED COPPER CONDUCTORS WITH AN EXOTHERMIC WELD AND INSPECTION SLEEVE.

(J) TELCO GROUND BAR: BOND TO BOTH CELL REFERENCE GROUND BAR OR EXTERIOR GROUND RING.

(K) FRAME BONDING: THE BONDING POINT FOR TELECOM EQUIPMENT FRAMES SHALL BE THE GROUND BUS THAT IS NOT ISOLATED FROM THE EQUIPMENTS METAL FRAMEWORK.

(L) INTERIOR UNIT BONDS: METAL FRAMES, CABINETS AND INDIVIDUAL METALLIC UNITS LOCATED WITH THE AREA OF THE INTERIOR GROUND RING REQUIRE A #6 AWG STRANDED GREEN INSULATED COPPER BOND TO THE INTERIOR GROUND RING.

(M) FENCE AND GATE GROUNDING: METAL FENCES WITHIN 7 FEET OF THE EXTERIOR GROUND RING OR OBJECTS BONDED TO THE EXTERIOR GROUND RING SHALL BE BONDED TO THE GROUND RING WITH A #2 AWG SOLID TINNED COPPER CONDUCTOR AT AN INTERVAL NOT EXCEEDING 25 FEET. BONDS SHALL BE MADE AT EACH GATE POST AND ACROSS GATE OPENINGS.

(N) EXTERIOR UNIT BONDS: METALLIC OBJECTS, EXTERNAL TO OR MOUNTED TO THE BUILDING, SHALL BE BONDED TO THE EXTERIOR GROUND RING. USING #2 TINNED SOLID COPPER WIRE

(P) ICE BRIDGE SUPPORTS: EACH ICE BRIDGE LEG SHALL BE BONDED TO THE GROUND RING WITH #2 AWG BARE TINNED COPPER CONDUCTOR. PROVIDE EXOTHERMIC WELDS AT BOTH THE ICE BRIDGE LEG AND BURIED GROUND RING.

(Q) DURING ALL DC POWER SYSTEM CHANGES INCLUDING DC SYSTEM CHANGE OUTS, RECTIFIER REPLACEMENTS OR ADDITIONS, BREAKER DISTRIBUTION CHANGES, BATTERY ADDITIONS, BATTERY REPLACEMENTS AND INSTALLATIONS OR CHANGES TO DC CONVERTER SYSTEMS IT SHALL BE REQUIRED THAT SERVICE CONTRACTORS VERIFY ALL DC POWER SYSTEMS ARE EQUIPPED WITH A MASTER DC SYSTEM RETURN GROUND CONDUCTOR FROM THE DC POWER SYSTEM COMMON RETURN BUS DIRECTLY CONNECTED TO THE CELL SITE REFERENCE GROUND BAR

(R) TOWER TOP COLLECTOR BUS BAR IS TO BE MECHANICALLY BONDED TO PROPOSED ANTENNA MOUNT COLLAR.

REFER TO DISH WIRELESS L.L.C. GROUNDING NOTES.

GROUNDING KEY NOTES

NO SCALE | 3

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DRAWN BY:	CHECKED BY:	APPROVED BY:
CRO	SEL	KRK

RFDS REV #: TBD

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REV	DATE	DESCRIPTION
A	08/23/2021	ISSUED FOR REVIEW
B	11/08/2021	ISSUED FOR REVIEW

A&E PROJECT NUMBER

EUCC0309

DISH WIRELESS L.L.C.
PROJECT INFORMATION

LSSNA03071A
444 NORTH DEARBORN
REDLANDS, CA 92374

SHEET TITLE

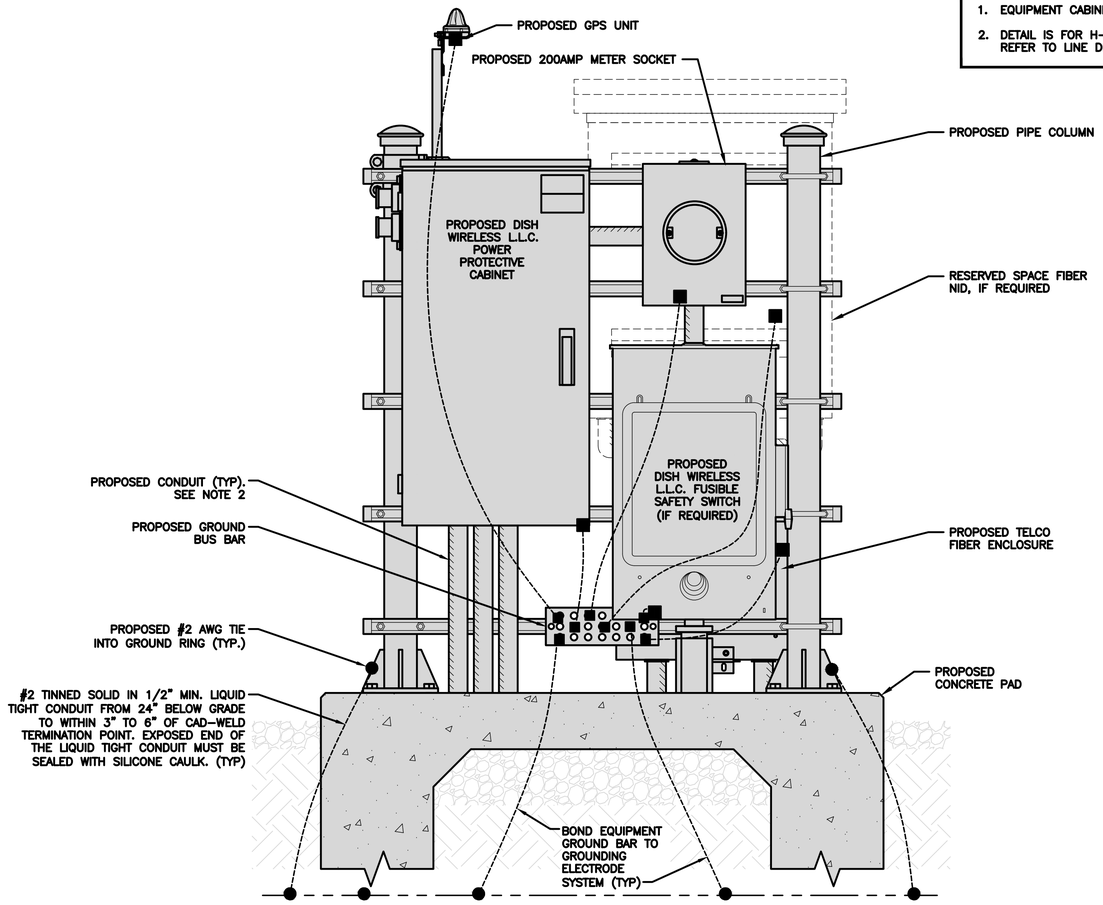
GROUNDING PLANS AND NOTES

SHEET NUMBER

G-1

NOTES

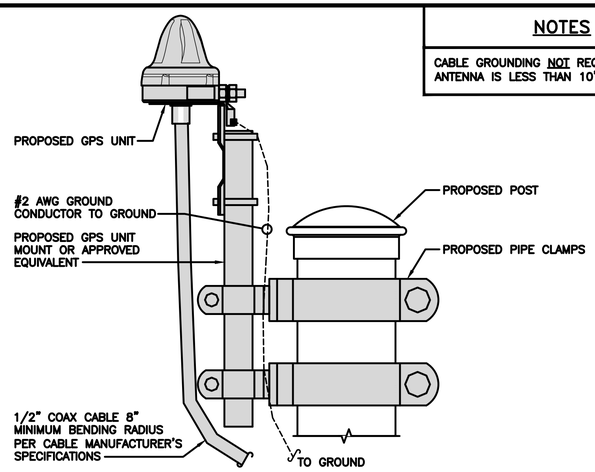
1. EQUIPMENT CABINET OMITTED FOR CLARITY
2. DETAIL IS FOR H-FRAME EQUIPMENT GROUNDING PURPOSES. REFER TO LINE DIAGRAMS FOR EXACT CONDUIT QUANTITY.



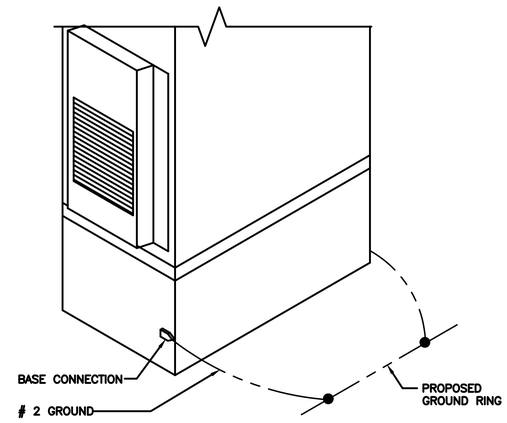
H-FRAME GROUNDING DETAIL | NO SCALE | 1

NOTES

CABLE GROUNDING NOT REQUIRED WHEN ANTENNA IS LESS THAN 10' FROM CABINET

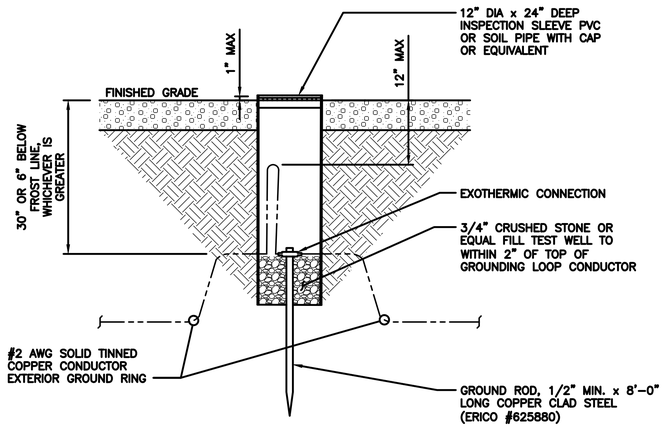


TYPICAL GPS UNIT GROUNDING | NO SCALE | 2

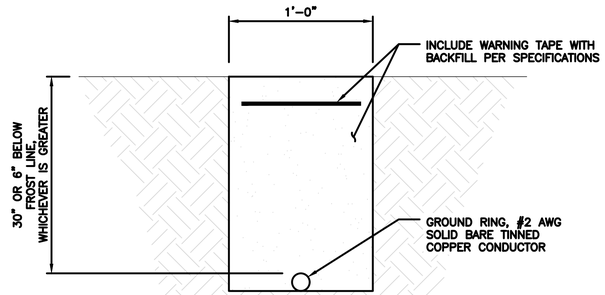


OUTDOOR CABINET GROUNDING | NO SCALE | 3

NOT USED | NO SCALE | 4



TYPICAL TEST GROUND ROD WITH INSPECTION SLEEVE | NO SCALE | 5



TYPICAL GROUND RING TRENCH | NO SCALE | 6

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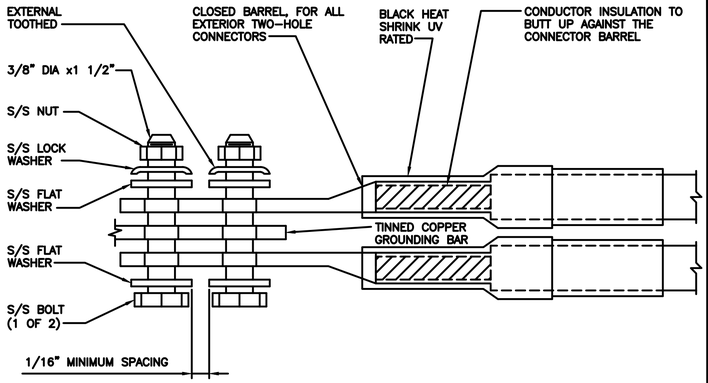
GROUNDING DETAILS

SHEET NUMBER

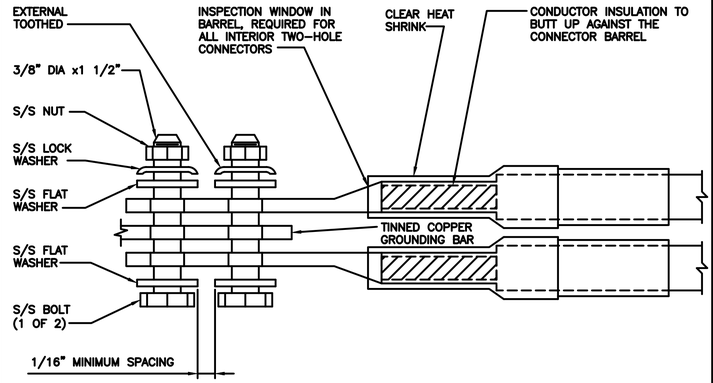
G-2

1. EXOTHERMIC WELD (2) TWO, #2 AWG BARE TINNED SOLID COPPER CONDUCTORS TO GROUND BAR. ROUTE CONDUCTORS TO BURIED GROUND RING AND PROVIDE PARALLEL EXOTHERMIC WELD.
2. ALL EXTERIOR GROUNDING HARDWARE SHALL BE STAINLESS STEEL 3/8" DIAMETER OR LARGER. ALL HARDWARE 18-8 STAINLESS STEEL INCLUDING LOCK WASHERS, COAT ALL SURFACES WITH AN ANTI-OXIDANT COMPOUND BEFORE MATING.
3. FOR GROUND BOND TO STEEL ONLY: COAT ALL SURFACES WITH AN ANTI-OXIDANT COMPOUND BEFORE MATING.
4. DO NOT INSTALL CABLE GROUNDING KIT AT A BEND AND ALWAYS DIRECT GROUND CONDUCTOR DOWN TO GROUNDING BUS.
5. NUT & WASHER SHALL BE PLACED ON THE FRONT SIDE OF THE GROUND BAR AND BOLTED ON THE BACK SIDE.
6. ALL GROUNDING PARTS AND EQUIPMENT TO BE SUPPLIED AND INSTALLED BY CONTRACTOR.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING ADDITIONAL GROUND BAR AS REQUIRED.
9. ENSURE THE WIRE INSULATION TERMINATION IS WITHIN 1/8" OF THE BARREL (NO SHINERS).

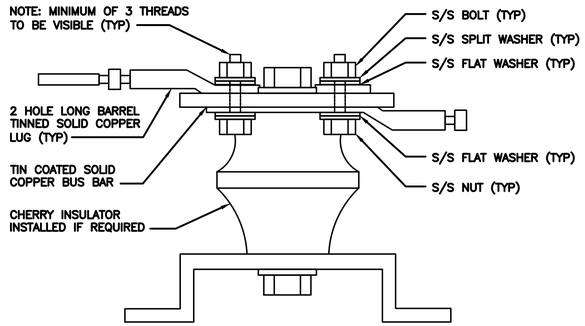
TYPICAL GROUNDING NOTES | NO SCALE | 1



TYPICAL EXTERIOR TWO HOLE LUG | NO SCALE | 2



TYPICAL INTERIOR TWO HOLE LUG | NO SCALE | 3



LUG DETAIL | NO SCALE | 4

NOT USED | NO SCALE | 5

NOT USED | NO SCALE | 6

NOT USED | NO SCALE | 7

NOT USED | NO SCALE | 8

NOT USED | NO SCALE | 9

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GROUNDING DETAILS

SHEET NUMBER

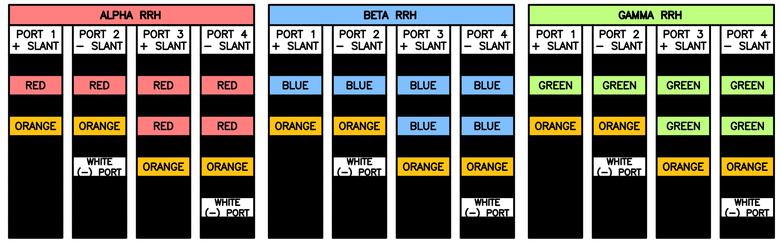
G-3

RF JUMPER COLOR CODING

3/4" TAPE WIDTHS WITH 3/4" SPACING

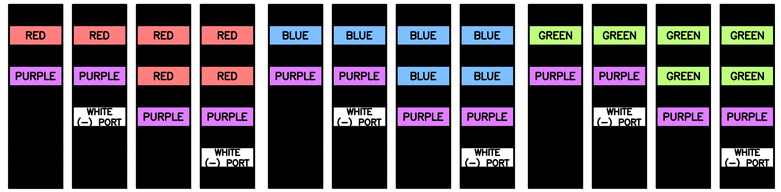
LOW–BAND RRH –
(600MHz N71 BASEBAND) +
(850MHz N26 BAND) +
(700MHz N29 BAND) – OPTIONAL PER MARKET

ADD FREQUENCY COLOR TO SECTOR BAND
(CBRS WILL USE YELLOW BANDS)



MID–BAND RRH –
(AWS BANDS N66+N70)

ADD FREQUENCY COLOR TO SECTOR BAND
(CBRS WILL USE YELLOW BANDS)

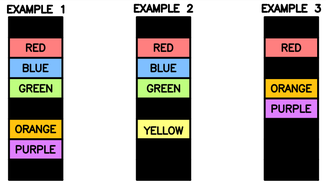


HYBRID/DISCREET CABLES

INCLUDE SECTOR BANDS BEING SUPPORTED
ALONG WITH FREQUENCY BANDS

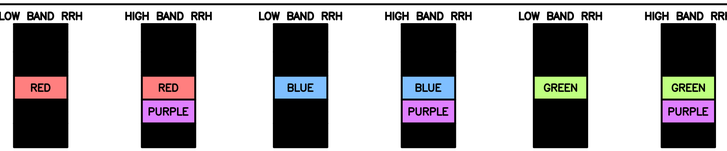
EXAMPLE 1 – HYBRID, OR DISCREET, SUPPORTS
ALL SECTORS, BOTH LOW–BANDS AND MID–BANDS

EXAMPLE 2 – HYBRID, OR DISCREET, SUPPORTS
CBRS ONLY, ALL SECTORS



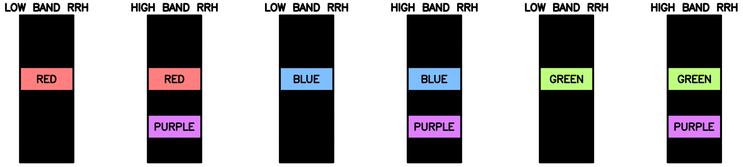
FIBER JUMPERS TO RRHs

LOW–BAND RRH FIBER CABLES HAVE SECTOR
STRIPE ONLY

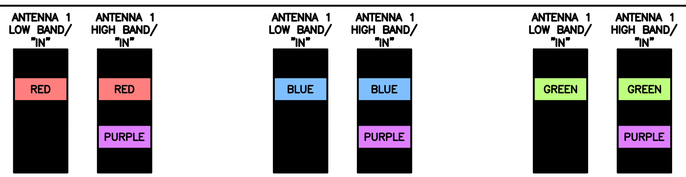


POWER CABLES TO RRHs

LOW–BAND RRH POWER CABLES HAVE SECTOR
STRIPE ONLY



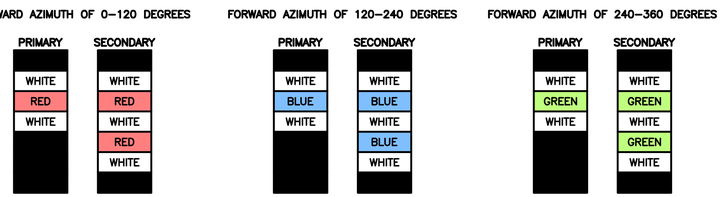
RET MOTORS AT ANTENNAS



MICROWAVE RADIO LINKS

LINKS WILL HAVE A 1.5–2 INCH WHITE WRAP WITH
THE AZIMUTH COLOR OVERLAPPING IN THE MIDDLE.
ADD ADDITIONAL SECTOR COLOR BANDS FOR EACH
ADDITIONAL MW RADIO.

MICROWAVE CABLES WILL REQUIRE P–TOUCH
LABELS INSIDE THE CABINET TO IDENTIFY THE
LOCAL AND REMOTE SITE ID'S



RF CABLE COLOR CODES | NO SCALE | 1

LOW BANDS (N71+N26)
OPTIONAL – (N29)
ORANGE

AWS
(N66+N70+H–BLOCK)
PURPLE

CBRS TECH
(3 GHz)
YELLOW

NEGATIVE SLANT PORT
ON ANT/RRH
WHITE

ALPHA SECTOR
RED

BETA SECTOR
BLUE

GAMMA SECTOR
GREEN

COLOR IDENTIFIER | NO SCALE | 2

NOT USED | NO SCALE | 3

NOT USED | NO SCALE | 4

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SHEET TITLE

RF
CABLE COLOR CODES

SHEET NUMBER

RF-1

LEGEND

EXOTHERMIC CONNECTION

MECHANICAL CONNECTION

CHEMICAL ELECTROLYTIC GROUNDING SYSTEM

TEST CHEMICAL ELECTROLYTIC GROUNDING SYSTEM

EXOTHERMIC WITH INSPECTION SLEEVE

GROUNDING BAR

GROUND ROD

TEST GROUND ROD WITH INSPECTION SLEEVE

SINGLE POLE SWITCH

DUPLEX RECEPTACLE

DUPLEX GFCI RECEPTACLE

FLUORESCENT LIGHTING FIXTURE
(2) TWO LAMPS 48–T8

SMOKE DETECTION (DC)

EMERGENCY LIGHTING (DC)

SECURITY LIGHT W/PHOTOCELL LITHONIA ALXW
LED–1–25A400/51K–SR4–120–PE–DDBTXD

CHAIN LINK FENCE

WOOD/WROUGHT IRON FENCE

WALL STRUCTURE

LEASE AREA

PROPERTY LINE (PL)

SETBACKS

ICE BRIDGE

CABLE TRAY

WATER LINE

UNDERGROUND POWER

UNDERGROUND TELCO

OVERHEAD POWER

OVERHEAD TELCO

UNDERGROUND TELCO/POWER

ABOVE GROUND POWER

ABOVE GROUND TELCO

ABOVE GROUND TELCO/POWER

WORKPOINT

SECTION REFERENCE

DETAIL REFERENCE

ABBREVIATIONS

AB	ANCHOR BOLT
ABV	ABOVE
AC	ALTERNATING CURRENT
ADDL	ADDITIONAL
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AGL	ABOVE GROUND LEVEL
AIC	AMPERAGE INTERRUPTION CAPACITY
ALUM	ALUMINUM
ALT	ALTERNATE
ANT	ANTENNA
APPROX	APPROXIMATE
ARCH	ARCHITECTURAL
ATS	AUTOMATIC TRANSFER SWITCH
AWG	AMERICAN WIRE GAUGE
BATT	BATTERY
BLDG	BUILDING
BLK	BLOCK
BLKG	BLOCKING
BM	BEAM
BTC	BARE TINNED COPPER CONDUCTOR
BOF	BOTTOM OF FOOTING
CAB	CABINET
CANT	CANTILEVERED
CHG	CHARGING
CLG	CEILING
CLR	CLEAR
COL	COLUMN
COMM	COMMON
CONC	CONCRETE
CONSTR	CONSTRUCTION
DBL	DOUBLE
DC	DIRECT CURRENT
DEPT	DEPARTMENT
DF	DOUGLAS FIR
DIA	DIAMETER
DIAG	DIAGONAL
DIM	DIMENSION
DWG	DRAWING
DWL	DOWEL
EA	EACH
EC	ELECTRICAL CONDUCTOR
EL.	ELEVATION
ELEC	ELECTRICAL
EMT	ELECTRICAL METALLIC TUBING
ENG	ENGINEER
EQ	EQUAL
EXP	EXPANSION
EXT	EXTERIOR
EW	EACH WAY
FAB	FABRICATION
FF	FINISH FLOOR
FG	FINISH GRADE
FIF	FACILITY INTERFACE FRAME
FIN	FINISH(ED)
FLR	FLOOR
FDN	FOUNDATION
FOC	FACE OF CONCRETE
FOM	FACE OF MASONRY
FOS	FACE OF STUD
FOW	FACE OF WALL
FS	FINISH SURFACE
FT	FOOT
FTG	FOOTING
GA	GAUGE
GEN	GENERATOR
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GLB	GLUE LAMINATED BEAM
GLV	GALVANIZED
GPS	GLOBAL POSITIONING SYSTEM
GND	GROUND
GSM	GLOBAL SYSTEM FOR MOBILE
HDG	HOT DIPPED GALVANIZED
HDR	HEADER
HGR	HANGER
HVAC	HEAT/VENTILATION/AIR CONDITIONING
HT	HEIGHT
IGR	INTERIOR GROUND RING
IN	INCH
INT	INTERIOR
LB(S)	POUND(S)
LF	LINEAR FEET
LTE	LONG TERM EVOLUTION
MAS	MASONRY
MAX	MAXIMUM
MCL	MOUNT CENTER LINE
MB	MACHINE BOLT
MECH	MECHANICAL
MFR	MANUFACTURER
MGB	MASTER GROUND BAR
MIN	MINIMUM
MISC	MISCELLANEOUS
MTL	METAL
MTS	MANUAL TRANSFER SWITCH
MW	MICROWAVE
NEC	NATIONAL ELECTRIC CODE
NM	NEWTON METERS
NO.	NUMBER
#	NUMBER
NTS	NOT TO SCALE
OC	ON–CENTER
OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
OPNG	OPENING
P/C	PRECAST CONCRETE
PCS	PERSONAL COMMUNICATION SERVICES
PCU	PRIMARY CONTROL UNIT
PRC	PRIMARY RADIO CABINET
PP	POLARIZING PRESERVING
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	PRESSURE TREATED
PWR	POWER CABINET
QTY	QUANTITY
RAD	RADIUS
RECT	RECTIFIER
REF	REFERENCE
REINF	REINFORCEMENT
REQ'D	REQUIRED
RET	REMOTE ELECTRIC TILT
RF	RADIO FREQUENCY
RMC	RIGID METALLIC CONDUIT
RRH	REMOTE RADIO HEAD
RRU	REMOTE RADIO UNIT
RWY	RACEWAY
SCH	SCHEDULE
SHT	SHEET
SIAD	SMART INTEGRATED ACCESS DEVICE
SIM	SIMILAR
SPEC	SPECIFICATION
SQ	SQUARE
SS	STAINLESS STEEL
STD	STANDARD
STL	STEEL
TEMP	TEMPORARY
THK	THICKNESS
TMA	TOWER MOUNTED AMPLIFIER
TN	TOE NAIL
TOA	TOP OF ANTENNA
TOC	TOP OF CURB
TOF	TOP OF FOUNDATION
TOP	TOP OF PLATE (PARAPET)
TOS	TOP OF STEEL
TOW	TOP OF WALL
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSION
TYP	TYPICAL
UG	UNDERGROUND
UL	UNDERWRITERS LABORATORY
UNO	UNLESS NOTED OTHERWISE
UMTS	UNIVERSAL MOBILE TELECOMMUNICATIONS SYSTEM
UPS	UNITERRUPTIBLE POWER SYSTEM (DC POWER PLANT)
VIF	VERIFIED IN FIELD
W	WIDE
W/	WITH
WD	WOOD
WP	WEATHERPROOF
WT	WEIGHT

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CRO	SEL	KRK

RFDS REV #: TBD

PRELIMINARY DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	08/23/2021	ISSUED FOR REVIEW
B	11/08/2021	ISSUED FOR REVIEW

A&E PROJECT NUMBER

EUCC0309

DISH WIRELESS L.L.C.
PROJECT INFORMATION

LSSNA03071A
444 NORTH DEARBORN
REDLANDS, CA 92374

SHEET TITLE

LEGEND AND ABBREVIATIONS

SHEET NUMBER

GN-1

SITE ACTIVITY REQUIREMENTS:

1. NOTICE TO PROCEED – NO WORK SHALL COMMENCE PRIOR TO CONTRACTOR RECEIVING A WRITTEN NOTICE TO PROCEED (NTP) AND THE ISSUANCE OF A PURCHASE ORDER. PRIOR TO ACCESSING/ENTERING THE SITE YOU MUST CONTACT THE DISH WIRELESS L.L.C. AND TOWER OWNER NOC & THE DISH WIRELESS L.L.C. AND TOWER OWNER CONSTRUCTION MANAGER.

2. "LOOK UP" – DISH WIRELESS L.L.C. AND TOWER OWNER SAFETY CLIMB REQUIREMENT:

THE INTEGRITY OF THE SAFETY CLIMB AND ALL COMPONENTS OF THE CLIMBING FACILITY SHALL BE CONSIDERED DURING ALL STAGES OF DESIGN, INSTALLATION, AND INSPECTION. TOWER MODIFICATION, MOUNT REINFORCEMENTS, AND/OR EQUIPMENT INSTALLATIONS SHALL NOT COMPROMISE THE INTEGRITY OR FUNCTIONAL USE OF THE SAFETY CLIMB OR ANY COMPONENTS OF THE CLIMBING FACILITY ON THE STRUCTURE. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO: PINCHING OF THE WIRE ROPE, BENDING OF THE WIRE ROPE FROM ITS SUPPORTS, DIRECT CONTACT OR CLOSE PROXIMITY TO THE WIRE ROPE WHICH MAY CAUSE FRICTIONAL WEAR, IMPACT TO THE ANCHORAGE POINTS IN ANY WAY, OR TO IMPEDE/BLOCK ITS INTENDED USE. ANY COMPROMISED SAFETY CLIMB, INCLUDING EXISTING CONDITIONS MUST BE TAGGED OUT AND REPORTED TO YOUR DISH WIRELESS L.L.C. AND DISH WIRELESS L.L.C. AND TOWER OWNER POC OR CALL THE NOC TO GENERATE A SAFETY CLIMB MAINTENANCE AND CONTRACTOR NOTICE TICKET.

3. PRIOR TO THE START OF CONSTRUCTION, ALL REQUIRED JURISDICTIONAL PERMITS SHALL BE OBTAINED. THIS INCLUDES, BUT IS NOT LIMITED TO, BUILDING, ELECTRICAL, MECHANICAL, FIRE, FLOOD ZONE, ENVIRONMENTAL, AND ZONING. AFTER ONSITE ACTIVITIES AND CONSTRUCTION ARE COMPLETED, ALL REQUIRED PERMITS SHALL BE SATISFIED AND CLOSED OUT ACCORDING TO LOCAL JURISDICTIONAL REQUIREMENTS.

4. ALL CONSTRUCTION MEANS AND METHODS; INCLUDING BUT NOT LIMITED TO, ERECTION PLANS, RIGGING PLANS, CLIMBING PLANS, AND RESCUE PLANS SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR RESPONSIBLE FOR THE EXECUTION OF THE WORK CONTAINED HEREIN, AND SHALL MEET ANSI/ASSE A10.48 (LATEST EDITION); FEDERAL, STATE, AND LOCAL REGULATIONS; AND ANY APPLICABLE INDUSTRY CONSENSUS STANDARDS RELATED TO THE CONSTRUCTION ACTIVITIES BEING PERFORMED. ALL RIGGING PLANS SHALL ADHERE TO ANSI/ASSE A10.48 (LATEST EDITION) AND DISH WIRELESS L.L.C. AND TOWER OWNER STANDARDS, INCLUDING THE REQUIRED INVOLVEMENT OF A QUALIFIED ENGINEER FOR CLASS IV CONSTRUCTION, TO CERTIFY THE SUPPORTING STRUCTURE(S) IN ACCORDANCE WITH ANSI/TIA–322 (LATEST EDITION).

5. ALL SITE WORK TO COMPLY WITH DISH WIRELESS L.L.C. AND TOWER OWNER INSTALLATION STANDARDS FOR CONSTRUCTION ACTIVITIES ON DISH WIRELESS L.L.C. AND TOWER OWNER TOWER SITE AND LATEST VERSION OF ANSI/TIA–1019–A–2012 "STANDARD FOR INSTALLATION, ALTERATION, AND MAINTENANCE OF ANTENNA SUPPORTING STRUCTURES AND ANTENNAS."

6. IF THE SPECIFIED EQUIPMENT CAN NOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY DISH WIRELESS L.L.C. AND TOWER OWNER PRIOR TO PROCEEDING WITH ANY SUCH CHANGE OF INSTALLATION.

7. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.

8. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.

9. THE CONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES INCLUDING PRIVATE LOCATES SERVICES PRIOR TO THE START OF CONSTRUCTION.

10. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY CONTRACTOR. EXTREME CAUTION SHOULD BE USED BY THE CONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. CONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS WILL INCLUDE BUT NOT BE LIMITED TO A) FALL PROTECTION B) CONFINED SPACE C) ELECTRICAL SAFETY D) TRENCHING AND EXCAVATION E) CONSTRUCTION SAFETY PROCEDURES.

11. ALL SITE WORK SHALL BE AS INDICATED ON THE STAMPED CONSTRUCTION DRAWINGS AND DISH PROJECT SPECIFICATIONS, LATEST APPROVED REVISION.

12. CONTRACTOR SHALL KEEP THE SITE FREE FROM ACCUMULATING WASTE MATERIAL, DEBRIS, AND TRASH AT THE COMPLETION OF THE WORK. IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.

13. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF DISH WIRELESS L.L.C. AND TOWER OWNER, AND/OR LOCAL UTILITIES.

14. THE CONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE TECHNICAL SPECIFICATION FOR SITE SIGNAGE REQUIRED BY LOCAL JURISDICTION AND SIGNAGE REQUIRED ON INDIVIDUAL PIECES OF EQUIPMENT, ROOMS, AND SHELTERS.

15. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE CARRIER'S EQUIPMENT AND TOWER AREAS.

16. THE SUB GRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.

17. THE AREAS OF THE OWNERS PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY, SHALL BE GRADED TO A UNIFORM SLOPE, AND STABILIZED TO PREVENT EROSION AS SPECIFIED ON THE CONSTRUCTION DRAWINGS AND/OR PROJECT SPECIFICATIONS.

18. CONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE LOCAL GUIDELINES FOR EROSION AND SEDIMENT CONTROL.

19. THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.

20. CONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS AND RADIOS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.

21. CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.

22. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.

GENERAL NOTES:

1.FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:

CONTRACTOR:GENERAL CONTRACTOR RESPONSIBLE FOR CONSTRUCTION

CARRIER:DISH WIRELESS L.L.C.

TOWER OWNER:TOWER OWNER

2. THESE DRAWINGS HAVE BEEN PREPARED USING STANDARDS OF PROFESSIONAL CARE AND COMPLETENESS NORMALLY EXERCISED UNDER SIMILAR CIRCUMSTANCES BY REPUTABLE ENGINEERS IN THIS OR SIMILAR LOCALITIES. IT IS ASSUMED THAT THE WORK DEPICTED WILL BE PERFORMED BY AN EXPERIENCED CONTRACTOR AND/OR WORKPEOPLE WHO HAVE A WORKING KNOWLEDGE OF THE APPLICABLE CODE STANDARDS AND REQUIREMENTS AND OF INDUSTRY ACCEPTED STANDARD GOOD PRACTICE. AS NOT EVERY CONDITION OR ELEMENT IS (OR CAN BE) EXPLICITLY SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL USE INDUSTRY ACCEPTED STANDARD GOOD PRACTICE FOR MISCELLANEOUS WORK NOT EXPLICITLY SHOWN.

3. THESE DRAWINGS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE MEANS OR METHODS OF CONSTRUCTION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY FOR PROTECTION OF LIFE AND PROPERTY DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO, BRACING, FORMWORK, SHORING, ETC. SITE VISITS BY THE ENGINEER OR HIS REPRESENTATIVE WILL NOT INCLUDE INSPECTION OF THESE ITEMS AND IS FOR STRUCTURAL OBSERVATION OF THE FINISHED STRUCTURE ONLY.

4. NOTES AND DETAILS IN THE CONSTRUCTION DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS. WHERE NO DETAILS ARE SHOWN, CONSTRUCTION SHALL CONFORM TO SIMILAR WORK ON THE PROJECT, AND/OR AS PROVIDED FOR IN THE CONTRACT DOCUMENTS. WHERE DISCREPANCIES OCCUR BETWEEN PLANS, DETAILS, GENERAL NOTES, AND SPECIFICATIONS, THE GREATER, MORE STRICT REQUIREMENTS, SHALL GOVERN. IF FURTHER CLARIFICATION IS REQUIRED CONTACT THE ENGINEER OF RECORD.

5. SUBSTANTIAL EFFORT HAS BEEN MADE TO PROVIDE ACCURATE DIMENSIONS AND MEASUREMENTS ON THE DRAWINGS TO ASSIST IN THE FABRICATION AND/OR PLACEMENT OF CONSTRUCTION ELEMENTS BUT IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO FIELD VERIFY THE DIMENSIONS, MEASUREMENTS, AND/OR CLEARANCES SHOWN IN THE CONSTRUCTION DRAWINGS PRIOR TO FABRICATION OR CUTTING OF ANY NEW OR EXISTING CONSTRUCTION ELEMENTS. IF IT IS DETERMINED THAT THERE ARE DISCREPANCIES AND/OR CONFLICTS WITH THE CONSTRUCTION DRAWINGS THE ENGINEER OF RECORD IS TO BE NOTIFIED AS SOON AS POSSIBLE.

6. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING CONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CARRIER POC AND TOWER OWNER.

7. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.

8. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.

9. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.

10. IF THE SPECIFIED EQUIPMENT CAN NOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY THE CARRIER AND TOWER OWNER PRIOR TO PROCEEDING WITH ANY SUCH CHANGE OF INSTALLATION.

11. CONTRACTOR IS TO PERFORM A SITE INVESTIGATION, BEFORE SUBMITTING BIDS, TO DETERMINE THE BEST ROUTING OF ALL CONDUITS FOR POWER, AND TELCO AND FOR GROUNDING CABLES AS SHOWN IN THE POWER, TELCO, AND GROUNDING PLAN DRAWINGS.

12. THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF DISH WIRELESS L.L.C. AND TOWER OWNER

13. CONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.

14. CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.

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PROJECT INFORMATION

LSSNA03071A
444 NORTH DEARBORN
REDLANDS, CA 92374

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-2

CONCRETE, FOUNDATIONS, AND REINFORCING STEEL:

1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318, ACI 336, ASTM A184, ASTM A185 AND THE DESIGN AND CONSTRUCTION SPECIFICATION FOR CAST-IN-PLACE CONCRETE.

2. UNLESS NOTED OTHERWISE, SOIL BEARING PRESSURE USED FOR DESIGN OF SLABS AND FOUNDATIONS IS ASSUMED TO BE 1000 psf.

3. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (f'c) OF 3000 psi AT 28 DAYS, UNLESS NOTED OTHERWISE. NO MORE THAN 90 MINUTES SHALL ELAPSE FROM BATCH TIME TO TIME OF PLACEMENT UNLESS APPROVED BY THE ENGINEER OF RECORD. TEMPERATURE OF CONCRETE SHALL NOT EXCEED 90°f AT TIME OF PLACEMENT.

4. CONCRETE EXPOSED TO FREEZE-THAW CYCLES SHALL CONTAIN AIR ENTRAINING ADMIXTURES. AMOUNT OF AIR ENTRAINMENT TO BE BASED ON SIZE OF AGGREGATE AND F3 CLASS EXPOSURE (VERY SEVERE). CEMENT USED TO BE TYPE II PORTLAND CEMENT WITH A MAXIMUM WATER-TO-CEMENT RATIO (W/C) OF 0.45.

5. ALL STEEL REINFORCING SHALL CONFORM TO ASTM A615. ALL WELDED WIRE FABRIC (WWF) SHALL CONFORM TO ASTM A185. ALL SPLICES SHALL BE CLASS "B" TENSION SPLICES, UNLESS NOTED OTHERWISE. ALL HOOKS SHALL BE STANDARD 90 DEGREE HOOKS, UNLESS NOTED OTHERWISE. YIELD STRENGTH (Fy) OF STANDARD DEFORMED BARS ARE AS FOLLOWS:

#4 BARS AND SMALLER 40 ksi

#5 BARS AND LARGER 60 ksi

6. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:

- CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH 3"
- CONCRETE EXPOSED TO EARTH OR WEATHER:
- #6 BARS AND LARGER 2"
- #5 BARS AND SMALLER 1-1/2"
- CONCRETE NOT EXPOSED TO EARTH OR WEATHER:
- SLAB AND WALLS 3/4"
- BEAMS AND COLUMNS 1-1/2"

7. A TOOLED EDGE OR A 3/4" CHAMFER SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNLESS NOTED OTHERWISE, IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.

ELECTRICAL INSTALLATION NOTES:

1. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC AND ALL APPLICABLE FEDERAL, STATE, AND LOCAL CODES/ORDINANCES.

2. CONDUIT ROUTINGS ARE SCHEMATIC. CONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED AND TRIP HAZARDS ARE ELIMINATED.

3. WIRING, RACEWAY AND SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC.

4. ALL CIRCUITS SHALL BE SEGREGATED AND MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC.

4.1. ALL EQUIPMENT SHALL BEAR THE UNDERWRITERS LABORATORIES LABEL OF APPROVAL, AND SHALL CONFORM TO REQUIREMENT OF THE NATIONAL ELECTRICAL CODE.

4.2. ALL OVERCURRENT DEVICES SHALL HAVE AN INTERRUPTING CURRENT RATING THAT SHALL BE GREATER THAN THE SHORT CIRCUIT CURRENT TO WHICH THEY ARE SUBJECTED, 22,000 AIC MINIMUM. VERIFY AVAILABLE SHORT CIRCUIT CURRENT DOES NOT EXCEED THE RATING OF ELECTRICAL EQUIPMENT IN ACCORDANCE WITH ARTICLE 110.24 NEC OR THE MOST CURRENT ADOPTED CODE PRE THE GOVERNING JURISDICTION.

5. EACH END OF EVERY POWER PHASE CONDUCTOR, GROUNDING CONDUCTOR, AND TELCO CONDUCTOR OR CABLE SHALL BE LABELED WITH COLOR-CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2" PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). THE IDENTIFICATION METHOD SHALL CONFORM WITH NEC AND OSHA.

6. ALL ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED WITH LAMICOID TAGS SHOWING THEIR RATED VOLTAGE, PHASE CONFIGURATION, WIRE CONFIGURATION, POWER OR AMPACITY RATING AND BRANCH CIRCUIT ID NUMBERS (i.e. PANEL BOARD AND CIRCUIT ID'S).

7. PANEL BOARDS (ID NUMBERS) SHALL BE CLEARLY LABELED WITH PLASTIC LABELS.

8. TIE WRAPS ARE NOT ALLOWED.

9. ALL POWER AND EQUIPMENT GROUND WIRING IN TUBING OR CONDUIT SHALL BE SINGLE COPPER CONDUCTOR (#14 OR LARGER) WITH TYPE THHW, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 INSULATION UNLESS OTHERWISE SPECIFIED.

10. SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED INDOORS SHALL BE SINGLE COPPER CONDUCTOR (#6 OR LARGER) WITH TYPE THHW, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 INSULATION UNLESS OTHERWISE SPECIFIED.

11. POWER AND CONTROL WIRING IN FLEXIBLE CORD SHALL BE MULTI-CONDUCTOR, TYPE SOOW CORD (#14 OR LARGER) UNLESS OTHERWISE SPECIFIED.

12. POWER AND CONTROL WIRING FOR USE IN CABLE TRAY SHALL BE MULTI-CONDUCTOR, TYPE TC CABLE (#14 OR LARGER), WITH TYPE THHW, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 INSULATION UNLESS OTHERWISE SPECIFIED.

13. ALL POWER AND GROUNDING CONNECTIONS SHALL BE CRIMP-STYLE, COMPRESSION WIRE LUGS AND WIRE NUTS BY THOMAS AND BETTS (OR EQUAL). LUGS AND WIRE NUTS SHALL BE RATED FOR OPERATION NOT LESS THAN 75° C (90° C IF AVAILABLE).

14. RACEWAY AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND NEC.

15. ELECTRICAL METALLIC TUBING (EMT), INTERMEDIATE METAL CONDUIT (IMC), OR RIGID METAL CONDUIT (RMC) SHALL BE USED FOR EXPOSED INDOOR LOCATIONS.

16. ELECTRICAL METALLIC TUBING (EMT) OR METAL-CLAD CABLE (MC) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.

17. SCHEDULE 40 PVC UNDERGROUND ON STRAIGHTS AND SCHEDULE 80 PVC FOR ALL ELBOWS/90s AND ALL APPROVED ABOVE GRADE PVC CONDUIT.

18. LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID-TITE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.

19. CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION-TYPE AND APPROVED FOR THE LOCATION USED. SET SCREW FITTINGS ARE NOT ACCEPTABLE.

20. CABINETS, BOXES AND WIRE WAYS SHALL BE LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND THE NEC.

21. WIREWAYS SHALL BE METAL WITH AN ENAMEL FINISH AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARDS (WIREMOLD SPECMATE WIREWAY).

22. SLOTTED WIRING DUCT SHALL BE PVC AND INCLUDE COVER (PANDUIT TYPE E OR EQUAL).

23. CONDUITS SHALL BE FASTENED SECURELY IN PLACE WITH APPROVED NON-PERFORATED STRAPS AND HANGERS. EXPLOSIVE DEVICES (i.e. POWDER-ACTUATED) FOR ATTACHING HANGERS TO STRUCTURE WILL NOT BE PERMITTED. CLOSELY FOLLOW THE LINES OF THE STRUCTURE, MAINTAIN CLOSE PROXIMITY TO THE STRUCTURE AND KEEP CONDUITS IN TIGHT ENVELOPES. CHANGES IN DIRECTION TO ROUTE AROUND OBSTACLES SHALL BE MADE WITH CONDUIT OUTLET BODIES. CONDUIT SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER. PARALLEL AND PERPENDICULAR TO STRUCTURE WALL AND CEILING LINES. ALL CONDUIT SHALL BE FISHED TO CLEAR OBSTRUCTIONS. ENDS OF CONDUITS SHALL BE TEMPORARILY CAPPED FLUSH TO FINISH GRADE TO PREVENT CONCRETE, PLASTER OR DIRT FROM ENTERING. CONDUITS SHALL BE RIGIDLY CLAMPED TO BOXES BY GALVANIZED MALLEABLE IRON BUSHING ON INSIDE AND GALVANIZED MALLEABLE IRON LOCKNUT ON OUTSIDE AND INSIDE.

24. EQUIPMENT CABINETS, TERMINAL BOXES, JUNCTION BOXES AND PULL BOXES SHALL BE GALVANIZED OR EPOXY-COATED SHEET STEEL. SHALL MEET OR EXCEED UL 50 AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND NEMA 3 (OR BETTER) FOR EXTERIOR LOCATIONS.

25. METAL RECEPTACLE, SWITCH AND DEVICE BOXES SHALL BE GALVANIZED, EPOXY-COATED OR NON-CORRODING; SHALL MEET OR EXCEED UL 514A AND NEMA OS 1 AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND WEATHER PROTECTED (WP OR BETTER) FOR EXTERIOR LOCATIONS.

26. NONMETALLIC RECEPTACLE, SWITCH AND DEVICE BOXES SHALL MEET OR EXCEED NEMA OS 2 (NEWEST REVISION) AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND WEATHER PROTECTED (WP OR BETTER) FOR EXTERIOR LOCATIONS.

27. THE CONTRACTOR SHALL NOTIFY AND OBTAIN NECESSARY AUTHORIZATION FROM THE CARRIER AND/OR DISH WIRELESS L.L.C. AND TOWER OWNER BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.

28. THE CONTRACTOR SHALL PROVIDE NECESSARY TAGGING ON THE BREAKERS, CABLES AND DISTRIBUTION PANELS IN ACCORDANCE WITH THE APPLICABLE CODES AND STANDARDS TO SAFEGUARD LIFE AND PROPERTY.

29. INSTALL LAMICOID LABEL ON THE METER CENTER TO SHOW "DISH WIRELESS L.L.C.".

30. ALL EMPTY/SPARE CONDUITS THAT ARE INSTALLED ARE TO HAVE A METERED MULE TAPE PULL CORD INSTALLED.

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SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-3

GROUNDING NOTES:

1. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION AND AC POWER GES'S) SHALL BE BONDED TOGETHER AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.

2. THE CONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR GROUND ELECTRODE SYSTEMS, THE CONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.

3. THE CONTRACTOR IS RESPONSIBLE FOR PROPERLY SEQUENCING GROUNDING AND UNDERGROUND CONDUIT INSTALLATION AS TO PREVENT ANY LOSS OF CONTINUITY IN THE GROUNDING SYSTEM OR DAMAGE TO THE CONDUIT AND PROVIDE TESTING RESULTS.

4. METAL CONDUIT AND TRAY SHALL BE GROUNDED AND MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH #6 COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.

5. METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT.

6. EACH CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, #6 STRANDED COPPER OR LARGER FOR INDOOR BTS; #2 BARE SOLID TINNED COPPER FOR OUTDOOR BTS.

7. CONNECTIONS TO THE GROUND BUS SHALL NOT BE DOUBLED UP OR STACKED BACK TO BACK CONNECTIONS ON OPPOSITE SIDE OF THE GROUND BUS ARE PERMITTED.

8. ALL EXTERIOR GROUND CONDUCTORS BETWEEN EQUIPMENT/GROUND BARS AND THE GROUND RING SHALL BE #2 SOLID TINNED COPPER UNLESS OTHERWISE INDICATED.

9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.

10. USE OF 90° BENDS IN THE PROTECTION GROUNDING CONDUCTORS SHALL BE AVOIDED WHEN 45° BENDS CAN BE ADEQUATELY SUPPORTED.

11. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.

12. ALL GROUND CONNECTIONS ABOVE GRADE (INTERIOR AND EXTERIOR) SHALL BE FORMED USING HIGH PRESS CRIMPS.

13. COMPRESSION GROUND CONNECTIONS MAY BE REPLACED BY EXOTHERMIC WELD CONNECTIONS.

14. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO THE BRIDGE AND THE TOWER GROUND BAR.

15. APPROVED ANTIOXIDANT COATINGS (i.e. CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.

16. ALL EXTERIOR GROUND CONNECTIONS SHALL BE COATED WITH A CORROSION RESISTANT MATERIAL.

17. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.

18. BOND ALL METALLIC OBJECTS WITHIN 6 ft OF MAIN GROUND RING WITH (1) #2 BARE SOLID TINNED COPPER GROUND CONDUCTOR.

19. GROUND CONDUCTORS USED FOR THE FACILITY GROUNDING AND LIGHTNING PROTECTION SYSTEMS SHALL NOT BE ROUTED THROUGH METALLIC OBJECTS THAT FORM A RING AROUND THE CONDUCTOR, SUCH AS METALLIC CONDUITS, METAL SUPPORT CLIPS OR SLEEVES THROUGH WALLS OR FLOORS. WHEN IT IS REQUIRED TO BE HOUSED IN CONDUIT TO MEET CODE REQUIREMENTS OR LOCAL CONDITIONS, NON-METALLIC MATERIAL SUCH AS PVC CONDUIT SHALL BE USED. WHERE USE OF METAL CONDUIT IS UNAVOIDABLE (i.e., NONMETALLIC CONDUIT PROHIBITED BY LOCAL CODE) THE GROUND CONDUCTOR SHALL BE BONDED TO EACH END OF THE METAL CONDUIT.

20. ALL GROUNDS THAT TRANSITION FROM BELOW GRADE TO ABOVE GRADE MUST BE #2 BARE SOLID TINNED COPPER IN 3/4" NON-METALLIC, FLEXIBLE CONDUIT FROM 24" BELOW GRADE TO WITHIN 3" TO 6" OF CAD-WELD TERMINATION POINT. THE EXPOSED END OF THE CONDUIT MUST BE SEALED WITH SILICONE CAULK. (ADD TRANSITIONING GROUND STANDARD DETAIL AS WELL).

21. BUILDINGS WHERE THE MAIN GROUNDING CONDUCTORS ARE REQUIRED TO BE ROUTED TO GRADE, THE CONTRACTOR SHALL ROUTE TWO GROUNDING CONDUCTORS FROM THE ROOFTOP, TOWERS, AND WATER TOWERS GROUNDING RING, TO THE EXISTING GROUNDING SYSTEM, THE GROUNDING CONDUCTORS SHALL NOT BE SMALLER THAN 2/0 COPPER. ROOFTOP GROUNDING RING SHALL BE BONDED TO THE EXISTING GROUNDING SYSTEM, THE BUILDING STEEL COLUMNS, LIGHTNING PROTECTION SYSTEM, AND BUILDING MAIN WATER LINE (FERROUS OR NONFERROUS METAL PIPING ONLY). DO NOT ATTACH GROUNDING TO FIRE SPRINKLER SYSTEM PIPES.

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DRAWN BY:	CHECKED BY:	APPROVED BY:
CRO	SEL	KRK

RFDS REV #: TBD

PRELIMINARY DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	08/23/2021	ISSUED FOR REVIEW
B	11/08/2021	ISSUED FOR REVIEW

A&E PROJECT NUMBER

EUCC0309

DISH WIRELESS L.L.C.
PROJECT INFORMATION

LSSNA03071A
444 NORTH DEARBORN
REDLANDS, CA 92374

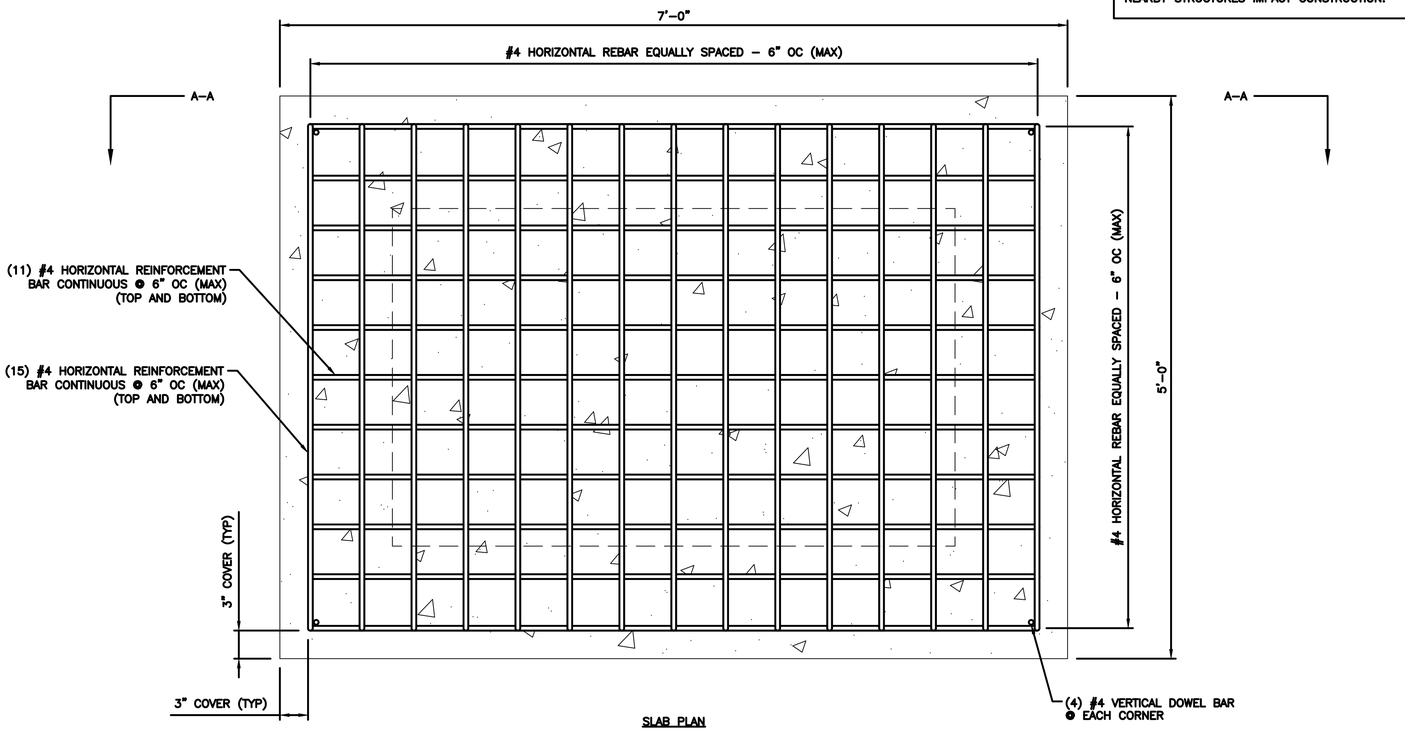
SHEET TITLE

GENERAL NOTES

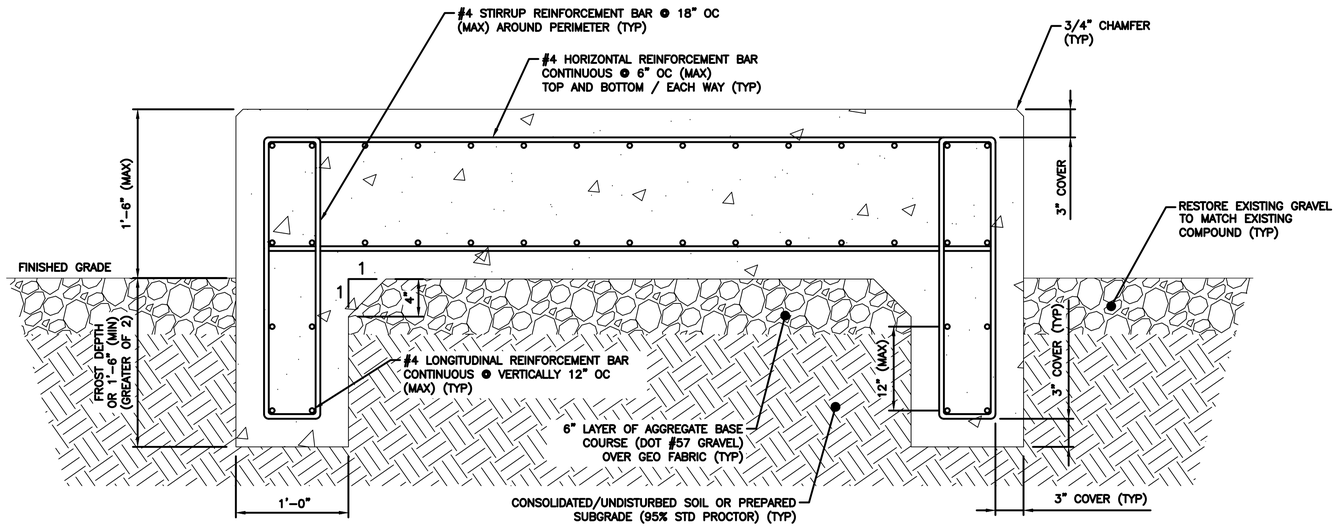
SHEET NUMBER

GN-4

NOTE:
CONTACT EOR IMMEDIATELY IF FOUNDATIONS FROM NEARBY STRUCTURES IMPACT CONSTRUCTION.



SLAB PLAN



SLAB ELEVATION
A–A

FOUNDATION DETAILS | NO SCALE | 1

REINFORCED CONCRETE NOTES:

1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318–14, ACI 336, ASTM A184, ASTM A185 AND THE DESIGN & CONSTRUCTION SPECIFICATION FOR CAST–IN–PLACE CONCRETE.
2. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF f'c = 4000 PSI WITHIN 28 DAYS.
3. REINFORCING STEEL SHALL CONFORM TO ASTM A 615 GRADE 60, DEFORMED UNLESS NOTED OTHERWISE.
4. A CHAMFER OF 3/4" SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNLESS NOTED OTHERWISE, IN ACCORDANCE WITH ACI 301 SECTION 4.2.
5. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS OTHERWISE NOTED ON DRAWINGS:

   CONCRETE CAST AGAINST EARTH.....3"
   CONCRETE EXPOSED TO EARTH OR WEATHER
   #6 AND LARGER.....2"
   #5 AND SMALLER & W.W.F.....1–1/2"

6. INSTALLATION OF CONCRETE ANCHORS SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN SPECIFICATIONS. THE ANCHOR BOLTS, DOWEL, OR RODS SHALL CONFORM TO THE ANCHOR MANUFACTURER'S SPECIFICATIONS FOR MATERIAL STRENGTH, EMBEDMENT DEPTH, SPACING, AND EDGE DISTANCE OR AS DETAILED ON THE DRAWINGS. NO REBAR SHALL BE CUT WITHOUT PRIOR ENGINEERING APPROVAL WHEN DRILLING HOLES IN CONCRETE. EXPANSION BOLTS SHALL BE PROVIDED BY RAMSET/REDHEAD, HILTI OR APPROVED EQUAL. IF THE MANUFACTURER'S SPECIFICATIONS AND DETAILS ARE FOUND TO CONFLICT WITH THAT SHOWN HEREIN, THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY.
7. MECHANICAL VIBRATION IS REQUIRED ON FOUNDATION TO REDUCE THE HONEYCOMB EFFECT UNLESS OTHERWISE DIRECTED BY THE CONSTRUCTION MANAGER.
8. CONTRACTOR SHALL NOTIFY ENGINEER ASAP IF A STEEL PLATE IS REQUIRED FOR THE EXCAVATED HOLE.
9. CONTRACTOR TO VERIFY LOCATION OF ALL EXISTING PUBLIC AND PRIVATE UTILITIES PRIOR TO EXCAVATION. IF NECESSARY UTILITIES SHALL BE RELOCATED PRIOR TO FOUNDATION MODIFICATION. UTILITIES NOT TO BE ENCASED IN CONCRETE.
10. ALL EXCAVATIONS PREPARED FOR PLACEMENT OF CONCRETE SHALL BE OF UNDISTURBED SOILS, SUBSTANTIALLY HORIZONTAL & FREE FROM ANY LOOSE, UNSUITABLE MATERIAL OR FROZEN SOILS, & WITHOUT THE PRESENCE OF POUNDING WATER. DEWATERING FOR EXCESS GROUND WATER SHALL BE PROVIDED WHEN REQUIRED. COMPACTION OF SOILS UNDER CONCRETE PAD FOUNDATIONS SHALL NOT BE LESS THAN 95% OF THE MODIFIED PROCTOR MAXIMUM DRY DENSITY FOR THE SOIL IN ACCORDANCE WITH ASTM D1557.
11. NO GROUT OR CONCRETE SHALL BE PLACED BETWEEN THE BOTTOM OF THE BASE PLATE AND THE TOP OF THE FOUNDATION TO ALLOW FOR MOISTURE DRAINAGE.
12. THE FOUNDATION SHALL NOT BE INSTALLED IN THE CENTER OF A DRAINAGE DITCH. TOP OF FOUNDATION SHALL BE INSTALLED ABOVE THE ANTICIPATED WATER LEVEL.
13. SLOPE TOP OF FOUNDATION AWAY FROM THE CENTER TO ALLOW FOR DRAINAGE.
14. MAXIMUM CLEAR DISTANCE FROM TOP OF CONCRETE FOUNDATION TO BOTTOM ANCHOR ROD NUT IS TO BE EQUAL TO THE ANCHOR ROD DIAMETER UNLESS SPECIFIED BY THE MANUFACTURER. TOP AND BOTTOM ANCHOR ROD NUTS ARE TO BE TIGHTENED TO A SNUG TIGHT CONDITION WITH THE BOTTOM NUT SECURED. THE TOP NUT SHALL BE ROTATED AN ADDITIONAL 1/3 TURN BEYOND SNUG TIGHT.
15. ANCHOR RODS SHALL BE OF MINIMUM F1554–55 GRADE.
16. SOIL PARAMETERS PER MINIMUM 2018 IBC GUIDELINES, TABLE 1806.2

    ALLOWABLE SOIL BEARING PRESSURE: 2000 PSF

BILL OF MATERIALS		
QTY	LENGTH	DESCRIPTION
22	6'–6"±	#4 HORIZONTAL BARS
30	4'–6"±	#4 HORIZONTAL BARS
8	6'–6"±	#4 LONGITUDINAL BARS
8	4'–6"±	#4 LONGITUDINAL BARS
16	7'–0"±	#4 STIRRUP BARS
4	3'–6"±	#4 DOWEL BARS
3.06± CU.YD.	–	4000 PSI NORMAL WEIGHT CONCRETE

*MINIMUM BEND DIAMETER OF REBAR SHOULD BE UTILIZED. USE 4*Db U.N.O.

NOTE:
CONCRETE SLAB TO BE LEVELED TO NO MORE THAN +/– 1 DEGREE FROM HORIZONTAL ON BOTH PLANES.

NOTE:
REFER TO THE STRUCTURAL ANALYSIS REPORT OF THE EQUIPMENT PLATFORM AND/OR CABINET ANCHORAGE (SEPARATE DOCUMENT) FOR ADDITIONAL STRUCTURAL INFORMATION REGARDING THE PLATFORM AND/OR CABINET INSTALLATION AND ANCHORAGE ONTO THE FOUNDATION.

NOTES | NO SCALE | 2

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DRAWN BY:	CHECKED BY:	APPROVED BY:
CRO	SEL	KRK

RFDS REV #: TBD

PRELIMINARY DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	08/23/2021	ISSUED FOR REVIEW
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A&E PROJECT NUMBER

EUCC0309

DISH WIRELESS L.L.C.
PROJECT INFORMATION

LSSNA03071A
444 NORTH DEARBORN
REDLANDS, CA 92374

SHEET TITLE

FOUNDATION DETAILS

SHEET NUMBER

S-1

"A City That Works"

City Council/Financing Authority Meeting **I. 5.**

DATE: 01/18/2022

TO: Honorable Mayor and City Council Members

SUBJECT: Approve Resolution No. 8290 to adopt the Yucaipa Sub-Basin Groundwater Sustainability Plan (Basin No. 8-002.07) (Municipal Utilities and Engineering Director Harris)

MOTION(S):

If the City Council determines that staff's recommendation is appropriate, the following motion is provided:

I move that the City Council adopt Resolution No. 8290.

RECOMMENDATION:

Staff recommends adoption of Resolution No. 8290.

DISCUSSION:

On September 16, 2014, Governor Jerry Brown signed into law Senate Bills 1168 and 1319, and Assembly Bill 1739, collectively known as the Sustainability Groundwater Management Act (SGMA). Various clarifying amendments to SGMA were signed into law in 2015, including Senate Bills 13 and 226, and Assembly Bills 617 and 939 authorizing local agencies to form a Groundwater Sustainability Agency (GSA) pursuant to a joint powers agreement, a memorandum of agreement, or other legal agreement, and California Water Code Section 10723.6(b), authorizing water corporations regulated by the California Public Utilities Commission and mutual water companies to participate in a GSA through a memorandum of agreement or other legal agreement.

The SGMA legislation excluded the Bunker Hill Basin, the City's primary groundwater source. This is because pursuant to the 1969 Western Judgement this basin was adjudicated, and pumping and replenishment requirements were established at that time. The Yucaipa Sub-Basin extends into the City of Redlands (see attached map). The City elected to join the GSA since it has land management authority above this portion of the Yucaipa Sub-Basin.

On June 6, 2017, the City Council approved a memorandum of agreement to join this GSA (Sub-Basin No. 8-02.07). A copy of the resolution to adopt the Groundwater Sustainability Plan for the Yucaipa Sub-Basion (Basin No. 8-002.07) is attached. Note that California Water Code section 10728.6 provides that the California Environmental Quality Act does not apply to the preparation and adoption of Groundwater Sustainability Plans.

ALTERNATIVES:

The City Council may decline adoption of Resolution No. 8290.

STRATEGIC PLAN:

N/A

SUBMITTED BY:
John R. Harris, Municipal Utilities and Engineering Director

RECOMMENDED BY:
Charles M. Duggan Jr., City Manager

REVIEWED BY:
Daniel J. McHugh, City Attorney
Janice McConnell, Assistant City Manager
Danielle Garcia, Management Services/Finance Director

PREPARED BY:
Kevin O. Watson, Utilities Operations Manager

Fiscal Impact

Fiscal Year:	FY 21/22
Revenue Generating:	No
Appropriation Required Y/N:	No
Account No.:	501900

Discussion:
There is no fiscal impact associated with adoption of Resolution No. 8290.

Attachments

Resolution to adopt Groundwater Sustainability Plan for the Yucaipa Sub-Basin
2017 Memorandum of Agreement

Yucaipa Sub-Basin GSP 1-200 of 576 pages
Yucaipa Sub-Basin GSP 201-400 of 576 pages
Yucaipa Sub-Basin GSP 401-576 of 576 pages
Yucaipa GSP Appendices 1-200 of 386 pages
Yucaipa GSP Appendices 201-386 of 386 pages
Appendix 3-B

RESOLUTION NO. 8290

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF REDLANDS AS A MEMBER OF THE YUCAIPA GROUNDWATER SUSTAINABILITY AGENCY TO ADOPT THE GROUNDWATER SUSTAINABILITY PLAN FOR THE YUCAIPA SUBBASIN (BASIN NO. 8-002.07)

WHEREAS, on September 16, 2014, Governor Jerry Brown signed into law Senate Bills 1168 and 1319, and Assembly Bill 1739, collectively known as the Sustainable Groundwater Management Act ("SGMA"), codified in certain provisions of the California Government Code, including commencing with Section 65350.5, and codified in Part 2.74 of Division 6 of the California Water Code, commencing with Section 10720, and amending other provisions of the California Government Code and California Water Code; and

WHEREAS, SGMA went into effect on January 1, 2015; and

WHEREAS, various clarifying amendments to SGMA were signed into law in 2015, including Senate Bills 13 and 226, and Assembly Bills 617 and 939, which were codified in part in California Water Code Section 10723.6(a), authorizing a combination of local agencies to form a Groundwater Sustainability Agency ("GSA") pursuant to a joint powers agreement, a memorandum of agreement, or other legal agreement; and, California Water Code Section 10723.6(b), authorizing water corporations regulated by the California Public Utilities Commission and mutual water companies to participate in a GSA through a memorandum of agreement or other legal agreement; and

WHEREAS, the legislative intent and effect of SGMA, as set forth in California Water Code Section 10720.1, includes the following: (1) to provide for the sustainable management of groundwater basins; (2) to enhance local management of groundwater consistent with rights to use or store groundwater and Section 2 of Article X Water of the California Constitution, and to preserve the security of water rights in the state to the greatest extent possible consistent with the sustainable management of groundwater; (3) to establish minimum standards for sustainable groundwater management; (4) to provide local groundwater agencies with the authority and the technical and financial assistance necessary to sustainably manage groundwater; (5) to avoid or minimize subsidence; (6) to improve data collection and understanding about groundwater; (7) to increase groundwater storage and remove impediments to recharge; (8) to manage groundwater basins through the actions of local governmental agencies to the greatest extent feasible, while minimizing state intervention to only when necessary to ensure that local agencies manage groundwater in a sustainable manner; and (9) to provide a more efficient and cost-effective groundwater adjudication process that protects water rights, ensures due process, prevents unnecessary delay, and furthers the objectives of SGMA; and

WHEREAS, SGMA affords GSAs specific powers to manage groundwater in addition to existing legal authorities, which powers may be used to provide the maximum degree of local control and flexibility consistent with the sustainability goals of SGMA; and

WHEREAS, SGMA includes several un-codified findings by the California Legislature,

including the determination that the people of the state have a primary interest in the protection, management, and reasonable beneficial use of the water resources of the state, both surface and underground, and that the integrated management of the state's water resources is essential to meeting its water management goals; and

WHEREAS, the Yucaipa Subbasin (“SUBBASIN”) is identified by the California Department of Water Resources Bulletin 118 as Sub-basin No. 8-002.07 of the Upper Santa Ana Valley Groundwater Basin, and is designated by the California Department of Water Resources (“DWR”) as a high-priority basin; and

WHEREAS, California Water Code Section 10720.7 requires the SUBBASIN, as a high-priority basin that is not designated by DWR as being subject to critical conditions of overdraft, to be managed by a Groundwater Sustainability Plan ("GSP") by January 31, 2022; and

WHEREAS, South Mesa Water Company ("SOUTH MESA"), South Mountain Water Company ("SOUTH MOUNTAIN"), Western Heights Water Company ("WHWC") and Yucaipa Valley Water District ("YVWD"), herein collectively referred to as the “WATER PURVEYORS"; and the City of Calimesa (“CALIMESA”), the City of Redlands ("REDLANDS") and the City of Yucaipa ("YUCAIPA"), herein collectively referred to as the MUNICIPALITIES"; and the San Bernardino Valley Municipal Water District ("SBVMWD") and the San Gorgonio Pass Water Agency ("SGPWA"), herein collectively referred to as the "REGIONALS”, entered into a Memorandum of Agreement (“MOA”) in June 2017 to form a GSA called the Yucaipa Groundwater Sustainability Agency (“YUCAIPA GSA”); and

WHEREAS, each of the above-described entities is individually referred to as a "PARTY" and are collectively referred to as the "PARTIES". SOUTH MESA, SOUTH MOUNTAIN and WHWC are collectively referred to as the "MUTUALS"; and, the PARTIES other than the MUTUALS are collectively referred to as the "LOCAL AGENCIES;” and

WHEREAS, The County of Riverside ("RIVERSIDE") and the County of San Bernardino ("SAN BERNARDINO"), collectively referred to as the "COUNTIES," are stakeholders but not PARTIES in the YUCAIPA GSA; and

WHEREAS, CALIMESA submitted a written Notice of Withdrawal dated November 19, 2018 and the Yucaipa GSA subsequently acknowledged the withdrawal of CALIMESA from the Yucaipa GSA at the January 23, 2019 YUCAIPA GSA Board meeting; and

WHEREAS, the LOCAL AGENCIES have water supply, water management, and/or land use responsibilities for their respective jurisdictional areas overlying the SUBBASIN and are local agencies as defined by SGMA in California Water Code Section 10721(n), and thus each is authorized by SGMA to form a GSA; and

WHEREAS, the LOCAL AGENCIES' individually have jurisdictional and/or service areas within and their collective jurisdictional areas and/or service areas that cover the entirety of the SUBBASIN, with no gaps in coverage; and

WHEREAS, the WATER PURVEYORS, including the MUTUALS, produce

groundwater and provide water service within the SUBBASIN; and

WHEREAS, the REGIONALS are State Water Contractors, and have the rights and duties of such, including for the delivery of State Water Project Water within the SUBBASIN; and

WHEREAS, the PARTIES have worked with local stakeholders and interested parties in the SUBBASIN that are not PARTIES in YUCAIPA GSA to carry out the policy, purposes, and requirements of SGMA in the SUBBASIN; and

WHEREAS, the YUCAIPA GSA has developed a GSP for the SUBBASIN as required by SGMA; and

WHEREAS, the YUCAIPA GSA has provided the public notices required by California Water Code section 10727.8, including a Public Outreach and Engagement Plan, informing the public on how to participate in the development of the GSP; and

WHEREAS, the YUCAIPA GSA has held numerous public meetings where elements of the GSP for the SUBBASIN have been presented and discussed, and where the general public has been provided the opportunity to comment on the various elements of the GSP; and

WHEREAS, due to the COVID-19 pandemic and Executive Order N-29-20 that suspended the requirement to hold public meetings at physical locations, the YUCAIPA GSA held online public meetings and provided details in the public notices informing the public how to participate in the online meetings; and

WHEREAS, the YUCAIPA GSA has received written public comments on the various elements of the GSP, which have been reviewed and commented on, where and as appropriate, as part of the GSP; and

WHEREAS, the YUCAIPA GSA announced a community engagement meeting (i.e., public hearing) for November 16, 2021, as required by California Water Code section 10728.4 for the purposes of considering public comments before adopting a GSP for the SUBBASIN; and

WHEREAS, the GSP for the SUBBASIN contains all the elements required by California Water Code sections 10727.2 and 10727.4; and

WHEREAS, after its filing with DWR, the GSP for the SUBBASIN will be subject to a further public review period, and will undergo review by DWR for a period not exceeding two years; and

WHEREAS, the GSP for the SUBBASIN will be subject to further updating during the DWR review period, and periodically thereafter via annual reports due every April 1 and evaluation reports at least every 5 years or when the GSP is amended; and

WHEREAS, it is now necessary and appropriate for the City Council to consider the

adoption of the GSP for the sustainable management of the SUBBASIN, and authorizes the adoption of the GSP for the sustainable management of the SUBBASIN and directs the YUCAIPA GSA to file the GSP with DWR no later than the date required by SGMA;

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF REDLANDS AS FOLLOWS:

Section 1. The above Recitals are true and correct.

Section 2. The GSP for the SUBBASIN is approved.

Section 3. The City Council of the City of Redlands hereby authorizes the adoption of the GSP for the SUBBASIN and directs the YUCAIPA GSA to file the GSP with the DWR no later than January 31, 2022, as required by SGMA.

Section 4. The City Manager and City Attorney are hereby authorized and directed to take such other and further actions as may be necessary or appropriate to implement the intent and purposes of this resolution.

ADOPTED, SIGNED AND APPROVED this 18th day of January, 2022.

_____
Paul T. Barich, Mayor

ATTEST:

_____
Jeanne Donaldson, City Clerk

I, Jeanne Donaldson, City Clerk of the City of Redlands, do hereby certify that the foregoing Resolution was duly adopted by the City Council at a regular meeting thereof held on the 18th day of January, 2022, by the following vote:

AYES:
NOES:
ABSENT:
ABSTAINED:

_____
Jeanne Donaldson, City Clerk

RESOLUTION NO. 7735

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF REDLANDS APPROVING A MEMORANDUM OF AGREEMENT TO JOINTLY FORM A GROUNDWATER SUSTAINABILITY AGENCY FOR THE YUCAIPA SUB-BASIN NO. 8-02.07 AND TO COORDINATE WITH OTHER GROUNDWATER SUSTAINABILITY AGENCIES

WHEREAS, in September 2014, Governor Jerry Brown signed into law the Sustainable Groundwater Management Act (SGMA), which went into effect on January 1, 2015; and

WHEREAS, the legislative intent of the SGMA is to, among other goals, provide for sustainable management of groundwater basins and sub-basins defined by the California Department of Water Resources (DWR), to enhance local management of groundwater, to establish minimum standards for sustainable groundwater management, and to provide specified local agencies with the authority and technical and financial assistance necessary to sustainably manage groundwater; and

WHEREAS, Water Code Section 10723(a) authorizes a local agency with water supply, water management, or local land use responsibilities, or a combination of local agencies, overlaying a groundwater basin to elect to become a Groundwater Sustainability Agency (GSA) under the SGMA; and

WHEREAS, the City of Redlands (City), as depicted in the map attached hereto is Exhibit "A", overlies portions of the basin, and is identified by the California DWR Bulletin 118 as Sub-basin No. 8-02.07 of the Upper Santa Ana Valley Groundwater Basin; and

WHEREAS, in accordance with Water Code Section 10723(b) and Government Code Section 6066, a notice of public hearing was published in a newspaper of general circulation regarding the City's intent to become a GSA for the Yucaipa Sub-basin, as described in the notice; and

WHEREAS, becoming a GSA supports the City's ongoing efforts to use local water supplies in a way that increases its availability for future generations within the region and to ensure groundwater and drinking water sustainability within the area served;

NOW, THEREFORE, BE IT RESOLVED by the City Council of the City of Redlands as follows:

Section 1. The City hereby elects to adopt the MOA for the geographical area depicted on the map in Exhibit "A," attached to this Resolution.

Section 2. City staff is hereby directed to submit to DWR by June 30th, 2017, the MOA attached to this Resolution as Exhibit "B."

Section 3. This City further determines that approval of this Resolution is exempt from review under California Environmental Quality Act ("CEQA") pursuant to CEQA Guidelines Section 15061(b) which provides that CEQA applies only to projects which have the potential for causing a significant effect on the environment. This City Council finds with certainty that

there is no possibility the approval of this Resolution may have a significant effect on the environment.

Section 4. This Resolution shall be effective upon its adoption.

ADOPTED, SIGNED AND APPROVED this 6th day of June, 2017.

Paul W. Foster, Mayor

ATTEST:

Jeanne Donaldson, City Clerk

I, Jeanne Donaldson, City Clerk of the City of Redlands, hereby certify that the foregoing Resolution was duly adopted by the City Council at a regular meeting thereof, held on the 6th day of June, 2017, by the following vote:

AYES:	Councilmembers Harrison, Gilbreath, Barich, Tejeda; Mayor Foster
NOES:	None
ABSTAIN:	None
ABSENT:	None

Jeanne Donaldson, City Clerk

Exhibit A

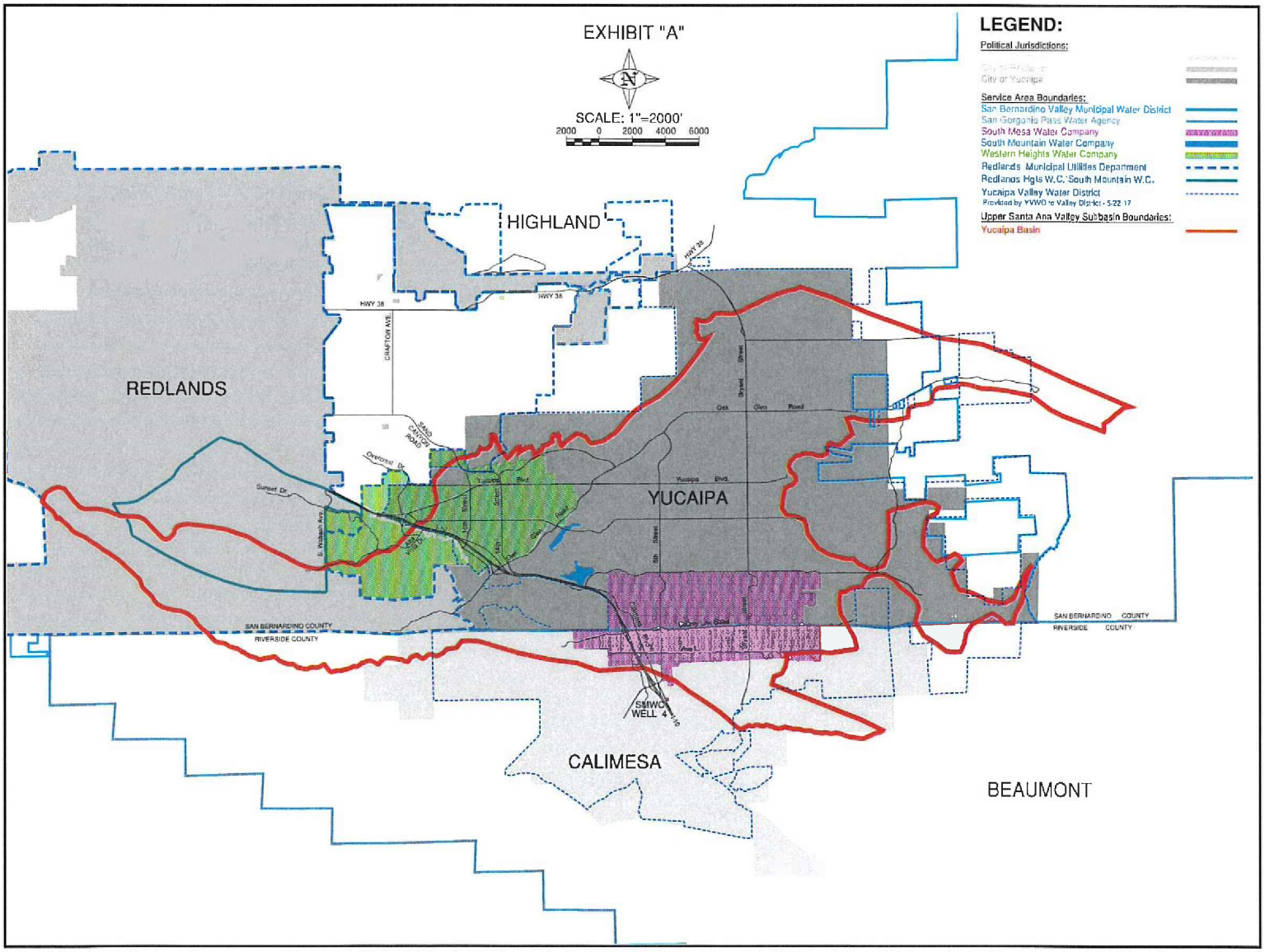

EXHIBIT "A"
SCALE: 1"=2000'
2000 0 2000 4000 6000
LEGEND:
Political Jurisdictions:
City of Redlands
City of Yucaipa
Service Area Boundaries:
San Bernardino Valley Municipal Water District
San Gorgonio Pass Water Agency
South Mesa Water Company
South Mountain Water Company
Western Heights Water Company
Redlands Municipal Utilities Department
Redlands Hgts W.C./South Mountain W.C.
Yucaipa Valley Water District
Provided by YVWD to Valley District - 5-22-17
Upper Santa Ana Valley Subbasin Boundaries:
Yucaipa Basin
HIGHLAND
REDLANDS
YUCAIPA
CALIMESA
BEAUMONT
HWY 38
CRAFTON AVE
SAN BERNARDINO COUNTY
RIVERSIDE COUNTY
SMWC WELL 4

Exhibit B to Resolution No. 7735

Memorandum of Agreement to Form a
Groundwater Sustainability Agency for
the Yucaipa Sub-Basin (Sub-basin No. 8-02.07)

MEMORANDUM OF AGREEMENT TO FORM A GROUNDWATER SUSTAINABILITY AGENCY FOR THE YUCAIPA SUB-BASIN (Sub-basin No. 8-02.07)

This 2017 Memorandum of Agreement ("MOA") is entered into by and among: South Mesa Water Company ("SOUTH MESA"), South Mountain Water Company ("SOUTH MOUNTAIN"), Western Heights Water Company ("WESTERN HEIGHTS") and Yucaipa Valley Water District ("YVWD"), herein collectively referred to as the "WATER PURVEYORS"; and, the City of Calimesa ("CALIMESA"), the City of Redlands ("REDLANDS") and the City of Yucaipa ("YUCAIPA"), herein collectively referred to as the "MUNICIPALITIES"; and, the San Bernardino Valley Municipal Water District ("SAN BERNARDINO VALLEY MUNICIPAL") and the San Gorgonio Pass Water Agency ("SAN GORGONIO"), herein collectively referred to as the "REGIONALS." The MUNICIPALITIES are sometimes herein collectively referred to as the "LAND USE AGENCIES." Each of the above-described entities is individually referred to as a "Party" and are collectively referred to as the "Parties". For purposes of this MOA, SOUTH MESA, SOUTH MOUNTAIN and WESTERN HEIGHTS are collectively referred to as the "MUTUALS"; and, the Parties other than the MUTUALS are collectively referred to as the "LOCAL AGENCIES."

Pursuant to the Sustainable Groundwater Management Act ("SGMA") and as further set forth herein, the purpose of this MOA is to form a Groundwater Sustainability Agency ("GSA") for the entire Yucaipa Sub-basin (Basin or Sub-Basin No. 8-02.07), in order to preserve local management and control of the Basin as set forth under SGMA.

The County of Riverside ("RIVERSIDE") and the County of San Bernardino ("SAN BERNARDINO"), collectively "COUNTIES," shall be considered "Stakeholders" but not Parties to this MOA.

Recitals

WHEREAS, on September 16, 2014, Governor Jerry Brown signed into law Senate Bills 1168 and 1319, and Assembly Bill 1739, collectively known as the Sustainable Groundwater Management Act ("SGMA"), codified in certain provisions of the California Government Code, including commencing with Section 65350.5, and codified in Part 2.74 of Division 6 of the California *Water Code*, commencing with Section 10720, and amending other provisions of the California *Government Code* and California *Water Code*; and

WHEREAS, SGMA went into effect on January 1, 2015; and,

WHEREAS, various clarifying amendments to SGMA were signed into law in 2015, including Senate Bills 13 and 226, and Assembly Bills 617 and 939, which were codified in part in California *Water Code* Section 10723.6(a), authorizing a combination of local agencies to form a GSA pursuant to a joint powers agreement, a memorandum of agreement, or other legal agreement; and, California *Water Code* Section 10723.6(b), authorizing water corporations regulated by the California Public Utilities Commission and mutual water companies to participate in a GSA through a memorandum of agreement or other legal agreement; and

WHEREAS, the legislative intent and effect of SGMA, as set forth in California *Water Code* Section 10720.1, includes the following: (1) to provide for the sustainable management of groundwater basins; (2) to enhance local management of groundwater consistent with rights to use or store groundwater and Section 2 of Article X of the California Constitution, and to preserve the security of water rights in the state to the greatest extent possible consistent with the sustainable management of groundwater; (3) to establish minimum standards for sustainable groundwater management; (4) to provide local groundwater agencies with the authority and the technical and financial assistance necessary to sustainably manage groundwater; (5) to avoid or minimize subsidence; (6) to improve data collection and understanding about groundwater; (7) to increase groundwater storage and remove impediments to recharge; (8) to manage groundwater basins through the actions of local governmental agencies to the greatest extent feasible, while minimizing state intervention to only when necessary to ensure that local agencies manage groundwater in a sustainable manner; and (9) to provide a more efficient and cost-effective groundwater adjudication process that protects water rights, ensures due process, prevents unnecessary delay, and furthers the objectives of SGMA; and,

WHEREAS, SGMA affords GSAs specific powers to manage groundwater in addition to existing legal authorities, which powers may be used to provide the maximum degree of local control and flexibility consistent with the sustainability goals of SGMA; and,

WHEREAS, SGMA includes several un-codified findings by the California Legislature, including the determination that the people of the state have a primary interest in the protection, management, and reasonable beneficial use of the water resources of the state, both surface and underground, and that the integrated management of the state's water resources is essential to meeting its water management goals; and,

WHEREAS, the Basin, as depicted in **Exhibit A** to this MOA, is identified by the California Department of Water Resources Bulletin 118 as Sub-basin No. 8-02.07 of the Upper Santa Ana Valley Groundwater Basin, and is designated by DWR as medium-priority; and,

WHEREAS, California *Water Code* Section 10720.7 requires the Basin, as a medium-priority basin that is not designated by DWR as being subject to critical conditions of overdraft, to be managed by a Groundwater Sustainability Plan ("GSP") or coordinated GSPs by January 31, 2022; and,

WHEREAS, in order to avoid designation as a probationary basin and become subject to direct intervention and management by the State Water Board, California *Water Code* Section 10735.2 requires that, by June 30, 2017 a collection of local agencies must form a GSA or prepare agreements to develop one or more GSPs that will collectively serve as a GSP for the entire Basin, in the event that a local agency has not decided to become a GSA that intends to develop a GSP for the entire Basin; and,

WHEREAS, the LOCAL AGENCIES have water supply, water management, and/or land use responsibilities for their respective jurisdictional areas overlying the Basin and are local agencies as defined by SGMA in California *Water Code* Section 10721(n), and thus each is authorized by SGMA to become or form a GSA; and,

WHEREAS, the LOCAL AGENCIES' individually have jurisdictional and/or service areas within and their collective jurisdictional areas and/or service areas cover the entirety of the Basin, with no gaps in coverage; and,

WHEREAS, the WATER PURVEYORS, including the MUTUALS, produce groundwater and provide water service within the Basin, and it is the Parties' shared intent to provide for management-level participation by the MUTUALS in the GSA to the maximum extent allowed by law without limiting any powers afforded to a GSA under SGMA; and,

WHEREAS, the REGIONALS are State Water Contractors, and have the rights and duties of such, including for the delivery of State Water Project Water within the Basin; and,

WHEREAS, in accordance with the terms of this MOA, and in furtherance of the shared intent of the Parties to maximize funding opportunities for the Basin and avoid potential intervention in the Basin by the State Water Board, the Parties agree that the YUCAIPA-GSA formed by this MOA will cover the entire Basin; and,

WHEREAS, the Parties mutually desire and intend to work with local stakeholders and interested parties in the Basin that are not Parties to this MOA, to carry out the policy, purposes, and requirements of SGMA in the Basin.

Agreement

NOW, THEREFORE, in consideration of the promises, terms, conditions, and covenants contained herein, it is mutually understood and agreed as follows:

I. **Incorporation of Recitals.** The Recitals stated above are incorporated herein by reference.

II. **Purposes.** The purposes of this MOA is to form the YUCAIPA-GSA for the Basin as specified herein pursuant to applicable provisions and requirements of SGMA, including but not limited to California *Water Code* Sections 10723 and 10723.6.

III. **Approval of MOA and Formation of the YUCAIPA-GSA.** Approval of this MOA and formation of the YUCAIPA-GSA shall be accomplished by the LOCAL AGENCIES each holding its own noticed public hearing pursuant to California *Water Code* Section 10723(b) and California *Government Code* Section 6066 and at such hearing will consider approval of a Resolution by its governing board to enter this MOA and jointly form the YUCAIPA-GSA as specified in this MOA. Approval of this MOA by the MUTUALS shall be accomplished through their respective governing boards' duly authorized procedures.

IV. **Definitions.** The following terms, whether used in the singular or plural, and when used with initial capitalization, shall have the meanings specified herein. The Parties agree that any definitions set forth herein are intended to be consistent with SGMA, and in the event of any discrepancy between a defined term in this MOA and a defined term in SGMA, the terms of SGMA shall control.

A. "Basin" refers to the Yucaipa Sub-basin, designated by the California Department of Water Resources Bulletin 118 as Sub-basin No. 8-02.07, as depicted in **Exhibit A** to this MOA.

B. "DWR" means the California Department of Water Resources.

C. "GSA" means a Groundwater Sustainability Agency, as defined by SGMA.

D. "GSP" means a Groundwater Sustainability Plan, as defined by SGMA.

E. "Memorandum of Agreement" or "MOA" refers to this Memorandum of Agreement.

F. "SGMA" refers to the Sustainable Groundwater Management Act, of 2014, as amended.

G. "State Water Board" means the California State Water Resources Control Board.

H. "YUCAIPA-GSA" refers to the Yucaipa Sub-basin GSA formed under this MOA.

V. Coordination and Cooperation

A. Continued Cooperation. The Parties to this MOA will continue to meet, confer, coordinate, and collaborate to discuss and develop technical, managerial, financial, and other criteria and procedures for the preparation, governance, and implementation of a GSP or coordinated GSPs in the Basin and to carry out the policy, purposes, and requirements of SGMA in the Basin.

B. Points of Contact. Each Party shall designate a principal contact person for that Party, who may be changed from time to time at the sole discretion of the designating Party. The principal contact person for each Party shall be responsible for coordinating with the principal contact persons for the other Parties in scheduling meetings and other activities under this MOA.

C. Voting Methodology. The voting structure for matters pertaining to the establishment and implementation of the administrative components of the YUCAIPA-GSA shall be by simple majority (51%) of the voting Parties, wherein each WATER PURVEYOR, MUNICIPALITY and REGIONAL holds a single vote.

VI. Roles and Responsibilities

A. The YUCAIPA-GSA shall be controlled by a Governing Board comprised of one representative of each of the Parties to this MOA.

B. The Parties agree to jointly establish their specific roles and responsibilities for implementing this MOA, including through the adoption of organizational documents, management policies, rules and procedures.

C. The Parties agree to jointly develop and implement a GSP or coordinated GSPs for the Basin in accordance with SGMA.

D. The Parties agree to work in good faith and coordinate all activities to carry out the purposes of this MOA in implementing the policy, purposes, and requirements of SGMA in the Basin, including continuing to meet, confer, coordinate, and collaborate to discuss and develop governance, management, technical, financial, and other matters, including respective roles and responsibilities for activities such as, but not limited to, the following: modeling;

metering; monitoring; hiring consultants; developing and maintaining list of interested persons under California *Water Code* Section 10723.4; budgeting; and other initial tasks as determined by the Parties.

E. The LOCAL AGENCIES shall coordinate with each other to cause all applicable noticing and submission of required information to DWR regarding formation of the YUCAIPA-GSA.

VII. Funding and Budgeting. The Parties shall work together to identify the costs, funding needs and funding sources for the administration of the YUCAIPA-GSA and the development and implementation of the GSP. To the extent not otherwise funded in accordance with or inconsistent with SGMA's provisions regarding GSA funding, the PURVEYORS shall collectively bear seventy-five percent (75%) and the MUNICIPALITIES and REGIONALS shall collectively bear twenty-five percent (25%) of the cost of the creation and administration of the YUCAIPA-GSA; and within each group, the Parties shall equally share in the costs of the creation and administration of the YUCAIPA-GSA. Nothing in this provision shall obligate any party to bear any portion of the attorneys' fees and legal costs of another Party.

VIII. Stakeholders. The initially designated stakeholders are the COUNTIES. The Parties agree to work together in ensuring public outreach and involvement of the public and other interested stakeholders throughout the SGMA process, including but not limited to all beneficial uses and users of groundwater as provided in SGMA Section 10723.2. Stakeholders have no voting rights under Section V.C. and no cost sharing obligations under Section VII of this MOA.

IX. Term, Termination, and Withdrawal.

A. Term. This MOA shall continue and remain in effect unless and until terminated by the unanimous written consent of the Parties, or as otherwise provided in this MOA or as authorized by law.

B. Withdrawal. After the YUCAIPA-GSA is officially established as the GSA for the Basin, any Party may decide, in its sole discretion, to withdraw from this MOA by providing ninety (90) days written notice to the other Parties. A Party that withdraws from this MOA shall remain obligated to pay its share of costs and expenses incurred or accrued under this MOA and any related cost-sharing agreement or arrangement up to the date the Party provides its notice of withdrawal as provided herein. Withdrawal by a Party shall not cause or require the termination of this MOA or the existence of the YUCAIPA-GSA with respect to the non-withdrawing Parties. In the event of withdrawal by one of the LOCAL AGENCIES, the Parties shall meet and confer during the 90-day notice period regarding: (i) whether the withdrawing Party wishes to seek GSA status for a portion of the Basin underlying the jurisdictional area or service area of the withdrawing Party; (ii) whether, as a result of the withdrawal, a co-GSA management or other arrangement with the withdrawing Party is necessary to satisfy the requirements of SGMA; and (iii) any other issues and steps that are necessary to avoid triggering probationary status of the Basin and State Water Board intervention. Any resolution of issues pertaining to withdrawal and any

other GSA issues shall be undertaken in a manner that satisfies all requirements of SGMA and DWR, including any requirement to file new GSA notices.

X. Notice Provisions

All notices required by this MOA shall be made in writing and delivered to the respective representatives of the Parties at their respective addresses as follows:

PARTIES:

PURVEYORS:

South Mesa Water Company
391 West Avenue L
Calimesa, California 92320
Attn: Dave Armstrong, General Manager
Email: smwc@verizon.net

South Mountain Water Company
35 Cajon Street
Redlands, California 92373
Attn: Cecilia Griego, Water Resources Specialist
Email: cgriego@cityofredlands.org

Western Heights Water Company
32352 Avenue D
Yucaipa, California 92399
Attn: William Brown, General Manager
Email: w.brown@westernheightswater.org

Yucaipa Valley Water District
12770 Second Street
Yucaipa, California 92399
Attn: Joseph, Zoba, General Manager
Email: jzoba@yvwd.dst.ca.us

MUNICIPALS:

City of Calimesa
908 Park Avenue
Calimesa, California 92399
Attn: Bonnie Johnson, City Manager
Email: bjohnson@cityofcalimesa.net

City of Redlands
35 Cajon Street
Redlands, California 92373
Attn: Chris Diggs, Municipal Utilities and Engineering Director
Email: cdiggs@cityofredlands.org

City of Yucaipa
34272 Yucaipa Boulevard
Yucaipa, California 92399
Attn: Ray Casey, City Manager
Email: rcasey@yucaipa.org

REGIONALS:

San Bernardino Valley Municipal Water District
380 E. Vanderbilt Way
San Bernardino, CA 92408
Attn: Douglas Headrick, General Manager & Chief Engineer
Email: douglash@sbvmwd.com

San Gorgonio Pass Water Agency
1210 Beaumont Avenue
Beaumont, CA 92223
Attn: Jeff Davis, General Manager and Chief Engineer
Email: jdavis@sgpwa.com

STAKEHOLDERS:

COUNTIES:

County of Riverside
4080 Lemon Street
Riverside, CA 92501
Attn: Steve Horn, Senior Management Analyst, Executive Office
Email: shorn@rceo.org

County of San Bernardino
385 N. Arrowhead Avenue
San Bernardino, CA 92415-0120
Attn: Bob Page, Principal Management Analyst, Special Projects
Email: bpage@sbcounty.gov

Any Party or Stakeholder may change the address to which notices are to be given under this MOA by providing all other Parties with written notice of such change at least fifteen (15) calendar days prior to the effective date of the change. All notices shall be effective upon receipt and shall be deemed received upon confirmed personal service, confirmed facsimile delivery, confirmed courier service, or on the fifth (5th) calendar day following deposit of the notice in registered first class mail.

XI. General Terms

A. Amendments. Amendments to this MOA require the unanimous written consent of all Parties and approval by the Parties' respective governing boards.

B. Successors and Assigns. The terms of this MOA shall be binding upon and inure to the benefit of the successors-in-interest and assigns of each Party; provided, however, that no transfer or assignment shall be effective until approved by the

Parties in accordance with the provisions of Section V.C. of this MOA. Once succession and/or assignment has been approved, a former Party shall have no further rights or obligations under this MOA.

C. Waiver. No waiver of any provision of this MOA by any Party shall be construed as a further or continuing waiver of such provision or any other provision of this MOA by the waiving Party or any other Party.

D. Authorized Representatives. Each person executing this MOA on behalf of a Party hereto affirmatively represents that such person has the requisite authority to sign this MOA on behalf of the respective Party.

E. Exemption from CEQA. The Parties recognize and agree that, pursuant to SGMA Section 10728.6, neither this MOA nor the preparation or adoption of a GSP constitute a "project" or approval of a project under the California Environmental Quality Act (CEQA) or the State CEQA Guidelines, and therefore this MOA is expressly exempt from CEQA review.

F. Governing Law and Venue. This MOA shall be governed by and construed in accordance with the laws of the State of California. Any suit, action, or proceeding brought under the scope of this MOA shall be brought and maintained to the extent allowed by law in the County of San Bernardino, California.

G. Attorney's Fees, Costs, and Expenses. In the event of a dispute among any or all of the Parties arising under this MOA, each Party shall assume and be responsible for its own attorney's fees, costs, and expenses.

H. Entire Agreement/Integration. This MOA constitutes the entire agreement among the Parties regarding the specific provisions of this MOA, and the Parties hereto have made no agreements, representations or warranties relating to the specific provisions of this MOA that are not set forth herein.

I. Construction and Interpretation. The Parties agree and acknowledge that this MOA has been developed through a negotiated process among the Parties, and that each Party has had a full and fair opportunity to review the terms of this MOA with the advice of its own legal counsel and to revise the terms of this MOA, such that each Party constitutes a drafting Party to this MOA. Consequently, the Parties understand and agree that no rule of construction shall be applied to resolve any ambiguities against any particular Party as the drafting Party in construing or interpreting this MOA.

J. Force Majeure. No Party shall be liable for the consequences of any unforeseeable force majeure event that (1) is beyond its reasonable control, (2) is not caused by the fault or negligence of such Party, (3) causes such Party to be unable to perform its obligations under this MOA, and (4) cannot be overcome by the exercise of due diligence. In the event of the occurrence of a force majeure event, the Party unable to perform shall promptly notify the other Parties in writing to the extent practicable. It shall further pursue its best efforts to resume its obligations under this MOA as quickly as possible and shall suspend performance only for such period of time as is necessary as a result of the force majeure event.

K. Execution in Counterparts. This MOA may be executed in counterparts, each of which shall be deemed an original and all of which when taken together shall constitute one and the same instrument.

L. No Third Party Beneficiaries. This MOA is not intended, and will not be construed, to confer a benefit or create any right on a third party or the power or right of any third party to bring an action to enforce any of the terms of this MOA.

M. Timing and Captions. Any provision of this MOA referencing a time, number of days, or period for performance shall be measured in calendar days. The captions of the various articles, sections, and paragraphs of this MOA are for convenience and ease of reference only, and do not define, limit, augment, or describe the scope, content, terms, or intent of this MOA.

IN WITNESS WHEREOF, the Parties hereto have approved and executed this MOA as of the respective dates specified in the adopting Resolution of each Party as provided above in Article III of this MOA.

[Signature Pages Follow]

Water Purveyor Party:

SOUTH MESA WATER COMPANY

By: _____
President, Board of Directors

Attest:

_____
Secretary, Board of Directors

Approved as to form:

_____
Counsel, South Mesa Water Company

Notices for the South Mesa Water Company shall be sent as follows:

Attention: General Manager
391 West Avenue L
Calimesa, California 92320

With copies to:

Michael Duane Davis, Esq.
GRESHAM SAVAGE NOLAN & TILDEN, PC
550 East Hospitality Lane
Third Floor
San Bernardino, CA 92408

Water Purveyor Party:

SOUTH MOUNTAIN WATER COMPANY

By: _____
President, Board of Directors

Attest:

_____
Secretary, Board of Directors

Approved as to form:

_____
Counsel, South Mountain Water Company

Notices for the South Mountain Water Company shall be sent as follows:

Attention: General Manager
35 Cajon Street
Redlands, California 92373

With copies to:

_____
_____
_____
_____

Water Purveyor Party:

WESTERN HEIGHTS WATER COMPANY

By: _____
President, Board of Directors

Attest:

_____
Secretary, Board of Directors

Approved as to form:

_____
Counsel, Western Heights Water Company

Notices for the Western Heights Water Company shall be sent as follows:

Attention: General Manager
32352 Avenue D
Yucaipa, California 92399

With copies to:

Michael Duane Davis, Esq.
GRESHAM SAVAGE NOLAN & TILDEN, PC
550 East Hospitality Lane
Third Floor
San Bernardino, CA 92408

Water Purveyor Party:

YUCAIPA VALLEY WATER DISTRICT

By: _____
President, Board of Directors

Attest:

_____
Secretary, Board of Directors

Approved as to form:

_____
Counsel, Yucaipa Valley Water District

Notices for the Yucaipa Valley Water District shall be sent as follows:

Attention: General Manager
12770 Second Street
Yucaipa, California 92399

With copies to:

_____
_____
_____
_____

Municipality Party:

CITY OF CALIMESA

By: _____
Mayor, City Council

Attest:

_____
Secretary, City Council

Approved as to form:

_____
Counsel, City of Calimesa

Notices for the City of Calimesa shall be sent as follows:

Attention: City Manager
908 Park Avenue
Calimesa, California 92320

With copies to:

_____
_____
_____
_____

Municipality Party:

CITY OF REDLANDS

By: _____
Mayor, City Council

Attest:

_____
Secretary, City Council

Approved as to form:

_____
Counsel, City of Redlands

Notices for the City of Redlands shall be sent as follows:

Attention: City Manager
35 Cajon Street
Redlands, California 92373

With copies to:

_____
_____
_____
_____

Municipality Party:

CITY OF YUCAIPA

By: _____
Mayor, City Council

Attest:

_____
Secretary, City Council

Approved as to form:

_____
Counsel, City of Yucaipa

Notices for the City of Yucaipa shall be sent as follows:

Attention: City Manager
34272 Yucaipa Boulevard
Yucaipa, California 92399

With copies to:

_____
_____
_____
_____

Regional Party:

SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT

By: _____
President, Board of Directors

Attest:

_____
Secretary, Board of Directors

Approved as to form:

_____
Counsel, San Bernardino Valley Municipal Water District

Notices for the San Bernardino Valley Municipal Water District shall be sent as follows:

Attention: General Manager
380 E. Vanderbilt Way
San Bernardino, California 92408

With copies to:

_____
_____
_____
_____

Regional Party:

SAN GORGONIO PASS WATER AGENCY

By: _____
President, Board of Directors

Attest:

_____
Secretary, Board of Directors

Approved as to form:

_____
Counsel, San Gorgonio Pass Water Agency

Notices for the San Gorgonio Pass Water Agency shall be sent as follows:

Attention: General Manager
1210 Beaumont Avenue
Beaumont, California 92223

With copies to:

_____
_____
_____
_____

Stakeholder:

COUNTY OF RIVERSIDE

By: _____

Chair, Board of Supervisors

Attest:

_____

Secretary, Board of Supervisors

Approved as to form:

_____

Counsel, County of Riverside

Notices for the County of Riverside shall be sent as follows:

Attention: General Manager
4080 Lemon Street
Riverside, California 92501

With copies to:

_____
_____
_____
_____

Stakeholder:

COUNTY OF SAN BERNARDINO

By: _____
Chair, Board of Supervisors

Attest:

_____
Secretary, Board of Supervisors

Approved as to form:

_____
Counsel, County of San Bernardino

Notices for the County of San Bernardino shall be sent as follows:

Attention: General Manager
385 N. Arrowhead Avenue
San Bernardino, California 92415-0120

With copies to:

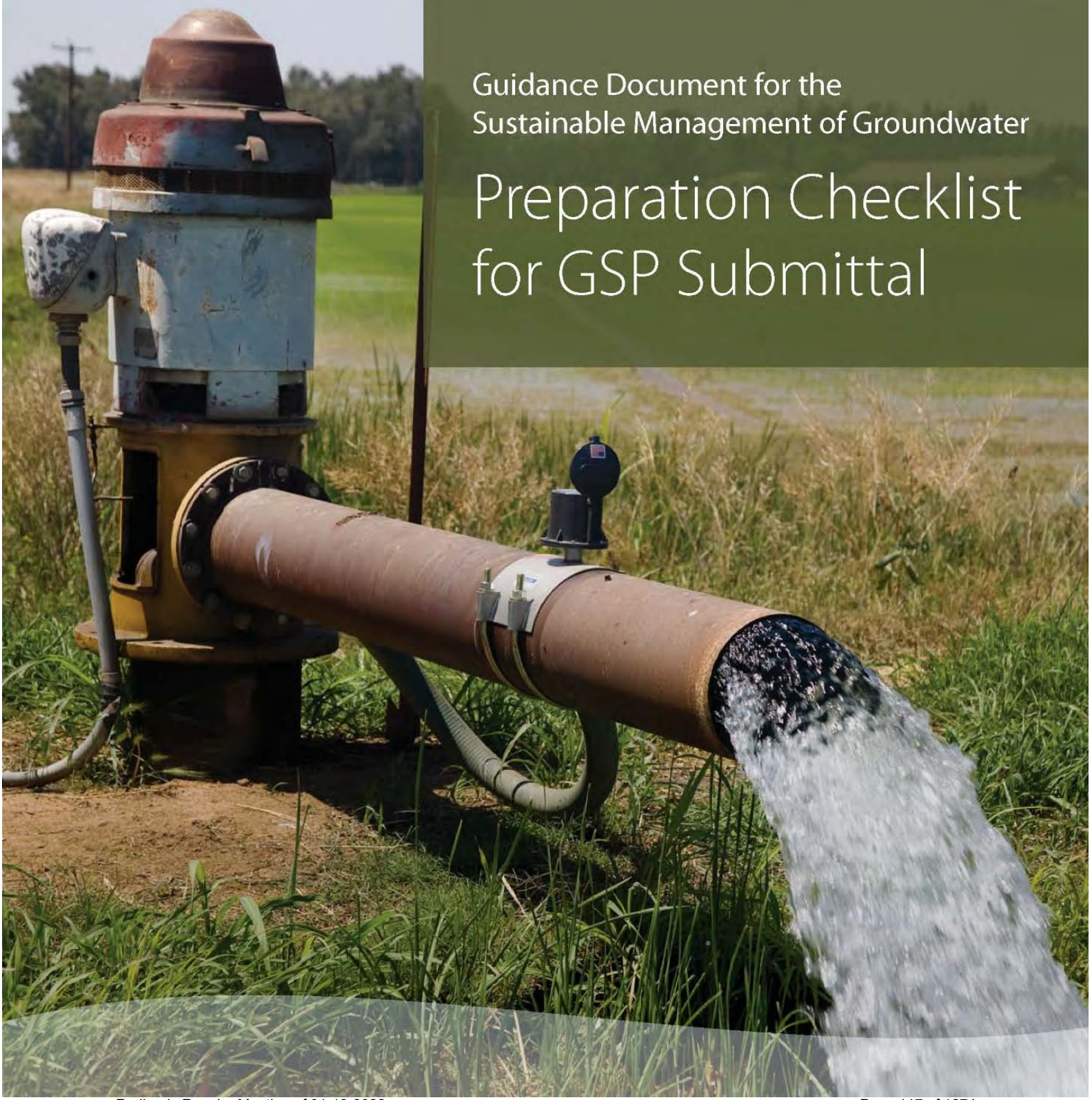
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Appendix 1-A

Preparation Checklist for GSP Submittal

California Department of Water Resources
Sustainable Groundwater Management Program

December 2016



Guidance Document for the Sustainable Management of Groundwater

Preparation Checklist for GSP Submittal

Guidance Document for the Sustainable Management of Groundwater

Preparation Checklist for GSP Submittal

December 2016

The objective of this Guidance Document is to provide Groundwater Sustainability Agencies (GSAs) and other interested stakeholders a checklist of Groundwater Sustainability Plan (GSP) content requirements for the purpose of verifying a GSP is complete and is ready for submission to DWR. Please note that if multiple GSAs develop multiple GSPs for a basin, the coordinated submission of those GSPs shall not occur until the entire basin is covered by GSPs.

The Preparation Checklist for GSP Submittal is only intended to provide a guide to GSAs and other stakeholders. This guidance is optional, since the content of this Guidance Document does not create any new requirements or obligations for the GSA or other stakeholders.

Guidance documents are not a substitute for the GSP Emergency Regulations (GSP Regulations) or the Sustainable Groundwater Management Act (SGMA). Those GSAs submitting a GSP are strongly encouraged to read the GSP Regulations and SGMA. In addition, using this Guidance Document to develop a GSP using does not equate to an approval determination by DWR.

Context with GSP Regulations

The Preparation Checklist for GSP Submittal can be used by GSAs in conjunction with the GSP Annotated Outline Guidance Document as a method to develop a GSP consistent with the requirements of the GSP Regulations and SGMA. The detailed requirements of a GSP may be found in the GSP Regulations, primarily in Article 5 – Plan Contents, and in SGMA, primarily in Chapter 6 beginning with California Water Code (CWC) Section 10727. The checklist includes references to applicable GSP Regulations sections and CWC sections, as well as a brief description of the required GSP information. The checklist also contains a column for GSAs to record the page number, or section of the GSP, where the information for that particular requirement is found. The preparation checklist may also be included in the GSP.

Table 1 contains the **Preparation Checklist for GSP Submittal**.

California Department of Water Resources
Sustainable Groundwater Management Program
1416 Ninth Street
P.O. Box 942836
Sacramento, CA 94236-0001
www.water.ca.gov/groundwater

Table 1. Preparation Checklist for GSP Submittal

GSP Regulations Section	Water Code Section	Requirement	Description	Section(s) or Page Number(s) in the GSP
Article 3. Technical and Reporting Standards				
352.2		Monitoring Protocols	• Monitoring protocols adopted by the GSA for data collection and management • Monitoring protocols that are designed to detect changes in groundwater levels, groundwater quality, inelastic surface subsidence for basins for which subsidence has been identified as a potential problem, and flow and quality of surface water that directly affect groundwater levels or quality or are caused by groundwater extraction in the basin	Section 3.6.4
Article 5. Plan Contents, Subarticle 1. Administrative Information				
354.4		General Information	• Executive Summary • List of references and technical studies	Section ES
354.6		Agency Information	• GSA mailing address • Organization and management structure • Contact information of Plan Manager • Legal authority of GSA • Estimate of implementation costs	Section 1.2
354.8(a)	10727.2(a)(4)	Map(s)	• Area covered by GSP • Adjudicated areas, other agencies within the basin, and areas covered by an Alternative • Jurisdictional boundaries of federal or State land • Existing land use designations • Density of wells per square mile	Section 1.3

GSP Regulations Section	Water Code Section	Requirement	Description	Section(s) or Page Number(s) in the GSP
Article 5. Plan Contents, Subarticle 1. Administrative Information (Continued)				
354.8(b)		Description of the Plan Area	• Summary of jurisdictional areas and other features	Section 1.3
354.8(c) 354.8(d) 354.8(e)	10727.2(g)	Water Resource Monitoring and Management Programs	• Description of water resources monitoring and management programs • Description of how the monitoring networks of those plans will be incorporated into the GSP • Description of how those plans may limit operational flexibility in the basin • Description of conjunctive use programs	Section 1.5
354.8(f)	10727.2(g)	Land Use Elements or Topic Categories of Applicable General Plans	• Summary of general plans and other land use plans • Description of how implementation of the GSP may change water demands or affect achievement of sustainability and how the GSP addresses those effects • Description of how implementation of the GSP may affect the water supply assumptions of relevant land use plans • Summary of the process for permitting new or replacement wells in the basin • Information regarding the implementation of land use plans outside the basin that could affect the ability of the Agency to achieve sustainable groundwater management	Section 1.6

GSP Regulations Section	Water Code Section	Requirement	Description	Section(s) or Page Number(s) in the GSP
Article 5. Plan Contents, Subarticle 1. Administrative Information (Continued)				
354.8(g)	10727.4	Additional GSP Contents	**Description of Actions related to:** • Control of saline water intrusion • Wellhead protection • Migration of contaminated groundwater • Well abandonment and well destruction program • Replenishment of groundwater extractions • Conjunctive use and underground storage • Well construction policies • Addressing groundwater contamination cleanup, recharge, diversions to storage, conservation, water recycling, conveyance, and extraction projects • Efficient water management practices • Relationships with State and federal regulatory agencies • Review of land use plans and efforts to coordinate with land use planning agencies to assess activities that potentially create risks to groundwater quality or quantity • Impacts on groundwater dependent ecosystems	Sections 1.5, 1.6, 2.7, 2.7.8.1, and 4.2.2.
354.10		Notice and Communication	• Description of beneficial uses and users • List of public meetings • GSP comments and responses • Decision-making process • Public engagement • Encouraging active involvement • Informing the public on GSP implementation progress	Sections 1.7, 1.8 and 1.9

GSP Regulations Section	Water Code Section	Requirement	Description	Section(s) or Page Number(s) in the GSP
Article 5. Plan Contents, Subarticle 2. Basin Setting				
354.14		Hydrogeologic Conceptual Model	• Description of the Hydrogeologic Conceptual Model • Two scaled cross-sections • Map(s) of physical characteristics: topographic information, surficial geology, soil characteristics, surface water bodies, source and point of delivery for imported water supplies	Section 2.6
354.14(c)(4)	10727.2(a)(5)	Map of Recharge Areas	• Map delineating existing recharge areas that substantially contribute to the replenishment of the basin, potential recharge areas, and discharge areas	Section 2.3
	10727.2(d)(4)	Recharge Areas	• Description of how recharge areas identified in the plan substantially contribute to the replenishment of the basin	Section 2.5.4
354.16	10727.2(a)(1) 10727.2(a)(2)	Current and Historical Groundwater Conditions	• Groundwater elevation data • Estimate of groundwater storage • Seawater intrusion conditions • Groundwater quality issues • Land subsidence conditions • Identification of interconnected surface water systems • Identification of groundwater-dependent ecosystems	Section 2.7
354.18	10727.2(a)(3)	Water Budget Information	• Description of inflows, outflows, and change in storage • Quantification of overdraft • Estimate of sustainable yield • Quantification of current, historical, and projected water budgets	Section 2.8
	10727.2(d)(5)	Surface Water Supply	• Description of surface water supply used or available for use for groundwater recharge or in-lieu use	Section 2.8.2.5

GSP Regulations Section	Water Code Section	Requirement	Description	Section(s) or Page Number(s) in the GSP
Article 5. Plan Contents, Subarticle 2. Basin Setting (Continued)				
354.20		Management Areas	• Reason for creation of each management area • Minimum thresholds and measurable objectives for each management area • Level of monitoring and analysis • Explanation of how management of management areas will not cause undesirable results outside the management area • Description of management areas	Sections 2.9, 3.4, and 3.5.
Article 5. Plan Contents, Subarticle 3. Sustainable Management Criteria				
354.24		Sustainability Goal	• Description of the sustainability goal	Section 3.2
354.26		Undesirable Results	• Description of undesirable results • Cause of groundwater conditions that would lead to undesirable results • Criteria used to define undesirable results for each sustainability indicator • Potential effects of undesirable results on beneficial uses and users of groundwater	Section 3.3
354.28	10727.2(d)(1) 10727.2(d)(2)	Minimum Thresholds	• Description of each minimum threshold and how they were established for each sustainability indicator • Relationship for each sustainability indicator • Description of how selection of the minimum threshold may affect beneficial uses and users of groundwater • Standards related to sustainability indicators • How each minimum threshold will be quantitatively measured	Section 3.4

GSP Regulations Section	Water Code Section	Requirement	Description	Section(s) or Page Number(s) in the GSP
Article 5. Plan Contents, Subarticle 3. Sustainable Management Criteria (Continued)				
354.30	10727.2(b)(1) 10727.2(b)(2) 10727.2(d)(1) 10727.2(d)(2)	Measureable Objectives	• Description of establishment of the measureable objectives for each sustainability indicator • Description of how a reasonable margin of safety was established for each measureable objective • Description of a reasonable path to achieve and maintain the sustainability goal, including a description of interim milestones	Sections 3.5 and 4.2
Article 5. Plan Contents, Subarticle 4. Monitoring Networks				
354.34	10727.2(d)(1) 10727.2(d)(2) 10727.2(e) 10727.2(f)	Monitoring Networks	• Description of monitoring network • Description of monitoring network objectives • Description of how the monitoring network is designed to: demonstrate groundwater occurrence, flow directions, and hydraulic gradients between principal aquifers and surface water features; estimate the change in annual groundwater in storage; monitor seawater intrusion; determine groundwater quality trends; identify the rate and extent of land subsidence; and calculate depletions of surface water caused by groundwater extractions • Description of how the monitoring network provides adequate coverage of Sustainability Indicators • Density of monitoring sites and frequency of measurements required to demonstrate short-term, seasonal, and long-term trends • Scientific rational (or reason) for site selection • Consistency with data and reporting standards • Corresponding sustainability indicator, minimum threshold, measureable objective, and interim milestone	Section 3.6

GSP Regulations Section	Water Code Section	Requirement	Description	Section(s) or Page Number(s) in the GSP
			(Monitoring Networks Continued) • Location and type of each monitoring site within the basin displayed on a map, and reported in tabular format, including information regarding the monitoring site type, frequency of measurement, and the purposes for which the monitoring site is being used • Description of technical standards, data collection methods, and other procedures or protocols to ensure comparable data and methodologies	
354.36		Representative Monitoring	• Description of representative sites • Demonstration of adequacy of using groundwater elevations as proxy for other sustainability indicators • Adequate evidence demonstrating site reflects general conditions in the area	Section 3.6.5.
354.38		Assessment and Improvement of Monitoring Network	• Review and evaluation of the monitoring network • Identification and description of data gaps • Description of steps to fill data gaps • Description of monitoring frequency and density of sites	Section 3.6.6.

GSP Regulations Section	Water Code Section	Requirement	Description	Section(s) or Page Number(s) in the GSP
Article 5. Plan Contents, Subarticle 5. Projects and Management Actions				
354.44		Projects and Management Actions	• Description of projects and management actions that will help achieve the basin's sustainability goal • Measureable objective that is expected to benefit from each project and management action • Circumstances for implementation • Public noticing • Permitting and regulatory process • Time-table for initiation and completion, and the accrual of expected benefits • Expected benefits and how they will be evaluated • How the project or management action will be accomplished. If the projects or management actions rely on water from outside the jurisdiction of the Agency, an explanation of the source and reliability of that water shall be included. • Legal authority required • Estimated costs and plans to meet those costs • Management of groundwater extractions and recharge	Sections 4.2 and 4.3.
354.44(b)(2)	10727.2(d)(3)		• Overdraft mitigation projects and management actions	Section 4.2.2.

GSP Regulations Section	Water Code Section	Requirement	Description	Section(s) or Page Number(s) in the GSP
Article 8. Interagency Agreements				
357.4	10727.6	Coordination Agreements - Shall be submitted to the Department together with the GSPs for the basin and, if approved, shall become part of the GSP for each participating Agency.	**Coordination Agreements shall describe the following:** • A point of contact • Responsibilities of each Agency • Procedures for the timely exchange of information between Agencies • Procedures for resolving conflicts between Agencies • How the Agencies have used the same data and methodologies to coordinate GSPs • How the GSPs implemented together satisfy the requirements of SGMA • Process for submitting all Plans, Plan amendments, supporting information, all monitoring data and other pertinent information, along with annual reports and periodic evaluations • A coordinated data management system for the basin • Coordination agreements shall identify adjudicated areas within the basin, and any local agencies that have adopted an Alternative that has been accepted by the Department	NA

Appendix 1-B

Yucaipa GSA Governance Documents

MEMORANDUM OF AGREEMENT TO FORM A GROUNDWATER SUSTAINABILITY AGENCY FOR THE YUCAIPA SUB-BASIN (Sub-basin No. 8-02.07)

This 2017 Memorandum of Agreement ("MOA") is entered into by and among: South Mesa Water Company ("SOUTH MESA"), South Mountain Water Company ("SOUTH MOUNTAIN"), Western Heights Water Company ("WESTERN HEIGHTS") and Yucaipa Valley Water District ("YVWD"), herein collectively referred to as the "WATER PURVEYORS"; and, the City of Calimesa ("CALIMESA"), the City of Redlands ("REDLANDS") and the City of Yucaipa ("YUCAIPA"), herein collectively referred to as the "MUNICIPALITIES"; and, the San Bernardino Valley Municipal Water District ("SAN BERNARDINO VALLEY MUNICIPAL") and the San Gorgonio Pass Water Agency ("SAN GORGONIO"), herein collectively referred to as the "REGIONALS." The MUNICIPALITIES are sometimes herein collectively referred to as the "LAND USE AGENCIES." Each of the above-described entities is individually referred to as a "Party" and are collectively referred to as the "Parties". For purposes of this MOA, SOUTH MESA, SOUTH MOUNTAIN and WESTERN HEIGHTS are collectively referred to as the "MUTUALS"; and, the Parties other than the MUTUALS are collectively referred to as the "LOCAL AGENCIES."

Pursuant to the Sustainable Groundwater Management Act ("SGMA") and as further set forth herein, the purpose of this MOA is to form a Groundwater Sustainability Agency ("GSA") for the entire Yucaipa Sub-basin (Basin or Sub-Basin No. 8-02.07), in order to preserve local management and control of the Basin as set forth under SGMA.

The County of Riverside ("RIVERSIDE") and the County of San Bernardino ("SAN BERNARDINO"), collectively "COUNTIES," shall be considered "Stakeholders" but not Parties to this MOA.

Recitals

WHEREAS, on September 16, 2014, Governor Jerry Brown signed into law Senate Bills 1168 and 1319, and Assembly Bill 1739, collectively known as the Sustainable Groundwater Management Act ("SGMA"), codified in certain provisions of the California Government Code, including commencing with Section 65350.5, and codified in Part 2.74 of Division 6 of the California *Water Code*, commencing with Section 10720, and amending other provisions of the California *Government Code* and California *Water Code*; and

WHEREAS, SGMA went into effect on January 1, 2015; and,

WHEREAS, various clarifying amendments to SGMA were signed into law in 2015, including Senate Bills 13 and 226, and Assembly Bills 617 and 939, which were codified in part in California *Water Code* Section 10723.6(a), authorizing a combination of local agencies to form a GSA pursuant to a joint powers agreement, a memorandum of agreement, or other legal agreement; and, California *Water Code* Section 10723.6(b), authorizing water corporations regulated by the California Public Utilities Commission and mutual water companies to participate in a GSA through a memorandum of agreement or other legal agreement; and

WHEREAS, the legislative intent and effect of SGMA, as set forth in California *Water Code* Section 10720.1, includes the following: (1) to provide for the sustainable management of groundwater basins; (2) to enhance local management of groundwater consistent with rights to use or store groundwater and Section 2 of Article X of the California Constitution, and to preserve the security of water rights in the state to the greatest extent possible consistent with the sustainable management of groundwater; (3) to establish minimum standards for sustainable groundwater management; (4) to provide local groundwater agencies with the authority and the technical and financial assistance necessary to sustainably manage groundwater; (5) to avoid or minimize subsidence; (6) to improve data collection and understanding about groundwater; (7) to increase groundwater storage and remove impediments to recharge; (8) to manage groundwater basins through the actions of local governmental agencies to the greatest extent feasible, while minimizing state intervention to only when necessary to ensure that local agencies manage groundwater in a sustainable manner; and (9) to provide a more efficient and cost-effective groundwater adjudication process that protects water rights, ensures due process, prevents unnecessary delay, and furthers the objectives of SGMA; and,

WHEREAS, SGMA affords GSAs specific powers to manage groundwater in addition to existing legal authorities, which powers may be used to provide the maximum degree of local control and flexibility consistent with the sustainability goals of SGMA; and,

WHEREAS, SGMA includes several un-codified findings by the California Legislature, including the determination that the people of the state have a primary interest in the protection, management, and reasonable beneficial use of the water resources of the state, both surface and underground, and that the integrated management of the state's water resources is essential to meeting its water management goals; and,

WHEREAS, the Basin, as depicted in **Exhibit A** to this MOA, is identified by the California Department of Water Resources Bulletin 118 as Sub-basin No. 8-02.07 of the Upper Santa Ana Valley Groundwater Basin, and is designated by DWR as medium-priority; and,

WHEREAS, California *Water Code* Section 10720.7 requires the Basin, as a medium-priority basin that is not designated by DWR as being subject to critical conditions of overdraft, to be managed by a Groundwater Sustainability Plan ("GSP") or coordinated GSPs by January 31, 2022; and,

WHEREAS, in order to avoid designation as a probationary basin and become subject to direct intervention and management by the State Water Board, California *Water Code* Section 10735.2 requires that, by June 30, 2017 a collection of local agencies must form a GSA or prepare agreements to develop one or more GSPs that will collectively serve as a GSP for the entire Basin, in the event that a local agency has not decided to become a GSA that intends to develop a GSP for the entire Basin; and,

WHEREAS, the LOCAL AGENCIES have water supply, water management, and/or land use responsibilities for their respective jurisdictional areas overlying the Basin and are local agencies as defined by SGMA in California *Water Code* Section 10721(n), and thus each is authorized by SGMA to become or form a GSA; and,

WHEREAS, the LOCAL AGENCIES' individually have jurisdictional and/or service areas within and their collective jurisdictional areas and/or service areas cover the entirety of the Basin, with no gaps in coverage; and,

WHEREAS, the WATER PURVEYORS, including the MUTUALS, produce groundwater and provide water service within the Basin, and it is the Parties' shared intent to provide for management-level participation by the MUTUALS in the GSA to the maximum extent allowed by law without limiting any powers afforded to a GSA under SGMA; and,

WHEREAS, the REGIONALS are State Water Contractors, and have the rights and duties of such, including for the delivery of State Water Project Water within the Basin; and,

WHEREAS, in accordance with the terms of this MOA, and in furtherance of the shared intent of the Parties to maximize funding opportunities for the Basin and avoid potential intervention in the Basin by the State Water Board, the Parties agree that the YUCAIPA-GSA formed by this MOA will cover the entire Basin; and,

WHEREAS, the Parties mutually desire and intend to work with local stakeholders and interested parties in the Basin that are not Parties to this MOA, to carry out the policy, purposes, and requirements of SGMA in the Basin.

Agreement

NOW, THEREFORE, in consideration of the promises, terms, conditions, and covenants contained herein, it is mutually understood and agreed as follows:

I. **Incorporation of Recitals.** The Recitals stated above are incorporated herein by reference.

II. **Purposes.** The purposes of this MOA is to form the YUCAIPA-GSA for the Basin as specified herein pursuant to applicable provisions and requirements of SGMA, including but not limited to California *Water Code* Sections 10723 and 10723.6.

III. **Approval of MOA and Formation of the YUCAIPA-GSA.** Approval of this MOA and formation of the YUCAIPA-GSA shall be accomplished by the LOCAL AGENCIES each holding its own noticed public hearing pursuant to California *Water Code* Section 10723(b) and California *Government Code* Section 6066 and at such hearing will consider approval of a Resolution by its governing board to enter this MOA and jointly form the YUCAIPA-GSA as specified in this MOA. Approval of this MOA by the MUTUALS shall be accomplished through their respective governing boards' duly authorized procedures.

IV. **Definitions.** The following terms, whether used in the singular or plural, and when used with initial capitalization, shall have the meanings specified herein. The Parties agree that any definitions set forth herein are intended to be consistent with SGMA, and in the event of any discrepancy between a defined term in this MOA and a defined term in SGMA, the terms of SGMA shall control.

A. "Basin" refers to the Yucaipa Sub-basin, designated by the California Department of Water Resources Bulletin 118 as Sub-basin No. 8-02.07, as depicted in **Exhibit A** to this MOA.

B. "DWR" means the California Department of Water Resources.

C. "GSA" means a Groundwater Sustainability Agency, as defined by SGMA.

D. "GSP" means a Groundwater Sustainability Plan, as defined by SGMA.

E. "Memorandum of Agreement" or "MOA" refers to this Memorandum of Agreement.

F. "SGMA" refers to the Sustainable Groundwater Management Act, of 2014, as amended.

G. "State Water Board" means the California State Water Resources Control Board.

H. "YUCAIPA-GSA" refers to the Yucaipa Sub-basin GSA formed under this MOA.

V. Coordination and Cooperation

A. Continued Cooperation. The Parties to this MOA will continue to meet, confer, coordinate, and collaborate to discuss and develop technical, managerial, financial, and other criteria and procedures for the preparation, governance, and implementation of a GSP or coordinated GSPs in the Basin and to carry out the policy, purposes, and requirements of SGMA in the Basin.

B. Points of Contact. Each Party shall designate a principal contact person for that Party, who may be changed from time to time at the sole discretion of the designating Party. The principal contact person for each Party shall be responsible for coordinating with the principal contact persons for the other Parties in scheduling meetings and other activities under this MOA.

C. Voting Methodology. The voting structure for matters pertaining to the establishment and implementation of the administrative components of the YUCAIPA-GSA shall be by simple majority (51%) of the voting Parties, wherein each WATER PURVEYOR, MUNICIPALITY and REGIONAL holds a single vote.

VI. Roles and Responsibilities

A. The YUCAIPA-GSA shall be controlled by a Governing Board comprised of one representative of each of the Parties to this MOA.

B. The Parties agree to jointly establish their specific roles and responsibilities for implementing this MOA, including through the adoption of organizational documents, management policies, rules and procedures.

C. The Parties agree to jointly develop and implement a GSP or coordinated GSPs for the Basin in accordance with SGMA.

D. The Parties agree to work in good faith and coordinate all activities to carry out the purposes of this MOA in implementing the policy, purposes, and requirements of SGMA in the Basin, including continuing to meet, confer, coordinate, and collaborate to discuss and develop governance, management, technical, financial, and other matters, including respective roles and responsibilities for activities such as, but not limited to, the following: modeling;

metering; monitoring; hiring consultants; developing and maintaining list of interested persons under California *Water Code* Section 10723.4; budgeting; and other initial tasks as determined by the Parties.

E. The LOCAL AGENCIES shall coordinate with each other to cause all applicable noticing and submission of required information to DWR regarding formation of the YUCAIPA-GSA.

VII. Funding and Budgeting. The Parties shall work together to identify the costs, funding needs and funding sources for the administration of the YUCAIPA-GSA and the development and implementation of the GSP. To the extent not otherwise funded in accordance with or inconsistent with SGMA's provisions regarding GSA funding, the PURVEYORS shall collectively bear seventy-five percent (75%) and the MUNICIPALITIES and REGIONALS shall collectively bear twenty-five percent (25%) of the cost of the creation and administration of the YUCAIPA-GSA; and within each group, the Parties shall equally share in the costs of the creation and administration of the YUCAIPA-GSA. Nothing in this provision shall obligate any party to bear any portion of the attorneys' fees and legal costs of another Party.

VIII. Stakeholders. The initially designated stakeholders are the COUNTIES. The Parties agree to work together in ensuring public outreach and involvement of the public and other interested stakeholders throughout the SGMA process, including but not limited to all beneficial uses and users of groundwater as provided in SGMA Section 10723.2. Stakeholders have no voting rights under Section V.C. and no cost sharing obligations under Section VII of this MOA.

IX. Term, Termination, and Withdrawal.

A. Term. This MOA shall continue and remain in effect unless and until terminated by the unanimous written consent of the Parties, or as otherwise provided in this MOA or as authorized by law.

B. Withdrawal. After the YUCAIPA-GSA is officially established as the GSA for the Basin, any Party may decide, in its sole discretion, to withdraw from this MOA by providing ninety (90) days written notice to the other Parties. A Party that withdraws from this MOA shall remain obligated to pay its share of costs and expenses incurred or accrued under this MOA and any related cost-sharing agreement or arrangement up to the date the Party provides its notice of withdrawal as provided herein. Withdrawal by a Party shall not cause or require the termination of this MOA or the existence of the YUCAIPA-GSA with respect to the non-withdrawing Parties. In the event of withdrawal by one of the LOCAL AGENCIES, the Parties shall meet and confer during the 90-day notice period regarding: (i) whether the withdrawing Party wishes to seek GSA status for a portion of the Basin underlying the jurisdictional area or service area of the withdrawing Party; (ii) whether, as a result of the withdrawal, a co-GSA management or other arrangement with the withdrawing Party is necessary to satisfy the requirements of SGMA; and (iii) any other issues and steps that are necessary to avoid triggering probationary status of the Basin and State Water Board intervention. Any resolution of issues pertaining to withdrawal and any

other GSA issues shall be undertaken in a manner that satisfies all requirements of SGMA and DWR, including any requirement to file new GSA notices.

X. Notice Provisions

All notices required by this MOA shall be made in writing and delivered to the respective representatives of the Parties at their respective addresses as follows:

PARTIES:

PURVEYORS:

South Mesa Water Company
391 West Avenue L
Calimesa, California 92320
Attn: Dave Armstrong, General Manager
Email: smwc@verizon.net

South Mountain Water Company
35 Cajon Street
Redlands, California 92373
Attn: Cecilia Griego, Water Resources Specialist
Email: cgriego@cityofredlands.org

Western Heights Water Company
32352 Avenue D
Yucaipa, California 92399
Attn: William Brown, General Manager
Email: w.brown@westernheightswater.org

Yucaipa Valley Water District
12770 Second Street
Yucaipa, California 92399
Attn: Joseph, Zoba, General Manager
Email: jzoba@yvwd.dst.ca.us

MUNICIPALS:

City of Calimesa
908 Park Avenue
Calimesa, California 92399
Attn: Bonnie Johnson, City Manager
Email: bjohnson@cityofcalimesa.net

City of Redlands
35 Cajon Street
Redlands, California 92373
Attn: Chris Diggs, Municipal Utilities and Engineering Director
Email: cdiggs@cityofredlands.org

City of Yucaipa
34272 Yucaipa Boulevard
Yucaipa, California 92399
Attn: Ray Casey, City Manager
Email: rcasey@yucaipa.org

REGIONALS:

San Bernardino Valley Municipal Water District
380 E. Vanderbilt Way
San Bernardino, CA 92408
Attn: Douglas Headrick, General Manager & Chief Engineer
Email: douglash@sbvmwd.com

San Gorgonio Pass Water Agency
1210 Beaumont Avenue
Beaumont, CA 92223
Attn: Jeff Davis, General Manager and Chief Engineer
Email: jdavis@sgpwa.com

STAKEHOLDERS:

COUNTIES:

County of Riverside
4080 Lemon Street
Riverside, CA 92501
Attn: Steve Horn, Senior Management Analyst, Executive Office
Email: shorn@rceo.org

County of San Bernardino
385 N. Arrowhead Avenue
San Bernardino, CA 92415-0120
Attn: Bob Page, Principal Management Analyst, Special Projects
Email: bpage@sbcounty.gov

Any Party or Stakeholder may change the address to which notices are to be given under this MOA by providing all other Parties with written notice of such change at least fifteen (15) calendar days prior to the effective date of the change. All notices shall be effective upon receipt and shall be deemed received upon confirmed personal service, confirmed facsimile delivery, confirmed courier service, or on the fifth (5th) calendar day following deposit of the notice in registered first class mail.

XI. General Terms

A. Amendments. Amendments to this MOA require the unanimous written consent of all Parties and approval by the Parties' respective governing boards.

B. Successors and Assigns. The terms of this MOA shall be binding upon and inure to the benefit of the successors-in-interest and assigns of each Party; provided, however, that no transfer or assignment shall be effective until approved by the

Parties in accordance with the provisions of Section V.C. of this MOA. Once succession and/or assignment has been approved, a former Party shall have no further rights or obligations under this MOA.

C. Waiver. No waiver of any provision of this MOA by any Party shall be construed as a further or continuing waiver of such provision or any other provision of this MOA by the waiving Party or any other Party.

D. Authorized Representatives. Each person executing this MOA on behalf of a Party hereto affirmatively represents that such person has the requisite authority to sign this MOA on behalf of the respective Party.

E. Exemption from CEQA. The Parties recognize and agree that, pursuant to SGMA Section 10728.6, neither this MOA nor the preparation or adoption of a GSP constitute a "project" or approval of a project under the California Environmental Quality Act (CEQA) or the State CEQA Guidelines, and therefore this MOA is expressly exempt from CEQA review.

F. Governing Law and Venue. This MOA shall be governed by and construed in accordance with the laws of the State of California. Any suit, action, or proceeding brought under the scope of this MOA shall be brought and maintained to the extent allowed by law in the County of San Bernardino, California.

G. Attorney's Fees, Costs, and Expenses. In the event of a dispute among any or all of the Parties arising under this MOA, each Party shall assume and be responsible for its own attorney's fees, costs, and expenses.

H. Entire Agreement/Integration. This MOA constitutes the entire agreement among the Parties regarding the specific provisions of this MOA, and the Parties hereto have made no agreements, representations or warranties relating to the specific provisions of this MOA that are not set forth herein.

I. Construction and Interpretation. The Parties agree and acknowledge that this MOA has been developed through a negotiated process among the Parties, and that each Party has had a full and fair opportunity to review the terms of this MOA with the advice of its own legal counsel and to revise the terms of this MOA, such that each Party constitutes a drafting Party to this MOA. Consequently, the Parties understand and agree that no rule of construction shall be applied to resolve any ambiguities against any particular Party as the drafting Party in construing or interpreting this MOA.

J. Force Majeure. No Party shall be liable for the consequences of any unforeseeable force majeure event that (1) is beyond its reasonable control, (2) is not caused by the fault or negligence of such Party, (3) causes such Party to be unable to perform its obligations under this MOA, and (4) cannot be overcome by the exercise of due diligence. In the event of the occurrence of a force majeure event, the Party unable to perform shall promptly notify the other Parties in writing to the extent practicable. It shall further pursue its best efforts to resume its obligations under this MOA as quickly as possible and shall suspend performance only for such period of time as is necessary as a result of the force majeure event.

K. Execution in Counterparts. This MOA may be executed in counterparts, each of which shall be deemed an original and all of which when taken together shall constitute one and the same instrument.

L. No Third Party Beneficiaries. This MOA is not intended, and will not be construed, to confer a benefit or create any right on a third party or the power or right of any third party to bring an action to enforce any of the terms of this MOA.

M. Timing and Captions. Any provision of this MOA referencing a time, number of days, or period for performance shall be measured in calendar days. The captions of the various articles, sections, and paragraphs of this MOA are for convenience and ease of reference only, and do not define, limit, augment, or describe the scope, content, terms, or intent of this MOA.

IN WITNESS WHEREOF, the Parties hereto have approved and executed this MOA as of the respective dates specified in the adopting Resolution of each Party as provided above in Article III of this MOA.

[Signature Pages Follow]

COUNTY OF RIVERSIDE
EXECUTIVE OFFICE

GEORGE A. JOHNSON
COUNTY EXECUTIVE OFFICER

ROB FIELD
ASSISTANT COUNTY EXECUTIVE OFFICER
ECONOMIC DEVELOPMENT AGENCY

MICHAEL T. STOCK
ASSISTANT COUNTY EXECUTIVE OFFICER
HUMAN RESOURCES

ZAREH SARRAFIAN
ASSISTANT COUNTY EXECUTIVE OFFICER
HEALTH SYSTEMS

PAUL McDONNELL
ASSISTANT COUNTY EXECUTIVE OFFICER
COUNTY FINANCE DIRECTOR

June 22, 2017

Mr. Douglas Headrick
General Manager and Chief Engineer
San Bernardino Valley Municipal Water
District 380 E. Vanderbilt Way
San Bernardino, CA 92408

re: Support for Yucaipa Sub-Basin GSA

Mr. Headrick:

The County of Riverside appreciates the commitment of the cities of Calimesa, Redlands and Yucaipa; San Bernardino Valley Municipal Water District; San Gorgonio Pass Water Agency; Yucaipa Valley Water District; South Mesa Water Company; South Mountain Water Company; and Western Heights Water Company to maintain local control of the Yucaipa Sub-Basin and to work together through a Memorandum of Agreement to sustainably manage the basin's groundwater resources in a way that considers the interests of all beneficial uses and users.

As the County is also eligible to serve as the Groundwater Sustainability Agency for the Yucaipa Sub-Basin, the County wishes to assure you that it does not intend to adopt a competing Groundwater Sustainability Agency formation resolution and notification of the California Department of Water Resources.

If you should have any questions, please contact me at 951-955-1110 or by email at agann@rivco.org.

Sincerely,

Alex Gann
Deputy County Executive Officer

ec: Steve Van Stockum, Director, Riverside County Department of Environmental Health
Jeff Johnson, Deputy Director, Riverside County Department of Environmental Health
Jason Uhley, General Manager-Chief Engineer, Riverside County Flood Control
And Water Conservation District

ROBERT T. ANDERSEN COUNTY ADMINISTRATIVE CENTER
4080 LEMON STREET • FOURTH FLOOR • RIVERSIDE, CALIFORNIA 92501 • (951) 955-1110 • FAX (951) 955-1034

385 N. Arrowhead Avenue, 5th Floor, San Bernardino, CA 92415 | Phone: 909.387.4830 Fax: 909.387.3029
www.SBCounty.gov

SAN BERNARDINO COUNTY

Board of Supervisors

May 23, 2017

Mr. Douglas Headrick
General Manager and Chief Engineer
San Bernardino Valley Municipal Water District
380 E. Vanderbilt Way
San Bernardino, CA 92408

Re: Support for Yucaipa Sub-Basin Groundwater Sustainability Agency

Mr. Headrick:

On May 23, 2017, the County of San Bernardino Board of Supervisors voted to communicate the County's support of the cooperative efforts of the Yucaipa Sub-Basin Groundwater Sustainability Agency to manage groundwater in the Yucaipa Sub-Basin (No. 8-2.07) in compliance with the California Sustainable Groundwater Management Act.

The County appreciates the commitment of the cities of Calimesa, Redlands and Yucaipa; San Bernardino Valley Municipal Water District; San Gorgonio Pass Water Agency; Yucaipa Valley Water District; South Mesa Water Company; South Mountain Water Company; and Western Heights Water Company to maintain local control of the Yucaipa Sub-Basin and to work together through a Memorandum of Agreement to sustainably manage the basin's groundwater resources in a way that considers the interests of all beneficial uses and users.

As the County is also eligible to serve as the Groundwater Sustainability Agency for the Yucaipa Sub-Basin, the County wishes to assure you that the County does not intend to adopt a competing Groundwater Sustainability Agency formation resolution and notification of the California Department of Water Resources. To that end, on March 7, 2017, the Board of Supervisors adopted a resolution that the County would not be the Groundwater Sustainability Agency for 11 groundwater basins and sub-basins in the county, including Yucaipa Sub-Basin. A copy of this resolution is attached.

If you should have any questions, please contact Bob Page, Principal Management Analyst, at (909) 387-4384 or by email at bpage@cao.sbcounty.gov. Thank you.

Sincerely,

Robert A. Lovingood
Chairman and First District Supervisor
Board of Supervisors
County of San Bernardino

BOARD OF SUPERVISORS
Robert A. Lovingood, Chairman, First District | Janice Rutherford, Second District | James Ramos, Third District | Curt Hagman, Vice Chairman, Fourth District | Josie Gonzales, Fifth District
Dena M. Smith, Interim Chief Executive Officer

REPORT/RECOMMENDATION TO THE BOARD OF SUPERVISORS OF SAN BERNARDINO COUNTY, CALIFORNIA AND RECORD OF ACTION

May 23, 2017

FROM: **DENA M. SMITH, Interim Chief Executive Officer**
County Administrative Office

SUBJECT: **SUPPORT FOR BEAR VALLEY BASIN AND YUCAIPA BASIN GROUNDWATER SUSTAINABILITY AGENCIES**

RECOMMENDATION(S)

1. Approve and authorize submission of letters of support for the cooperative efforts of cities, water districts and water companies to manage groundwater in compliance with the California Sustainable Groundwater Management Act in the following groundwater basins:
   a. Bear Valley Basin (No. 8-9)
   b. Yucaipa Sub-Basin (No. 8-2.07)
2. Authorize the Chairman of the Board of Supervisors or the Chief Executive Officer to execute similar letters of support, subject to review by County Counsel, for local agency efforts to manage other groundwater basins in San Bernardino County that must comply with the California Sustainable Groundwater Management Act for which the County has previously notified the California Department of Water Resources that the County will not serve as the Groundwater Sustainability Agency.

(Presenter: Bob Page, Principal Management Analyst, 387-5425)

COUNTY AND CHIEF EXECUTIVE OFFICER GOALS AND OBJECTIVES

Ensure Development of a Well-Planned, Balanced, and Sustainable County.
Pursue County Goals and Objectives by Working with Other Agencies.

FINANCIAL IMPACT

Providing letters of support to local agencies forming Groundwater Sustainability Agencies (GSAs) will not result in the use of additional Discretionary General Funding (Net County Cost).

BACKGROUND INFORMATION

Effective January 1, 2015, the California Sustainable Groundwater Management Act (SGMA) requires local water and land use agencies to sustainably manage 127 groundwater basins and sub-basins (basins) that have been designated by the California Department of Water Resources (DWR) as medium or high priority. SGMA mandates that one eligible local agency or multiple eligible local agencies form a GSA for each of these basins by June 30, 2017 with the responsibility of developing and implementing a Groundwater Sustainability Plan (GSP).

cc: CAO-Smith
CAO-Page w/Letters of Support
CAO-Shea
File - Administrative Office w/copy of Letters
jr 5/24/17

ITEM 55

Record of Action of the Board of Supervisors

APPROVED (CONSENT CALENDAR)
COUNTY OF SAN BERNARDINO
Board of Supervisors

MOTION	AYE	AYE	SECOND	MOVE	AYE
	1	2	3	4	5

LAURA H. WELCH, CLERK OF THE BOARD

BY _____

DATED: May 23, 2017

Rev 7-12-16

DWR has designated Bear Valley Basin as medium priority. DWR has also defined the boundaries of the Bear Valley Basin in its Bulletin 118 and assigned it No. 8-9. The City of Big Bear Lake, the Big Bear City Community Services District and the Big Bear Municipal Water District have formed the Bear Valley Basin Groundwater Sustainability Agency (Bear Valley Basin GSA), a joint powers authority that became effective on April 26, 2017, with the purpose to become the exclusive GSA for the Bear Valley Basin.

DWR has designated Yucaipa Sub-Basin as medium priority. DWR has also defined the boundaries of the Yucaipa Sub-Basin in its Bulletin 118 and assigned it No. 8-2.07. Negotiations of a Memorandum of Agreement (MOA) regarding the formation of a GSA for the Yucaipa Sub-Basin completed in April. The MOA was circulated for approval by June from the governing bodies of the following parties to the MOA: the cities of Calimesa, Redlands and Yucaipa; San Bernardino Valley Municipal Water District; San Gorgonio Pass Water Agency; Yucaipa Valley Water District; South Mesa Water Company; South Mountain Water Company; and Western Heights Water Company.

Before either GSA can be the exclusive GSA for their respective basin, SGMA requires that they hold a noticed public hearing to adopt a resolution to become the exclusive GSA. The Bear Valley Basin GSA hearing is scheduled for May 25, 2017. The parties to Yucaipa Sub-Basin GSA MOA will hold separate public hearings on various dates before June 30, 2017. The GSAs will then have 30 days to notify DWR of their decisions, providing among other things a map of the service areas of the parties within each basin (attached) and a list of all beneficial uses and users of the groundwater and how their interests will be considered in the operation of the GSAs and the development and implementation of their GSPs.

DWR will post the notices on its SGMA Portal on its website (sgma.water.ca.gov/portal/#intro). Other eligible local agencies in each basin, including the County, will then have 90 days to file a competing GSA notice. If no competing notices are filed with DWR, the Bear Valley Basin GSA and Yucaipa Sub-Basin GSA will become the exclusive GSAs for their basins. On March 7, 2017 (Item No. 20), the Board of Supervisors (Board) adopted a resolution that the County would not be the GSA for 11 groundwater basins and sub-basins in the county, including Bear Valley Basin and Yucaipa Sub-Basin. The Board adopted a similar resolution covering five other basins on January 10, 2017 (Item No. 21).

The parties to these GSAs requested that the County support their efforts. If approved by the Board, the recommended letters will be provided to the Bear Valley Basin GSA and Yucaipa Sub-Basin GSA.

If local agencies in any of the other 14 basins covered by the Board's January 10 and March 7 resolutions request support of their GSA, approval of Recommendation No. 2 will authorize the Chairman of the Board or the Chief Executive Officer to execute similar letters of support, subject to review by County Counsel.

5/23/17 #55

PROCUREMENT
N/A.

REVIEW BY OTHERS
This item has been reviewed by County Counsel (Sophie A. Akins, Deputy County Counsel, 387-5001) on May 5, 2017; Finance (Stephenie Shea, Administrative Analyst, 387-4919) on May 8, 2017; and County Finance and Administration (Katrina Turturro, Deputy Executive Officer, 387-5423) on May 8, 2017.

5/23/17 #55

Exhibit A

COPY

RESOLUTION NO. 2017-18

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF YUCAIPA, CALIFORNIA, APPROVING THE MEMORANDUM OF AGREEMENT TO FORM A GROUNDWATER SUSTAINABILITY AGENCY FOR THE YUCAIPA SUB-BASIN WITH THE CITIES OF CALIMESA AND REDLANDS; THE SOUTH MESA WATER COMPANY; THE SOUTH MOUNTAIN WATER COMPANY; THE WESTERN HEIGHTS WATER COMPANY; THE YUCAIPA VALLEY WATER DISTRICT; THE SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT; AND THE SAN GORGONIO PASS WATER AGENCY

WHEREAS, on September 16, 2014, Governor Jerry Brown signed into law Senate Bills 1168 and 1319, and Assembly Bill 1739, collectively known as the Sustainable Groundwater Management Act ("SGMA"), codified in certain provisions of the California Government Code, including commencing with Section 65350.5, and codified in Part 2.74 of Division 6 of the California Water Code, commencing with Section 10720, and amending other provisions of the California Government Code and California Water Code; and

WHEREAS, various clarifying amendments to SGMA were signed into law in 2015, including Senate Bills 13 and 226, and Assembly Bills 617 and 939, which were codified in part in California Water Code Section 10723.6(a), authorizing a combination of local agencies to form a Groundwater Sustainability Agency (GSA) pursuant to a joint powers agreement, a memorandum of agreement, or other legal agreement; and, California Water Code Section 10723.6(b), authorizing water corporations regulated by the California Public Utilities Commission and mutual water companies to participate in a GSA through a memorandum of agreement or other legal agreement; and

WHEREAS, the Yucaipa Sub-Basin (Basin) is identified by the California Department of Water Resources (DWR) Bulletin 118 as Sub-Basin No. 8-02.07 of the Upper Santa Ana Valley Groundwater Basin, and is designated by DWR as a medium priority basin; and

WHEREAS, California Water Code Section 10720.7 requires the Basin, as a medium priority basin that is not designated by DWR as being subject to critical conditions of overdraft, to be managed by Groundwater Sustainability Plan by January 31, 2022; and

WHEREAS, the Cities of Yucaipa, Calimesa and Redlands; the Yucaipa Valley Water District; the South Mountain Water Company; the San Bernardino Valley Municipal Water District; and the San Gorgonio Pass Water Agency have water supply, water management, and/or land use responsibilities for their respective jurisdictional areas overlying the Basin and are local agencies as defined by SGMA, and thus each is authorized by SGMA to become or form a GSA; and

WHEREAS, the South Mesa Water Company and the Western Heights Water Company produce groundwater and provide water service within the Basin, and it is the intent to provide for management-level participation by these Water Companies in the GSA

WHEREAS, the City held a public hearing on May 22, 2017, after publication of notice pursuant to Government Code Section 6066 to consider adoption of this Resolution; and

WHEREAS, adoption of this Resolution does not constitute a "Project" under the California Environmental Quality Act (CEQA) pursuant to 15060(c)(3) and 15378(b)(5) of the State CEQA Guidelines because it is an administrative action that does not result in any direct or indirect physical change in the environment.

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF YUCAIPA DOES HEREBY RESOLVE, DETERMINE AND ORDER AS FOLLOWS:

Adopt Resolution No. 2017-18 approving the Memorandum of Agreement to form a Groundwater Sustainability Agency for the Yucaipa sub-basin with the Cities of Calimesa and Redlands; the South Mesa Water Company; the South Mountain Water Company; the Western Heights Water Company; the Yucaipa Valley Water District; the San Bernardino Valley Municipal Water District; and the San Gorgonio Pass Water Agency.

PASSED, APPROVED, and ADOPTED this 22nd day of May, 2017.

DICK RIDDELL, MAYOR

ATTEST:

JENNIFER SHANKLAND, CITY CLERK

RESOLUTION 2017 - 09

A RESOLUTION OF THE BOARD OF DIRECTORS OF THE SAN GORGONIO PASS WATER AGENCY TO APPROVE THE MEMORANDUM OF AGREEMENT TO JOINTLY FORM THE YUCAIPA GROUNDWATER SUSTAINABILITY AGENCY FOR THE YUCAIPA SUBBASIN

WHEREAS, the Sustainable Groundwater Management Act of 2014 (SGMA) was signed into law on September 16, 2014, went into effect on January 1, 2015, and has been subject to various amendments; and

WHEREAS, SGMA provides for the sustainable management of groundwater basins at the local level through the formation of Groundwater Sustainability Agencies (GSAs) and through preparation and implementation of Groundwater Sustainability Plans (GSPs); and

WHEREAS, the Yucaipa Subbasin (Basin) is identified by the California Department of Water Resources (DWR) Bulletin 118 as Subbasin No. 8-02.07 of the Upper Santa Ana Valley Groundwater Basin, and is designated by DWR as medium priority, and therefore, except as provided by SGMA, the Basin is subject to the requirements of SGMA; and

WHEREAS, the San Gorgonio Pass Water Agency (Agency) is a special act agency of the State of California, organized and operating pursuant to the San Gorgonio Pass Water Agency Law, California Water Code Appendix, Chapter 101, and accordingly the Agency constitutes a local agency for all purposes under SGMA; and

WHEREAS, SGMA authorizes a combination of local agencies as defined by SGMA to form a GSA pursuant to a joint powers agreement, a memorandum of agreement, or other legal agreement, and SGMA also authorizes a water corporation regulated by the California Public Utilities Commission or a mutual water company to participate in a GSA through a memorandum of agreement or other legal agreement; and

WHEREAS, in accordance with SGMA, the Agency, South Mesa Water Company (South Mesa), South Mountain Water Company (South Mountain), Western Heights Water Company (Western Heights), Yucaipa Valley Water District (YVWD), City of Calimesa (Calimesa), City of Redlands (Redlands), City of Yucaipa (Yucaipa), and San Bernardino Valley Municipal Water District (San Bernardino Valley Municipal) have prepared a Memorandum of Agreement (MOA), attached hereto as **Exhibit A**, to jointly form a GSA that is referred to in the MOA as the Yucaipa-GSA to cover the entire Basin, the members of which Yucaipa-GSA are the Agency, South Mesa, South Mountain, Western Heights, YVWD, Calimesa, Redlands, Yucaipa, and San Bernardino Valley Municipal; and

WHEREAS, the Agency is committed to the sustainable management of groundwater resources within the Basin in accordance with SGMA; and

WHEREAS, pursuant to the requirements of SGMA, the Agency held a public hearing on this date after publications of notice pursuant to California Government Code Section 6066 to consider adoption of this Resolution; and

WHEREAS, pursuant to SGMA Section 10728.6 and Public Resources Code Section 21065, neither this Resolution, nor the MOA, nor the preparation or adoption of a GSP constitutes a project or approval of a project under the California Environmental Quality Act (CEQA) or the State CEQA Guidelines.

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF DIRECTORS OF THE SAN GORGONIO PASS WATER AGENCY THAT:

1. The San Gorgonio Pass Water Agency hereby approves the Memorandum of Agreement to Jointly Form the Yucaipa Groundwater Sustainability Agency for the Yucaipa Subbasin (MOA), a copy of which is attached hereto as **Exhibit A**.

2. Pursuant to the MOA and as authorized by SGMA, the San Gorgonio Pass Water Agency elects to jointly form and participate as a member of the Yucaipa Groundwater Sustainability Agency (Yucaipa-GSA) for the entire Basin as further set forth and depicted in the MOA.

3. The General Manager of the San Gorgonio Pass Water Agency is hereby authorized and directed to coordinate with other members of the Yucaipa-GSA to submit a copy of this Resolution and other applicable information to the California Department of Water Resources regarding the formation of the Yucaipa-GSA.

I HEREBY CERTIFY that the foregoing is a true, full and correct copy of Resolution 2017-09 that was duly introduced, passed and adopted at a regular meeting of the Board of Directors of the San Gorgonio Pass Water Agency, at its regular meeting on June 5, 2017.

David L. Fenn, Board President
San Gorgonio Pass Water Agency

ATTEST:

Jeffrey Davis, Secretary

BYLAWS OF THE
YUCAIPA SUSTAINABLE GROUNDWATER MANAGEMENT AGENCY
(Department of Water Resources Sub-Basin No. 8-02.07)

ARTICLE I - NAME, ORGANIZATION, REPRESENTATIVES, PRINCIPAL OFFICE

Section 1.1 Name. The name of this organization is the Yucaipa Sustainable Groundwater Management Agency (hereinafter referred to as the "Yucaipa-SGMA").

Section 1.2 Organization. The Yucaipa-SGMA was formed by a Memorandum of Agreement ("MOA") in 2017 which remains in full force and effect, by and among: South Mesa Water Company, South Mountain Water Company, Western Heights Water Company and Yucaipa Valley Water District, herein collectively referred to as the "Water Purveyors"; and the City of Calimesa, the City of Redlands, and the City of Yucaipa, herein collectively referred to as the "Municipalities"; and the San Bernardino Valley Municipal Water District, and the San Gorgonio Pass Water Agency, herein collectively referred to as the "Regionals." Each of the above-described entities is individually referred to as a "Party" and collectively referred to as the "Parties".

Section 1.3 Board of Directors. Each Party shall appoint a principal representative and alternative representative, who may be changed from time to time at the sole discretion of the designating Party. The individuals appointed to the Yucaipa-SGMA shall be a senior executive management level employee of each designating Party. In the event that the appointed representative(s) is/are no longer employed by the appointing Party, the individual will be removed as a member of the Board of Directors of the Yucaipa-SGMA. Written confirmation from the governing board shall be provided to the Yucaipa-SGMA at the Principal Office following any change in representation.

Section 1.4 Principal Office. The principal office of the Corporation is hereby fixed and located at the offices of the San Bernardino Valley Municipal Water District, 380 East

Vanderbilt Way, San Bernardino, California 92408. The Parties hereby granted full power and authority to change said principal office from one location to another. Any such change shall be noted by the Secretary.

ARTICLE II - ROLES AND RESPONSIBILITIES

Section 2.1 Sustainable Groundwater Management Act. The Parties agree to jointly implement the Sustainable Groundwater Management Act ("SGMA"), codified in certain provisions of the California Government Code, including commencing with Section 65350.5, and codified in Part 2.74 of Division 6 of the California *Water Code*, commencing with Section 10720, and amending other provisions of the California *Government Code* and California *Water Code.*

Section 2.2 Groundwater Sustainability Plan. Specifically, the Parties agree to develop, implement, and maintain a Groundwater Sustainability Plan ("Plan") prepared pursuant to the Sustainable Groundwater Management Act (Part 2.74 of Division 6 of the Water Code, beginning with Section 10720) for the Yucaipa Basin (Department of Water Resources Sub-Basin No. 8-02.07) ("Basin"),

The following general principles shall guide the Parties in the implementation of a Groundwater Sustainability Plan: (a) Adopt a Plan that defines the basin setting and establishes criteria that will maintain or achieve sustainable groundwater management; (b) Monitor and report groundwater conditions to demonstrate that the Plan is achieving the sustainability goal for the basin; (c) Document the effect of the implementation of the Plan on adjacent basins; (d) Modify the Plan as needed, and report on a substantial compliance to the California Department of Water Resources; (e) Establish and report sustainable management criteria, projects, and management actions; and (f) Justify that the Plan provides a sustainably managed basin for 20 years following Plan implementation without adversely affecting the ability of an adjacent basin to achieve and maintain its sustainability goal.

Section 2.3 Powers and Duties. The Yucaipa-SGMA shall exercise the following powers:

A. To adopt rules, regulations, policies, bylaws and procedures governing the operation of the Yucaipa-SGMA.

B. To establish as-needed Ad Hoc and Standing advisory committees for making recommendations to the Board of Directors. Committees shall exist for the term specified in the action creating the committee, and the Board of Directors may dissolve a committee at any time through a majority vote of the Parties.

C. To monitor all public and private groundwater production and extractions.

D. To develop a Groundwater Sustainability Plan as described in Section 2.2.

E. To prepare an Annual Groundwater Report that reflects: all public and private groundwater extractions; natural and artificial recharge; return from use; water quality issues; contamination plumes; and other parameters deemed necessary by the Board of Directors to accurately determine the quantity and quality of the groundwater conditions in the Yucaipa Basin (Department of Water Resources Sub-Basin No. 8-02.07).

F. To determine the amount of additional artificial recharge for the Basin from imported sources as a complement to native sources, and to plan for the development and application of such additional sources of recharge.

G. By a majority vote, the Board of Directors may elect to exercise the following powers for a duration determined or modified as needed:

   a. To contract for the services of engineers, attorneys, planners, financial consultants, and separate and apart therefrom, to appoint agents and representatives to employ such other staff persons as necessary.

   b. To determine, assess, collect, account, and audit annual groundwater extraction charges to recover expenses related to groundwater recharge, administrative expenses, data collection, and report preparation as determined by the Board of Directors.

   c. To cooperate, act in conjunction, and contract with the United States, the State of California, or any agency thereof, counties, municipalities, public and private corporations of any kind (including without limitation, investor-owned utilities), and individuals, or any of them, for any and all purposes necessary or convenient for the purposes of the Yucaipa-SGMA.

d. To accumulate operating and reserve funds and invest the same as allowed by law for the purposes of the Yucaipa-SGMA.

e. As may be permitted by law, to apply for and accept grants, contributions, donations and loans, including under any federal, state or local programs for assistance in developing or implementing any of its projects or programs in connection with any project untaken by the Yucaipa-SGMA.

f. To implement a cost-sharing methodology in a manner that qualifies as a pass-through charge under the Constitutional requirements of Proposition 218 and similar revenue-raising requirements.

g. To exercise any power necessary or incidental to the foregoing powers in the manner and according to the procedures provided for under the law applicable to the Parties to this Agreement.

ARTICLE III - MEETINGS

Section 3.1 Regular Meetings. The Parties shall hold regular quarterly meetings on the fourth Wednesday in January, April, July, October for the purpose of conducting routine business matters. The Parties by resolution may fix and adjust the time, date, and place of holding such meetings.

Section 3.2 Workshops and Special Meetings. The Parties may schedule, and conduct workshops and special meetings as needed at the direction of a majority of the Board of Directors. The Parties by resolution may fix the time, date, and place of holding such meetings.

Section 3.3 Voting Methodology. The voting structure for matters pertaining to the establishment and implementation of the administrative components of the Yucaipa-SGMA shall be by simple majority (51%) of the voting Parties, wherein each Water Purveyor, Municipality and Regional holds a single vote.

Section 3.4 Fees and Compensation. Representatives from each Party shall receive no compensation or expenses from the Yucaipa-SGMA.

Section 3.5 Ralph M. Brown Act. Notwithstanding any of the provisions of these Bylaws to the contrary, all meetings shall be subject to the Ralph M. Brown Act, commencing at Section 54950 of the Government Code of the State of California.

Section 3.6 Conduct of Meetings. The President or, in the absence of the President the Vice President, or, in the absence of the Vice President the Secretary, or, in the absence of the Secretary a Chairperson chosen by a majority of the Parties present, shall preside over the meeting.

Section 3.13 Quorum. A majority of the Parties constitutes a quorum for the transaction of business.

ARTICLE IV - OFFICERS

Section 4.1 Officers. The officers of the Yucaipa-SGMA shall be a President, a Vice President, a Secretary, a Treasurer.

Section 4.2 Election. The officers shall be chosen at the first Regular Meeting held each calendar year and each shall hold office until the officer shall resign, be removed, or be otherwise disqualified to serve, or the officer's successor is elected.

Section 4.3 Removal and Resignation. Any officer may resign, or may be removed, with or without cause, at any time. Vacancies caused by death, resignation or removal of any officer may be filled by a majority vote of the Parties.

Section 4.4 President. The President shall preside at all meetings of the Parties.

Section 4.5 Vice President. In the absence of the President, the Vice President shall perform all the duties of the President.

Section 4.6 Secretary. The Secretary shall keep a book of minutes of all meetings, with the time and place of holding, the names of those present, and actions taken by the Parties.

Section 4.7 Treasurer. The Treasurer shall keep and maintain adequate and correct books of account showing the receipts and disbursements of the Yucaipa-SGMA, and an account of its cash and other assets, if any. Such books of account shall at all reasonable times be open to inspection by any Director.

The Treasurer shall deposit all moneys of the Yucaipa-SGMA with such depositories as are designated by the Parties and shall disburse the funds of the Yucaipa-SGMA as may be ordered, and shall render to the Parties, regular statements of the financial condition of the Yucaipa-SGMA.

ARTICLE V - MISCELLANEOUS

Section 5.1 Execution of Documents. The Parties may authorize any officer or officers as agent or agents, to enter into any contract or execute any instrument in the name of and on behalf of the Yucaipa-SGMA and such authority may be general or confined to specific instances; and unless so authorized, no officer, agent or other person shall have any power or authority to bind the Yucaipa-SGMA by any contract or engagement or to pledge its credit or to render it liable for any purpose or to any amount.

Section 5.2 Inspection of Bylaws. The Yucaipa-SGMA shall keep in its principal office the original or a copy of these Bylaws, as amended or otherwise altered to date, certified by the Secretary, which shall be open to inspection by members of the public at all reasonable times during office hours.

Section 5.3 Fiscal Year. The fiscal year of the Yucaipa-SGMA shall begin July 1 of each year and end on the last day of June of the succeeding year.

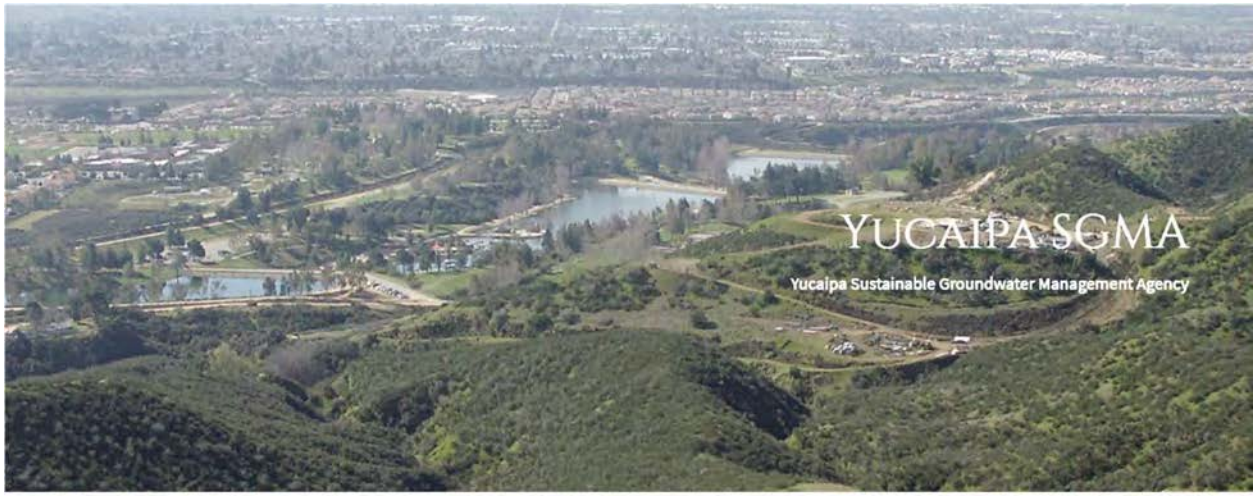
Section 5.4 Construction and Definitions. Unless the context otherwise requires, the general provisions, rules of construction and definitions contained in the Law shall govern the construction of these Bylaws. If any section, subsection, sentence, clause or phrase of these Bylaws, or the application thereof, is contrary to the Law, the provisions of the Law shall prevail. Without limiting the generality of the foregoing, the masculine gender includes the feminine and neuter, the singular number includes the plural and the plural number includes the singular, and the term "person" includes a corporation as well as a natural person.

Section 5.5 Amendments. New Bylaws may be adopted, or these Bylaws may be amended or repealed by the vote of the Parties. No amendment to these Bylaws shall be effective until approved by the Parties.

Approved unanimously on May 23, 2018.

Appendix 1-C

Public Outreach and Engagement Plan



PUBLIC OUTREACH AND ENGAGEMENT PLAN

Prepared for:

Yucaipa Sustainable Groundwater Management Agency
YucaipaSGMA.org

Prepared by:

DUDEK
605 Third Street
Encinitas, California 92024

July 2019

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GLOSSARY OF TERMS/ABBREVIATIONS

Acronym/Abbreviation	Definition
Yucaipa SGMA	Yucaipa Sustainable Groundwater Management Agency
GSA	Groundwater Sustainability Agency
GSP	Groundwater Sustainability Plan
DWR	California Department of Water Resources
TAG	Technical Advisory Group
SWRCB	State Water Resources Control Board
South Mesa	South Mesa Water Company
South Mountain	South Mountain Water Company
WHWC	Western Heights Water Company
YVWD	Yucaipa Valley Water District
SBVMWD	San Bernardino Valley Municipal Water District
SGPWA	San Gorgonio Pass Water Agency
Term	**Definition**
Aquifer	An underground layer of water-bearing permeable rock, rock fractures or unconsolidated material (gravel, sand, or silt) that yields significant amounts of groundwater to wells or springs (DWR Bulletin 118).
Yucaipa Subbasin	Upper Santa Ana Valley Groundwater Basin, Yucaipa Subbasin, identified as Groundwater Basin Number 8-2.07 in DWR Bulletin 118 – California's Groundwater
Stakeholder	An individual with interest in the Yucaipa Subbasin GSP
Engagement	Efforts made to understand and involve stakeholders and their concerns in the activities and decision-making of the Yucaipa GSA
Member Agencies	The water purveyors, municipalities and regional water agencies who are members of the Yucaipa Groundwater Sustainability Agency

1 BACKGROUND OF THE SUSTAINABLE GROUNDWATER MANAGEMENT ACT

The Sustainable Groundwater Management Act, signed into law by Governor Jerry Brown on September 16, 2014, created a new framework for groundwater management in California. The framework includes a structure and schedule to achieve sustainable groundwater management within 20 years. The California Department of Water Resources (DWR) has historically managed the state's central repository for groundwater data. Under The Sustainable Groundwater Management Act, DWR provides guidance, financial assistance, and technical support for compliance with state requirements. The State Water Resources Control Board (SWRCB) provides the regulatory backstop under The Sustainable Groundwater Management Act, taking over basin management and assessing fees if local groundwater management is not successful in complying with the requirements of The Sustainable Groundwater Management Act.

The Sustainable Groundwater Management Act established a new structure for local groundwater management through Groundwater Sustainable Agencies (GSAs). The formation of GSAs for all basins that the DWR designated as high and medium priority groundwater basins was required by July 1, 2017. Each GSA for these high and medium priority basins must then develop a Groundwater Sustainability Plan (GSP) that details how sustainable groundwater management will be achieved within 20 years of implementing the GSP. Sustainable groundwater management is defined by The Sustainable Groundwater Management Act as *the management and use of groundwater in a manner that can be maintained during the planning and implementation horizon without causing undesirable results*. This avoidance of undesirable results is measured through six sustainability indicators:

1. Chronic lowering of groundwater levels indicating a significant and unreasonable depletion of supply if continued over the planning and implementation horizon,
2. Significant and unreasonable reduction of groundwater storage,
3. Significant and unreasonable seawater intrusion,
4. Significant and unreasonable degradation of water quality,
5. Significant and unreasonable land subsidence, and
6. Depletion of interconnected surface water and groundwater that has significant and unreasonable adverse impacts on beneficial uses of the surface water.

The GSP is a tool used to help the GSA sustainably manage the basin. The criteria for sustainable management, including determining what is significant and unreasonable within the parameters of The Sustainable Groundwater Management Act for the

groundwater basin managed by that GSA, must be assessed, with input from stakeholders, before the GSP can be adopted.

1.1 Sustainable Groundwater Management Act Requirements for Stakeholder Engagement

Stakeholder engagement is an important component of any successful long term planning effort. Engaging members of the public in groundwater sustainability planning will improve public understanding of the technical and political considerations the GSA factors into their decision-making process. Participation by the public will also improve the GSA's understanding of the potential impacts of their decisions.

The Sustainable Groundwater Management Act recognized the importance of stakeholder engagement and laid out specific requirements for stakeholder engagement within each of the four phases of The Sustainable Groundwater Management Act:

Phase 1: GSA Formation and Coordination
The following Phase 1 requirements were completed by Yucaipa SGMA in 2017 and 2018:

- Establish and maintain a list of interested parties
- Provide public notice of the GSA formation
- Conduct a GSA formation public hearing
- Notify DWR of the GSA formation
- Provide a written statement to DWR as well as cities and counties within the GSA boundary describing how interested parties may participate in the GSP development.
- Develop GSA website for interested parties

Phase 2: GSP Preparation and Submission
The following Phase 2 requirements will be completed by Yucaipa SGMA by January 31, 2022:

- Submit initial notification.
- Prepare a GSP that considers beneficial uses and users of groundwater when describing undesirable results, minimum thresholds, projects and actions.
- The GSP must include a communication section that includes the following:
    - An explanation of the Agency's decision-making process.
    - Identification of opportunities for public engagement and a discussion of how public input and response will be used.

  - A description of how the Agency encourages the active involvement of diverse social, cultural, and economic elements of the population within the basin.
  - The method the Agency will follow to inform the public about progress implementing the Plan, including the status of projects and actions.
- The GSA must provide public noticing and hold a public meeting before adopting or amending a GSP.

Phase 3: GSP Review and Evaluation
The following Phase 3 requirements will be completed by DWR:

- After the GSA adopts the GSP and it is submitted to DWR, the GSP will be available on the DWR website for a 60-day comment period for any person to provide comments to DWR before the DWR completes evaluation and assessment of the GSP.

Phase 4: Implementation and Reporting
The following Phase 4 requirements will be completed by Yucaipa SGMA through 2042:

- The Sustainable Groundwater Management Act requires assessments and re-evaluation of the GSP at least every 5 years. The GSA must provide public notice and hold public meetings prior to amending the GSP.
- Public notice is also required before the GSA imposes or increases fees.

There are also has general requirements that apply to all four phases of Sustainable Groundwater Management Act implementation.

2 YUCAIPA SUBBASIN AND GSA FORMATION

The Upper Santa Ana Valley Groundwater Basin, Yucaipa Subbasin lies under portions of the cities of Calimesa, Redlands, and Yucaipa, as well as unincorporated San Bernardino and Riverside Counties. The Subbasin, cataloged by the California Department of Water Resources (DWR) as groundwater basin number 8-2.07, is approximately 25,300 acres (Figure 1).

The Yucaipa Sustainable Groundwater Management Agency (Yucaipa SGMA) was formed as the GSA for the Yucaipa Subbasin in 2017 through a Memorandum of Agreement (MOA) entered into by local water purveyors, municipalities, and regional water management entities.

Yucaipa-GSA Member Agencies
Purveyors
South Mesa Water Company
South Mountain Water Company
Western Heights Water Company
Yucaipa Valley Water District
Municipalities
City of Redlands
City of Yucaipa
Regionals
San Bernardino Valley Municipal Water District
San Gorgonio Pass Water Agency

The Yucaipa SGMA completed the initial phase of stakeholder engagement (Phase 1) in June 2017 and provided the required documentation for GSA formation, which is available to the public through the DWR Sustainable Groundwater Management Act Portal (https://sgma.water.ca.gov/portal/gsa/print/349).

The City of Calimesa submitted a written Notice of Withdrawal dated November 19, 2018 and the Yucaipa SGMA subsequently acknowledged the withdrawal of the City of Calimesa from the Yucaipa SGMA at the January 23, 2019 meeting.

2.1 Yucaipa SGMA and GSA Decision Making Process

The roles and responsibilities of the Yucaipa SGMA were further clarified in the By-Laws adopted in May 2018. Each of the Member Agencies appoints one principal representative and one alternate representative to the Yucaipa SGMA Board. All Board meetings are public meetings subject to the Ralph M. Brown Act. Each Board member has one vote and a simple majority of 51% of the voting parties is required to pass an item. A majority of the Board is considered a quorum for purposes of meeting and decision-making.

3 YUCAIPA SUBBASIN GSP

The DWR has designated the Yucaipa Subbasin as a high-priority basin based on population size and growth, reliance on groundwater for public water supply, and long-term declines in groundwater levels. The Yucaipa Subbasin is not designated as critically overdrafted, therefore a GSP must be developed by January 31, 2022. This GSP will detail a pathway to sustainable groundwater management by 2042 in accordance with the Sustainable Groundwater Management Act.

Yucaipa SGMA has initiated the process of developing a GSP (Yucaipa GSP) for the Yucaipa Subbasin that will define a course of action to achieve sustainable groundwater management within 20 years of plan adoption. The Yucaipa GSP will identify local undesirable results and identify management actions to minimize undesirable results as well as milestones to ensure progress. A groundwater monitoring program will be developed and implemented to track improvement within the basins leading to sustainable management. The Yucaipa GSP will be re-evaluated and refined, as needed, and submitted to DWR every five years in accordance with the Sustainable Groundwater Management Act.

4 PURPOSE OF THE DOCUMENT

This Public Outreach and Engagement Plan (Plan) has been developed as a communication tool to help stakeholders understand the importance of participation in groundwater sustainability planning and lay the framework of how stakeholders can actively engage in the Yucaipa-GSA planning effort. In 2018, DWR released a guidance document for GSP Stakeholder Communication and Engagement that details best practices including the development of Communication and Engagement Plans to increase transparency in the GSP development process.

The Yucaipa SGMA will prepare a GSP in accordance with The Sustainable Groundwater Management Act that will guide future management decisions including the amount of ground water that can be pumped from the subbasin without causing undesirable results, and the development of new projects to enhance water resource management.

The Yucaipa SGMA discussed overarching goals for outreach and engagement at the April 24, 2019 Board Meeting. The primary goals during the GSP development process included:

1. Maintaining transparency throughout the GSP development process,
2. Developing a common understanding among stakeholders of the Yucaipa subbasin needs, and

3. Exceeding the state requirements for outreach and engagement.

This Plan is intended to be a guiding framework that will be updated as needed to maintain transparency throughout the GSP development and implementation process.

5 OPPORTUNITIES FOR PUBLIC INVOLVEMENT AND ENGAGEMENT

The Yucaipa SGMA encourages members of the public to participate in the GSP development and implementation process through attending public meetings, providing comments on the draft GSP, and communicating directly with member agency staff and Board members.

5.1 Meeting Opportunities

The Yucaipa SGMA Board holds quarterly regular meetings the fourth Wednesday in January, April, July, and October to conduct routine business matters. During the development of the GSP, the Technical Advisory Group (TAG) will meet approximately monthly as needed. All Board and TAG meetings are open to the public and each meeting agenda includes an item where members of the public can speak to the Board. All meeting agendas and minutes are posted on the Yucaipa SGMA website (https://yucaipasgma.org).

5.1.1 Public Notices

Board meetings and workshops are noticed in accordance with the Brown Act. In addition to publicly noticing meetings on the Yucaipa SGMA website, the Yucaipa SMGA maintains a list of interested parties and distributes electronic agenda information and newsletters via email. Newsletters include notices of Yucaipa SGMA Board meetings and other updates including updates on the progress of the GSP development and implementation. Interested parties can subscribe to the list that receives email notifications through the “subscribe” link at the bottom of the website home page (https://yucaipasgma.org).

5.2 Collaborative Opportunities

The Yucaipa-SMGA has taken an inclusive approach to groundwater management, making space on the Board for each of the local entities with water supply, water management, and or land use responsibility in the Yucaipa Subbasin that wanted to participate in the GSA. The Board understands that each interested party has an established relationship with their local water supplier that should continue through the development and implementation of the GSP. Each Board member is appointed by the

member agency and represents the constituents in their jurisdiction. In addition to the Yucaipa SGMA Board member agencies, representatives from the City of Calimesa, the County of Riverside and the County of San Bernardino participated in the formation of the Yucaipa SGMA and are committed to continued involvement as representatives of their stakeholder interests. Due to this uniquely inclusive Board structure, Yucaipa SGMA views each Board member and stakeholder representative as an ambassador of their own jurisdiction, representing their interests in the Yucaipa SGMA meetings.

Purveyors

5.2.1 South Mesa Water Company

The South Mesa Water Company (South Mesa) is a mutual water company, formed in 1912, with approximately 4 square miles within the service area including portions of both the City of Calimesa and the City of Yucaipa. Water supplied by South Mesa is currently 100% groundwater. The South Mesa service area is approximately 90% residential with some industrial uses, several schools, and some small parks. South Mesa engages directly with shareholders through the annual shareholder meeting and updates as needed. South Mesa engages with shareholders through their website, regular Consumer Confidence Reports, social media platforms and information available at the South Mesa office. Many shareholders also pay their bills in person and converse regularly with South Mesa staff.

5.2.2 South Mountain Water Company

The South Mountain Water Company (South Mountain) is a mutual water company with groundwater production in the Yucaipa subbasin. The City of Redlands owns majority shares and operates the two wells owned by South Mountain. The business activities of the company are conducted by Bear Valley Mutual Water Company.

5.2.3 Western Heights Water Company

The Western Heights Water Company (WHWC) serves approximately 4.53 square miles including parts of the City of Yucaipa and the City of Redlands. Approximately 90% of WHWC customer demand is domestic with approximately 10% industrial and commercial use. WHWC currently has sufficient groundwater supply for 100% of the potable water demand, but purchases 25% imported water to offset groundwater demand. WHWC shareholders engage in decision making through participation in WHWC Board meetings.

5.2.4 Yucaipa Valley Water District

The Yucaipa Valley Water District (YVWD) is a special district that was formed in 1971 and supplies local groundwater, treated imported water, and recycled water. The Yucaipa Valley Water District service area is approximately 40 square miles and includes portions of the City of Calimesa and the City of Yucaipa. Approximately 78% of the water use in the YVWD is residential with approximately 22% commercial, industrial and institutional. The YVWD engages with customers through their local office, website and consumer confidence reports. YVWD also published some notices in the local newspaper as appropriate.

Municipalities

5.2.5 City of Redlands

The City of Redlands was incorporated in 1888 and currently serves water to local businesses and more than 75,000 residents in Redlands, Mentone, parts of Crafton Hills, San Timoteo Canyon, and a small portion of San Bernardino. The City of Redlands supplies originate as surface water, groundwater and imported water. The City of Redlands provides ongoing communication with stakeholders through their website and social media. Important water-related information is distributed with consumer confidence reports and bills as appropriate.

5.2.6 City of Yucaipa

The City of Yucaipa was incorporated in 1989 and currently has over 58,000 residents. Water service in the City is provided by YVWD, South Mesa, and WHWC. South Mountain has water facilities, including water wells, within the City of Yucaipa, but does not currently provide water services in the City. The entire City of Yucaipa is within the service area of the SBVMWD. The City of Yucaipa has several commissions and committees, including the Planning Commission, Parks and Recreation Commission, and Trails and Open Space Committee, that enable citizens to participate in the governance process. The City of Yucaipa regularly holds public meetings where members of the general public can voice concerns or issues. The City also engages with stakeholders through social media, the city website and newspaper publications as appropriate.

Regionals

5.2.7 San Bernardino Valley Municipal Water District

The San Bernardino Valley Municipal Water District was formed in 1954 as a regional water agency. The San Bernardino Valley Municipal Water District is a wholesale water supplier that imports water through the State Water Project, manages groundwater stored within the District boundaries, and coordinates delivery of imported water to local water retail agencies.

5.2.8 San Gorgonio Pass Water Agency

The San Gorgonio Pass Water Agency (SGPWA) was established in 1961 and supplies State Water Project water to retail water agencies. The SGPWA engages with stakeholders through semi-monthly public Board meetings and workshops. SGPWA provides regular updates on the website and through social media.

Stakeholders

5.2.9 City of Calimesa

The City of Calimesa was incorporated in 1990 and currently has over 8,000 residents. Water service in the City is provided by South Mesa and YVWD. The entire City of Calimesa is within the San Gorgonio Pass Water Agency service area. The City has several active commissions and provides opportunities for public comment at all City Council and Commission meetings. The City also engages with stakeholders through their website and social media.

5.2.10 County of Riverside

The County of Riverside was formed in 1893 and covers nearly 7,300 square miles including 28 cities. The County provides information and updates on a centralized website as well as social media.

5.2.11 County of San Bernardino

The County of San Bernardino was formed in 1854 and covers 20,000 square miles including 24 cities. The County provides information and updates on a centralized website as well as social media.

5.3 Opportunities for Tribal Communities

According to the DWR Water Management Planning Tool, as of January 2019, there are no tribal trust lands within the Yucaipa Subbasin as shown in Figure 2. Although there are no federally recognized tribes, Indian land currently or historically held in Trust by the United States Government or smaller Reservation areas within the Yucaipa Subbasin, the Yucaipa SGMA encourages participation from all stakeholders including tribal communities within the watershed.

5.4 Disadvantaged Communities

There are several communities within the Subbasin that DWR has mapped as Disadvantaged Communities (DAC) and Severely Disadvantaged Communities (SDAC) based on median household income within community census tracts, blocks, and places as shown in Figure 3. The majority of the areas designated as DAC and SDAC are within either the City of Yucaipa or the City of Calimesa. Members of these communities are represented on the Yucaipa SGMA by both their City representative and their water supplier.

5.5 Stakeholder Email List

The Yucaipa SGMA maintains a list of stakeholders interested in the GSP process, known as the *List of Interested Parties (List)*. Electronic newsletter, meeting notices, and notices of GSP documents are sent electronically to the List. There are currently over 100 individuals subscribed to the List. The List is continuously updated with individuals that request in writing to be placed on the list of interested parties or subscribe through the Yucaipa SGMA website.

5.6 Online Resources

The Yucaipa SGMA has created a website (www.YucaipaSGMA.org) that includes general information, relevant documents, a calendar of meetings and important events, as well as the agendas and minutes for all Yucaipa SGMA meetings.

6 CONTACT US

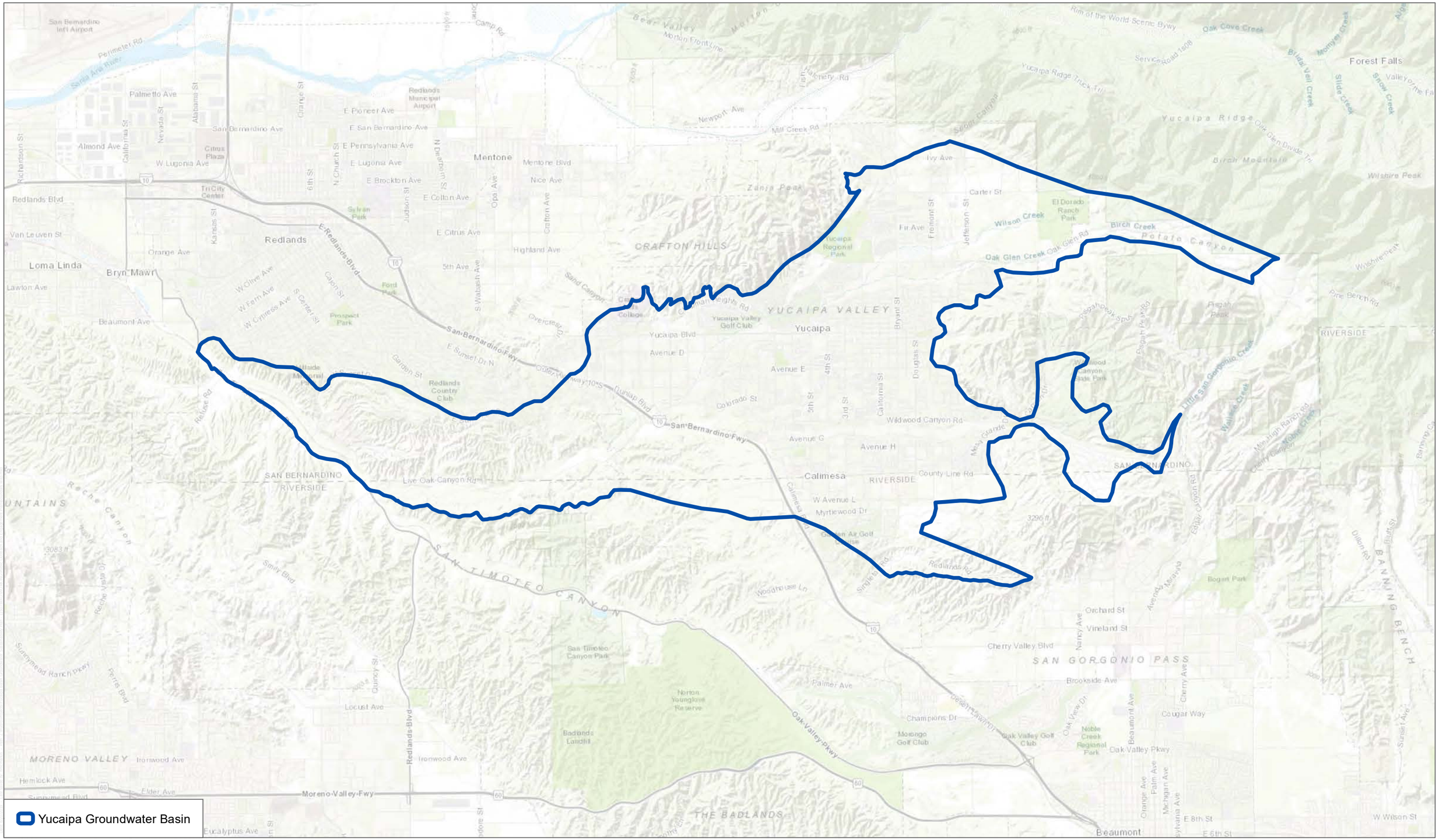
This document serves as a tool for facilitating public engagement in the GSP development process. It is designed to be a living document that is updated as needed to reflect current mechanism of engagement. Yucaipa SGMA will continue to use the communication tools outlined in this document as necessary through the implementation phase of the GSP.

For additional information regarding the Yucaipa SGMA and the GSP, please contact:

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Phone: (909) 387-9215
Email: bobt@sbvmwd.com

Mailing Address:
San Bernardino Valley Municipal Water District
380 East Vanderbilt Way,
San Bernardino, California 92408

Website: www.YucaipaSGMA.org



SOURCE: ESRI, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordanance Survey, ESRI Japan, METI, ESRI China (Hong Kong), swisstopo, OpenStreetMap contributors, and the GIS User Community; DWR

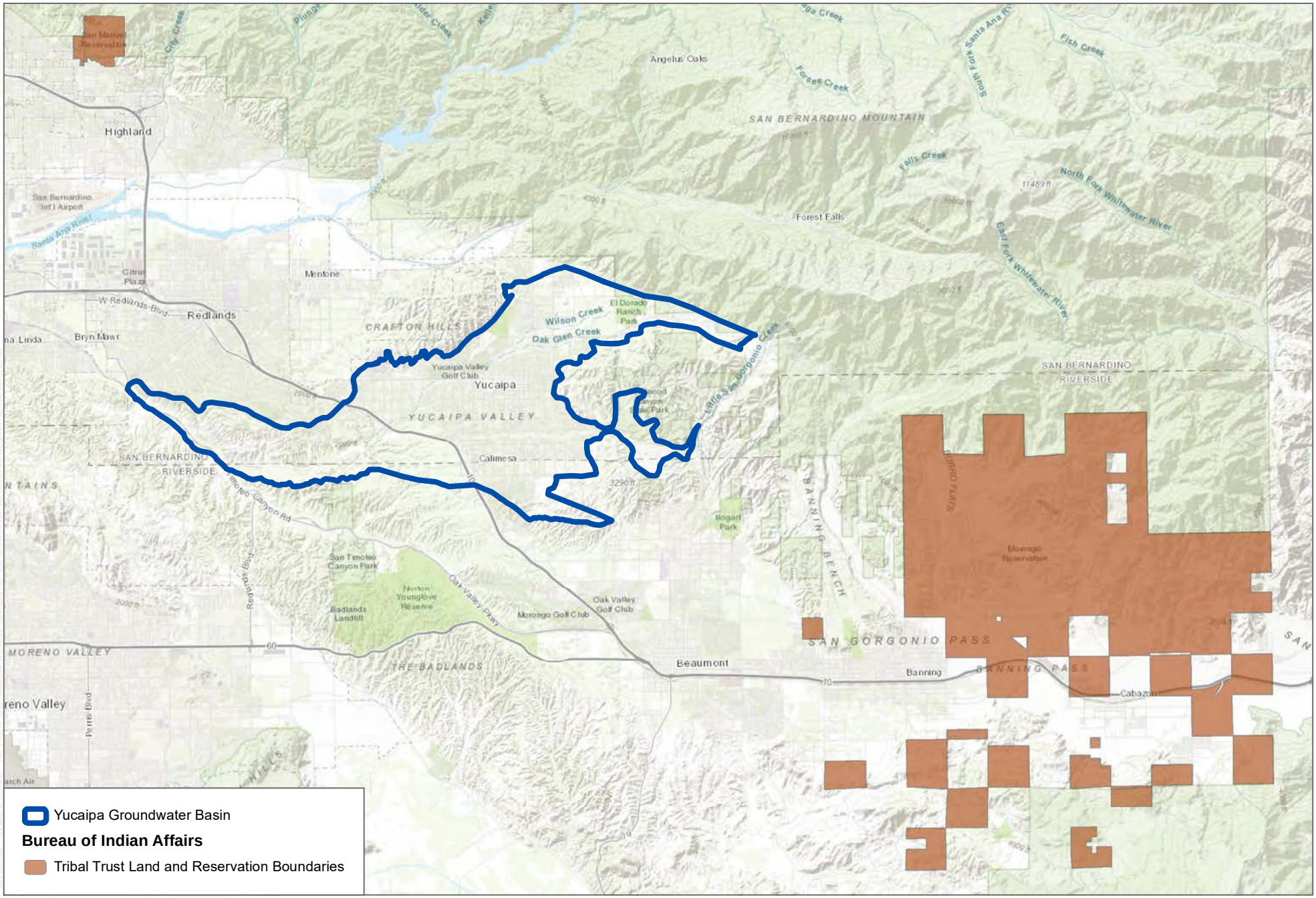
DUDEK

0 0.5 1 Miles

FIGURE 1

Boundary Map

Public Outreach and Engagement Plan



SOURCE: ESRI, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordanance Survey, ESRI Japan, METI, ESRI China (Hong Kong), swisstopo, OpenStreetMap contributors, and the GIS User Community; BLM; DWR

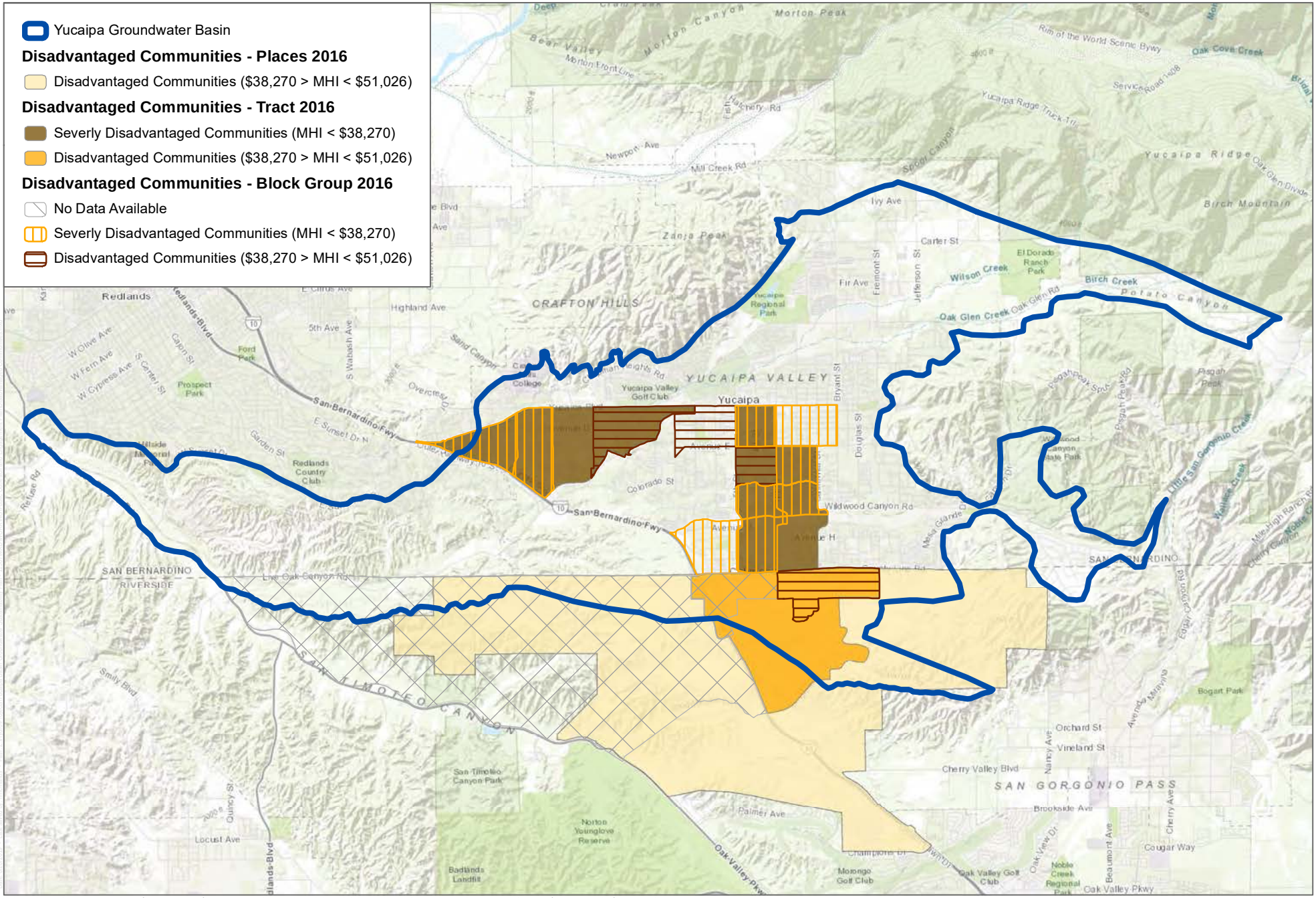
DUDEK

0 1.5 3 Miles

FIGURE 2

Tribal Trust Lands

Public Outreach and Engagement Plan



SOURCE: ESRI, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordanance Survey, ESRI Japan, METI, ESRI China (Hong Kong), swisstopo, OpenStreetMap contributors, and the GIS User Community; DWR 2019

Note: MHI = Mean Household Income

DUDEK

FIGURE 3

Disadvantaged Communities

Public Outreach and Engagement Plan

This plan was paid for in part by a grant from the California Department of Water Resources through the Proposition 1 Sustainable Groundwater Planning Grant Program.

DUDEK

Appendix 2-A

Annual Precipitation and Water Year Type at SBCFCD Climate Stations in the Yucaipa Subbasin

DRAFT Appendix 2-A. Annual Precipitation and Water Year-Type at San Bernardino County Flood Control District Climate Stations in the Yucaipa Subbasin

Water Year Ending	Western Heights					Calimesa					Crafton			Wilson Creek			
	2915 (2235')	3099 (2140')	3356 (2125')	% of Mean	Water Year Type	3126A (2813')	3132 (2710')	3386 (2620')	% of Mean	Water Year Type	2890 (2606')	% of Mean	Water Year Type	3126 (2815')	3128B (2860')	% of Mean	Water Year Type
1953							5.41		32%	Critically Dry				12.59	14.26	88%	Below Normal
1954							18.12		109%	Normal				17.84	16.92	114%	Above Normal
1955							13.75		82%	Below Normal				15.17	14.68	97%	Normal
1956							11.68		70%	Dry				11.72	11.83	77%	Below Normal
1957							14.47		87%	Below Normal				13.41		88%	Below Normal
1958		24.72		181%	Wet		26.48		159%	Wet				27.95		183%	Wet
1959		8.26		60%	Dry		9.13		55%	Dry				8.76		57%	Dry
1960		15.98		117%	Above Normal		14.03		84%	Below Normal				13.25		87%	Below Normal
1961		8.05		59%	Dry		2.50		15%	Critically Dry				7.63		50%	Critically Dry
1962		18.68		137%	Above Normal		16.78		101%	Normal				18.84		123%	Above Normal
1963		15.80		116%	Above Normal		14.01		84%	Below Normal				13.90		91%	Normal
1964		12.65		93%	Normal		11.04		66%	Dry				11.74		77%	Below Normal
1965		13.80		101%	Normal		13.02		78%	Below Normal							
1966		17.80		130%	Above Normal	19.63	18.19		113%	Above Normal							
1967		27.05		198%	Wet	27.41	24.76		156%	Wet							
1968		15.25		112%	Above Normal	15.46	16.80		97%	Normal							
1969		29.12		213%	Wet	38.22	35.36		221%	Wet							
1970		8.53		62%	Dry	10.26	9.91		60%	Dry					10.03	66%	Dry
1971		9.44		69%	Dry	13.44	13.75		82%	Below Normal					12.17	79%	Below Normal
1972		6.26		46%	Critically Dry	8.65	7.35		48%	Critically Dry					8.73	57%	Dry
1973		15.48		113%	Above Normal	22.33	19.93		127%	Above Normal					21.53	141%	Above Normal
1974		9.98		73%	Dry	14.32	11.83		78%	Below Normal					12.52	82%	Below Normal
1975		12.18		89%	Below Normal	17.74	14.98		98%	Normal					17.02	111%	Above Normal
1976		10.84		79%	Below Normal	18.19	15.89		102%	Normal					17.35	113%	Above Normal
1977						16.48	10.06		80%	Below Normal					13.49	88%	Below Normal
1978						36.63	29.65		199%	Wet					30.84	201%	Wet
1979						27.30	21.25		146%	Above Normal					22.51	147%	Above Normal
1980			24.67	181%	Wet	30.98	26.95		174%	Wet					21.03	137%	Above Normal
1981			7.43	54%	Dry	12.44	9.61		66%	Dry							
1982			16.05	118%	Above Normal	21.53	18.68		121%	Above Normal							
1983			28.58	209%	Wet	39.42	30.71		210%	Wet							
1984			6.87	50%	Dry	10.48	8.96		58%	Dry							
1985			10.33	76%	Below Normal	14.48	12.36		80%	Below Normal							
1986			12.36	91%	Normal	18.25	13.83		96%	Normal							
1987			8.84	65%	Dry	11.33	10.66		66%	Dry							
1988			12.10	89%	Below Normal	16.96	13.69		92%	Normal							
1989			9.20	67%	Dry	12.80	10.60	13.67	74%	Dry							
1990			7.40	54%	Dry	1.50	10.19	13.77	51%	Dry				10.99		72%	Dry
1991			15.38	113%	Above Normal	19.90	16.48	23.43	120%	Above Normal							
1992			14.88	109%	Normal	20.23	16.80	24.42	123%	Above Normal							
1993			28.18	206%	Wet	35.95	32.37	45.23	227%	Wet							

DRAFT Appendix 2-A. Annual Precipitation and Water Year-Type at San Bernardino County Flood Control District Climate Stations in the Yucaipa Subbasin

Water Year Ending	Western Heights					Calimesa					Crafton			Wilson Creek			
	2915 (2235')	3099 (2140')	3356 (2125')	% of Mean	Water Year Type	3126A (2813')	3132 (2710')	3386 (2620')	% of Mean	Water Year Type	2890 (2606')	% of Mean	Water Year Type	3126 (2815')	3128B (2860')	% of Mean	Water Year Type
1994			11.26	82%	Below Normal	12.95	11.35	15.80	80%	Below Normal							
1995			27.22	199%	Wet	31.84	28.54	38.36	197%	Wet							
1996			9.13	67%	Dry	12.12	10.19	14.06	73%	Dry	6.12	55%	Dry				
1997			16.67	122%	Above Normal	20.13	16.93	19.81	114%	Above Normal	13.12	118%	Above Normal				
1998			25.55	187%	Wet	32.10	28.60	33.27	188%	Wet	21.04	189%	Wet				
1999			7.29	53%	Dry	11.02	9.87	8.66	59%	Dry	9.20	83%	Below Normal				
2000			6.40	47%	Critically Dry	12.42	9.63	2.45	49%	Critically Dry	7.12	64%	Dry				
2001			10.49	77%	Below Normal	5.11	9.65	1.61	33%	Critically Dry	4.56	41%	Critically Dry				
2002			2.46	18%	Critically Dry	5.26	5.27	5.18	31%	Critically Dry	3.32	30%	Critically Dry				
2003			17.57	129%	Above Normal	21.32	19.50	16.92	115%	Above Normal	13.76	123%	Above Normal				
2004			9.47	69%	Dry	9.50	11.10	6.61	54%	Dry	9.16	82%	Below Normal				
2005	29.04		31.39	221%	Wet	41.67	32.73	31.70	212%	Wet	17.80	160%	Wet				
2006	9.08		11.45	75%	Below Normal		12.52	12.89	76%	Below Normal	10.92	98%	Normal				
2007	4.48		3.34	29%	Critically Dry	6.42	5.53		36%	Critically Dry	5.53	50%	Critically Dry				
2008	11.64		13.34	91%	Normal	17.94	14.79		98%	Normal	12.20	109%	Normal				
2009	8.80		9.90	68%	Dry	14.08	10.47		74%	Dry	13.04	117%	Above Normal				
2010	15.45		17.80	122%	Above Normal	16.40	17.68		102%	Normal	15.49	139%	Above Normal				
2011	14.35		24.52	142%	Above Normal	27.90	22.74		152%	Wet	20.91	188%	Wet				
2012	8.73		9.57	67%	Dry	10.85	10.80		65%	Dry	9.37	84%	Below Normal				
2013	9.96		9.69	72%	Dry	10.06	9.60		59%	Dry	10.36	93%	Normal				
2014	15.00		6.55	79%	Below Normal	7.55	7.58		45%	Critically Dry	6.92	62%	Dry				
2015	10.88		13.06	88%	Below Normal	14.78	12.39		81%	Below Normal	12.72	114%	Above Normal				
2016	9.64		10.56	74%	Dry	12.71	10.31		69%	Dry	10.42	93%	Normal				
2017	17.76		19.12	135%	Above Normal	21.49	18.38		120%	Above Normal	16.94	152%	Wet				
2018	6.08		6.27	45%	Critically Dry	7.52	6.48		42%	Critically Dry	6.44	58%	Dry				
AVERAGE			**13.65**					**16.68**			**11.15**				**15.31**		

DRAFT Appendix 2-A. Annual Precipitation and Water Year-Type at San Bernardino County Flood Control District Climate Stations in the Yucaipa Subbasin

Water Year Ending	Gateway				Live Oak					Triple Falls Creek			Oak Glen			
	3129 (2660')	3129A (2660')	% of Mean	Water Year Type	3239 (2080')	3239A (2281')	3023 (1285')	% of Mean	Water Year Type	3015 (4680')	% of Mean	Water Year Type	3121 (3695')	2800 (2946')	% of Mean	Water Year Type
1953	12.71		84%	Below Normal						10.52	43%	Critically Dry				
1954	16.54		110%	Normal						20.04	82%	Below Normal				
1955	12.74		84%	Below Normal						21.89	89%	Below Normal				
1956	10.82		72%	Dry						18.60	76%	Below Normal				
1957	14.34		95%	Normal						19.04	78%	Below Normal				
1958	28.13		186%	Wet						43.92	179%	Wet				
1959	7.57		50%	Dry						13.85	57%	Dry				
1960	13.17		87%	Below Normal						20.88	85%	Below Normal				
1961	5.48		36%	Critically Dry						11.33	46%	Critically Dry				
1962	20.06		133%	Above Normal						27.10	111%	Above Normal				
1963	10.31		68%	Dry						17.48	71%	Dry				
1964	11.41		76%	Below Normal			7.66	66%	Dry	21.71	89%	Below Normal				
1965	14.92		99%	Normal	10.60		9.59	86%	Below Normal	22.47	92%	Normal				
1966	19.14		127%	Above Normal	13.34		13.47	115%	Above Normal	31.05	127%	Above Normal				
1967	23.80		158%	Wet	17.11		17.52	148%	Above Normal	40.75	166%	Wet				
1968	15.77		105%	Normal	9.72		9.71	83%	Below Normal	20.20	82%	Below Normal				
1969	28.50		189%	Wet	24.72		24.30	210%	Wet	49.90	204%	Wet				
1970	9.51		63%	Dry	7.59		7.42	64%	Dry	17.15	70%	Dry				
1971	12.19		81%	Below Normal	8.99		9.05	77%	Below Normal	19.16	78%	Below Normal				
1972	8.04		53%	Dry	5.98		5.67	50%	Critically Dry	14.33	58%	Dry				
1973	18.16		120%	Above Normal	14.96		14.76	127%	Above Normal	33.31	136%	Above Normal				
1974	11.41		76%	Below Normal	11.27		10.28	92%	Normal	20.54	84%	Below Normal				
1975	16.84		112%	Above Normal	10.36		9.29	84%	Below Normal	22.73	93%	Normal				
1976	17.44		116%	Above Normal	13.17		12.15	108%	Normal	26.73	109%	Normal				
1977	13.31		88%	Below Normal	11.73		9.74	92%	Normal	20.81	85%	Below Normal				
1978	32.91		218%	Wet	24.46		21.67	197%	Wet	52.09	213%	Wet				
1979	20.40		135%	Above Normal	18.67		16.77	152%	Wet	33.77	138%	Above Normal				
1980		19.28	128%	Above Normal	22.14		22.90	193%	Wet	46.38	189%	Wet				
1981		9.43	62%	Dry	7.41		6.89	61%	Dry	14.90	61%	Dry	14.68		81%	Below Normal
1982		19.21	127%	Above Normal	14.90		14.46	126%	Above Normal	33.37	136%	Above Normal	28.00		154%	Wet
1983		31.48	209%	Wet	25.39		24.16	212%	Wet	50.38	206%	Wet	42.51		234%	Wet
1984		9.56	63%	Dry	5.97		4.99	47%	Critically Dry	18.80	77%	Below Normal	15.90		88%	Below Normal
1985		13.70	91%	Normal	9.02		8.72	76%	Below Normal	22.02	90%	Below Normal	20.70		114%	Above Normal
1986		15.33	102%	Normal	11.24		9.25	88%	Below Normal	26.00	106%	Normal	19.00		105%	Normal
1987		12.52	83%	Below Normal	7.90		7.79	67%	Dry	19.29	79%	Below Normal	5.75		32%	Critically Dry
1988		14.04	93%	Normal	12.49		11.18	101%	Normal	21.46	88%	Below Normal	10.07		55%	Dry
1989		10.76	71%	Dry	9.38		8.08	75%	Dry	17.82	73%	Dry	16.40		90%	Normal
1990		9.71	64%	Dry	7.19		7.21	62%	Dry	17.71	72%	Dry	15.80		87%	Below Normal
1991		17.52	116%	Above Normal	13.95		13.34	117%	Above Normal	26.92	110%	Normal	26.55		146%	Above Normal
1992		19.37	128%	Above Normal	14.58		14.96	126%	Above Normal	30.78	126%	Above Normal	27.72		153%	Wet
1993		34.60	229%	Wet	26.96		25.57	225%	Wet	57.96	237%	Wet	47.23		260%	Wet

DRAFT Appendix 2-A. Annual Precipitation and Water Year-Type at San Bernardino County Flood Control District Climate Stations in the Yucaipa Subbasin

Water Year Ending	Gateway				Live Oak					Triple Falls Creek			Oak Glen			
	3129 (2660')	3129A (2660')	% of Mean	Water Year Type	3239 (2080')	3239A (2281')	3023 (1285')	% of Mean	Water Year Type	3015 (4680')	% of Mean	Water Year Type	3121 (3695')	2800 (2946')	% of Mean	Water Year Type
1994		10.00	66%	Dry	11.90		10.06	94%	Normal	18.76	77%	Below Normal	18.19		100%	Normal
1995		14.70	97%	Normal	15.76		20.49	155%	Wet	57.92	236%	Wet	46.83		258%	Wet
1996		10.89	72%	Dry	0.65		8.08	37%	Critically Dry	20.04	82%	Below Normal	16.40		90%	Normal
1997		16.06	106%	Normal	9.03		10.77	85%	Below Normal	30.39	124%	Above Normal	22.92		126%	Above Normal
1998		24.70	164%	Wet	17.22		22.29	169%	Wet	49.46	202%	Wet	44.58		246%	Wet
1999		7.63	51%	Dry	6.30		6.46	55%	Dry	11.32	46%	Critically Dry	14.61	6.76	59%	Dry
2000		11.10	74%	Dry	5.68		7.41	56%	Dry	17.12	70%	Dry	14.64	12.20	74%	Dry
2001		9.92	66%	Dry	9.96		10.38	87%	Below Normal	11.24	46%	Critically Dry	17.23	12.12	81%	Below Normal
2002		5.66	38%	Critically Dry	3.97		3.35	31%	Critically Dry	6.72	27%	Critically Dry	8.60	4.52	36%	Critically Dry
2003		19.47	129%	Above Normal	16.45		12.18	122%	Above Normal	14.28	58%	Dry	29.20	14.36	120%	Above Normal
2004		11.84	78%	Below Normal	11.58		9.16	89%	Below Normal	18.39	75%	Below Normal	9.57	10.08	54%	Dry
2005		32.70	217%	Wet			24.43	209%	Wet	34.14	139%	Above Normal		38.28	211%	Wet
2006		13.14	87%	Below Normal		10.30	9.52	85%	Below Normal	22.58	92%	Normal		13.72	76%	Below Normal
2007		6.56	43%	Critically Dry		4.13	3.31	32%	Critically Dry	9.71	40%	Critically Dry		5.48	30%	Critically Dry
2008		14.67	97%	Normal		11.93	9.46	91%	Normal	27.54	112%	Above Normal		16.20	89%	Below Normal
2009		12.11	80%	Below Normal		11.35	8.91	87%	Below Normal	18.11	74%	Dry		11.52	63%	Dry
2010		18.79	125%	Above Normal		17.25	15.12	138%	Above Normal	29.72	121%	Above Normal		18.15	100%	Normal
2011		25.09	166%	Wet		22.33	17.38	170%	Wet	36.82	150%	Wet		24.96	138%	Above Normal
2012		11.80	78%	Below Normal		8.84	4.34	56%	Dry	15.13	62%	Dry		11.68	64%	Dry
2013		5.25	35%	Critically Dry		8.82	1.54	44%	Critically Dry	15.69	64%	Dry		9.56	53%	Dry
2014		4.45	29%	Critically Dry		6.92	2.08	38%	Critically Dry	14.07	57%	Dry		7.80	43%	Critically Dry
2015		12.49	83%	Below Normal		10.37	2.72	56%	Dry	20.54	84%	Below Normal		11.56	64%	Dry
2016		11.11	74%	Dry		8.61	1.70	44%	Critically Dry	18.80	77%	Below Normal		11.51	63%	Dry
2017		17.18	114%	Above Normal		16.90	14.42	134%	Above Normal	16.04	65%	Dry		17.56	97%	Normal
2018		6.47	43%	Critically Dry		5.53	5.43	47%	Critically Dry	7.44	30%	Critically Dry		7.36	41%	Critically Dry
AVERAGE		**15.09**				**11.69**				**24.50**				**18.15**		

DRAFT Appendix 2-A. Annual Precipitation and Water Year-Type at San Bernardino County Flood Control District Climate Stations in the Yucaipa Subbasin

Water Year Ending	Basin Wide		
	% of Mean	Avg. Rainfall (inches)	Water Year Type
1953	62%	11.24	Dry
1954	103%	17.36	Normal
1955	88%	14.09	Below Normal
1956	74%	11.51	Dry
1957	87%	14.07	Below Normal
1958	178%	26.82	Wet
1959	56%	8.43	Dry
1960	92%	14.11	Normal
1961	41%	5.92	Critically Dry
1962	121%	18.59	Above Normal
1963	86%	13.51	Below Normal
1964	78%	10.90	Below Normal
1965	91%	12.39	Normal
1966	122%	16.93	Above Normal
1967	165%	22.94	Wet
1968	96%	13.79	Normal
1969	207%	30.04	Wet
1970	64%	9.04	Dry
1971	78%	11.29	Below Normal
1972	52%	7.24	Dry
1973	127%	18.16	Above Normal
1974	81%	11.66	Below Normal
1975	98%	14.06	Normal
1976	105%	15.00	Normal
1977	87%	12.47	Below Normal
1978	206%	29.36	Wet
1979	143%	21.15	Above Normal
1980	167%	23.99	Wet
1981	64%	9.70	Dry
1982	130%	18.98	Above Normal
1983	213%	31.75	Wet
1984	64%	8.96	Dry
1985	88%	12.76	Below Normal
1986	98%	14.18	Normal
1987	65%	9.26	Dry
1988	86%	12.93	Below Normal
1989	75%	11.36	Below Normal
1990	66%	9.31	Dry
1991	120%	18.32	Above Normal
1992	127%	19.12	Above Normal
1993	231%	34.51	Wet

DRAFT Appendix 2-A. Annual Precipitation and Water Year-Type at San Bernardino County Flood Control District Climate Stations in the Yucaipa Subbasin

Water Year Ending	Basin Wide		
	% of Mean	Avg. Rainfall (inches)	Water Year Type
1994	83%	12.69	Below Normal
1995	191%	27.97	Wet
1996	68%	9.74	Dry
1997	114%	16.16	Above Normal
1998	192%	27.71	Wet
1999	58%	8.78	Dry
2000	62%	8.91	Dry
2001	61%	9.10	Dry
2002	30%	4.76	Critically Dry
2003	114%	18.07	Above Normal
2004	72%	9.81	Dry
2005	196%	31.08	Wet
2006	84%	11.50	Below Normal
2007	37%	4.98	Critically Dry
2008	98%	13.57	Normal
2009	80%	11.13	Below Normal
2010	121%	16.90	Above Normal
2011	158%	22.24	Wet
2012	68%	9.55	Dry
2013	60%	8.32	Dry
2014	51%	7.21	Dry
2015	81%	11.22	Below Normal
2016	71%	9.62	Dry
2017	117%	17.75	Above Normal
2018	44%	6.40	Critically Dry
AVERAGE		**15.86**	= weighted average

Appendix 2-B

Information from CalGEM

DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES

CHECK LIST – WellStats ORPHAN WELL ENTRY PROJECT

API# 071-00041 Well Name/# 1 Operator ~~[redacted]~~ Colan Development Corp. Std.

PDOX	**Entry Date -** July and August 2003	**Initials -** Dave Curtis
WellStats	**Entry Date -** 5/10/05	**Initials -** CO
Map and Map Work	**Entry Date -** 5/26/2005 **Map #** W1-7	**Initials -** TH

- **Return Files(s) to Christina when Mapping is complete.**

(01745)

STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL AND GAS
SIXTH FLOOR
629 SOUTH HILL STREET
LOS ANGELES, CALIFORNIA

LOS ANGELES, CALIF.
MAY 2
6:30 PM
1933
ARCADE STA.

Colan Development Corp. Ltd.,

317 I. W. Hellman Bldg.,

Los Angeles, Cal.

Los Angeles, Calif.
REASON FOR NON-DELIVERY CHECKED
Moved-No Address ____ Refused ____
Unknown at Address ____
No Such Number ____ Deceased ____
Time Received-No Order ____
Carrier's Initials ____ Route No. ____

Attention Mr. Bert[illegible] Colan
RETURN General Manager.
WRITE
UNCLAIMED

LOS ANGELES
MAY 25
1933
CALIF.

8346

BEVERLY HILLS, CALIF.
MAY 4
4 PM
1933

629 South Hill Street
Los Angeles, California
May 2, 1933.

Colan Development Corp. Ltd.,
317 I. W. Hellman Building,
Los Angeles, Cal.

Attention Mr. Bert N. Colan,
General Manager.

Gentlemen:

Your attention is directed to the fact that this Division has not received log, history and core record covering operations at your well No. 1, Sec. 25, T. 1 S., R. 2 W., San Bernardino County.

Please file these records in duplicate on the enclosed forms as soon as possible.

Yours truly,

Deputy Supervisor.

CLB:EM3

STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES

DIVISION OF OIL AND GAS

R. D. BUSH
STATE OIL AND GAS SUPERVISOR

E. HUGUENIN, DEPUTY

629 South Hill Street
Los Angeles, California
May 2, 1933.

Colan Development Corp. Ltd.,
317 I. W. Hellman Building,
Los Angeles, Cal.

Attention Mr. Bert N. Colan,
General Manager.

Gentlemen:

Your attention is directed to the fact that this Division has not received log, history and core record covering operations at your well No. 1, Sec. 25, T. 1 S., R. 2 W., San Bernardino County.

Please file these records in duplicate on the enclosed forms as soon as possible.

Yours truly,

E. Huguenin

Deputy Supervisor.

FORM 100. 75066 12-29 20M
CALIFORNIA STATE PRINTING OFFICE

SUBMIT LOG IN DUPLICATE
FILL THIS BLANK IN WITH TYPEWRITER. WRITE ON ONE SIDE OF PAPER ONLY

STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES

DIVISION OF OIL AND GAS

DIVISION OF OIL AND GAS
RECEIVED
FEB 9 - 1932
LOS ANGELES, CALIFORNIA

LOG OF OIL OR GAS WELL

FIELD Yucaipa Valley San Bernadino Cty COMPANY Colan Development Corp Ltd

Sec. 25, T. ____, R. 2,1 South S.B. B. & M., Elevation 2700 ft Well No. 1.

In compliance with the provisions of Chapter 718, Statutes of 1915, as amended, the information given herewith is a complete and correct record of the present condition of the well and all work done thereon, so far as can be determined from all available records.

Signed Burt Y Colan

Date February 8th, 1932. Title Pres.
(President, Secretary or Agent)

The summary on this page is for the ORIGINAL condition of the well

OIL SANDS

1st sand from 2163 to 2165. 4th sand from ____ to ____
2d sand from ____ to ____ 5th sand from ____ to ____
3d sand from ____ to ____ 6th sand from ____ to ____

IMPORTANT WATER SANDS

1st sand from 340 to 390 3d sand from ____ to ____
2d sand from ____ to ____ 4th sand from ____ to ____

CASING RECORD

Size of Casing	Where Landed	Where Cut	Weight Per Foot	Threads Per Inch	Kind of Shoe	Make of Casing	Cemented Yes	Cemented No	Cemented Number of Sacks
11/5/4"	85 ft	-	60 lbs	10	-	Standard	Yes	-	30.

CEMENTING OR OTHER SHUT-OFF RECORD

Casing, Size	Sacks	Time Set	Method	Test and Result (Give water level and bailing results)

PLUGS AND ADAPTERS

Heaving Plug—Material ____ Length ____ Where set ____

Adapters —Material ____ Size ____

TOOLS

Rotary Tools were used from nil- ft. to 2168. ft.

Cable Tools were used from ____ ft. to ____ ft.

PERFORATIONS

State clearly whether a machine was used or casing was drilled in shop

From	To	Size of Holes	Number of Rows	Holes Per Foot	Machine—Shop
ft.	ft.				
ft.	ft.				
ft.	ft.				
ft.	ft.				
ft.	ft.				

Thirty days after completion well produced ____ barrels of oil per day.

The gravity of oil was ____ degrees Baumé. Water in oil amounted to ____ per cent.

NAMES OF DRILLERS

H.K.Weber.
J.S.Page.
Frank Dunn.

NAMES OF TOOL DRESSERS

Date drilling started June 1931. Date well was completed ____

FORMATIONS PENETRATED BY WELL

DEPTH TO Top of Formation	DEPTH TO Bottom of Formation	Thickness	Name of Formation

FORM 103. 76346 7-30 10M
CALIFORNIA STATE PRINTING OFFICE

STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES

DIVISION OF OIL AND GAS

DIVISION OF OIL AND GAS
RECEIVED
FEB 9 - 1932
LOS ANGELES, CALIFORNIA

History of Oil or Gas Well

FIELD YUCAIPA VALLEY, San Bernadino County COMPANY Colan Development Corp Ltd,

Sec. 25, T. ____, R. Two 1 South S.B. B. & M., Well No. 1.

Signed Burt Y Colan

Date February 8th 1932. Title Pres.

President, Secretary or Agent

It is of the greatest importance to have a complete history of the well. Please state in detail the dates of redrilling, together with the reason for the work and its results. If there were any changes made in the casing, state fully, and if any casing was "sidetracked" or left in the well, give its size and location. If the well has been dynamited, give date, size, position, and number of shots. If plugs or bridges were put in to test for water, state kind of material used, position, and results of pumping or bailing.

We took over the above mentioned well about June 1931, and cemented 85 feet of 11¾ surface casing with a 11¾ G.P. Blow out preventor attached at top. The bottom of hole at that time was approx 1980 feet with 375 feet of 3" drill pipe and bit at bottom, We cemented hole at approx 1450 ft and set 6-5/8" Whipstock and commenced drilling from that point, at 1975 ft set another Whipstock to sidetrack more junk at bottom, commenced drilling again to 2125 ft where we twisted off drill, pipe, leaving appox 100 ft drill pipe with collar and hughes bit, tried to fish out same but top of fish buried itself in a cavity , cemented up fish with 65 sacks of cement and started sidetracking, passed up fish and bottom of hole is now 2168 ft,.

Hard formation all the way with a few softer streaks of conglomerate, ### black lime, and brown shale hard shells and rock caps of country rock, considerable gas showings at 1750 ft and at intervals down to bottom of hole, had to carry very heavy mud at all times to hold down gas pressure, considerable trouble was incountered going in and out of hole from bridgeing omer at the various gas stratas, the hole was drilled with 9½" to 300 ft, and 7-5/8" Hughes Rock bit to bottom.

FORM 101-A. 82953 2-31 20M
CALIFORNIA STATE PRINTING OFFICE

SUBMIT IN DUPLICATE
FILL THIS BLANK IN WITH TYPEWRITER. WRITE ON ONE SIDE OF PAPER ONLY

STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES

DIVISION OF OIL AND GAS

CORE RECORD OF OIL OR GAS WELL

DIVISION OF OIL AND GAS
RECEIVED
FEB 9 - 1932
LOS ANGELES, CALIFORNIA

FIELD Yucaipa Valley COMPANY Colan Development Corp Ltd.

Sec. 25, T. ____, R 2, 1 South S.B. & M., Elevation 2700 Well No. 1.

In compliance with the provisions of Section 18, Chapter 718, Statutes of 1915, as amended, the information given herewith is a complete and correct record of all cores taken in this well to the depth on the accompanying log.

Signed Burt J Colan

Date February 8th 1932. Title Pres.
(President, Secretary or Agent)

DATE	MAKE OF BARREL	SIZE OF BARREL	FROM (DEPTH)	TO (DEPTH)	CORE RECOVERED	DESCRIPTION OF CORE	ETHER TEST	CONDITION OF CORE
1931.								
10-25	Hughes	5-5/8	2001	2005	2 ft	Hard bn shale, blk lime, rock		broken
10-30	"	"	2028	2031	1½ "	Brown shale, lime, country rock		
11-23	"	"	2077	2079	1 "	Greenish schist, Hard rk,		
12-19	"	"	2112	2115	1 "	Brown & Gray shale, & schist		
1932								
1-22	"	"	2147	2149	1¾ "	Hard formation, black lime,		
2-5	"	"	2158	2161	2 "	Brown Shale, streak oil sand,	slight cut	
2-6	"	"	2161	2164	2½ "	" : " black hard formation		

98

DIVISION OF OIL AND G
RECEIVED
NOV 21 1931
LOS ANGELES, CALIFORNI

STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL AND GAS
FERRY BUILDING

R. D. BUSH
STATE OIL AND GAS SUPERVISOR

SAN FRANCISCO

November 20, 1931.

Mr. E. Huguenin,
Deputy Supervisor,
Los Angeles, Cal.

Dear Sir:

Mail addressed to

Lon Bernard Jones Co

J. E. Grey, Agent,
Colan Development Corp., Ltd.,
Yucaipa, Cal.

has been returned by the post office with the notation "Moved, left no address".

Shall I request another appointment?

Yours truly,

R. D. Bush

State Oil and Gas Supervisor.

CALIFORNIA WELCOMES THE WORLD—TENTH OLYMPIAD 1932

629 South Hill Street
Los Angeles, California
July 17, 1931.

Mr. R. D. Bush,
State Oil and Gas Supervisor,
San Francisco, California.

Dear Sir:

I am informed that Yucaipa Oil Company, Ltd., well No. 1, Sec. 25, T. 1 S., R. 2 W., S. B. B. & M., San Bernardino County, was transferred to Fred Gray on February 1, 1931. On April 22, 1931, the well was transferred to Mr. F. H. Bowers and on May 15, 1931, the well was transferred to Colan Development Corporation, Ltd.

This information was contained in a letter dated July 9, 1931, from Colan Development Corporation, and a letter dated June 23, 1931, from Fred H. Gray, and confirmed in a conversation with Mr. Bowers and Mr. Bert Colan. Our records have been changed accordingly.

Request for the designation of agent should be addressed to Colan Development Corporation, Ltd., 317 I. W. Hellman Building, Los Angeles, Cal.

Yours truly,

Deputy Supervisor.

Corrections Made as Follows	CLB	EHS
Weekly Summaries		
121		
Elev. and Loc. Cards		
Production Reports		
Well Records: Folders		
Well Records: Reports		
Pog Models		
Graphics		
Field Maps		

D. Leslie Lord, Sec'y-Treas.
Thos. L. Colangelo, Vice-Pres.

COLAN DEVELOPMENT CORPORATION, Ltd.
BERT N. COLAN, Gen'l Mgr.
317 I. W. Hellman Bldg.
LOS ANGELES, CALIF.

Field Address
DIVISION OF OIL AND GAS

RECEIVED
JUL 10 1931
LOS ANGELES, CALIFORNIA

July 9th, 1931.

Division of Oil & Gas
of the State of California
629 South Hill Street
Los Angeles California

Gentlemen:

In response to your request this will advise you that on May 15th, 1931, the Colan Development Corporation succeeded to the rights of F. H. Bowers on lease covering ground upon which an oil well was formerly attempted by Fred Gray, on a portion of Section 25 Twp. 1 S. Range 2 West SBM at Yucaipa California.

On account of steel which was twisted off at the -time, the Colan Development Corporation was obliged to offset and drill an entirely new hole which is now at a depth of approximately 1950 feet, and is at present encountering very hard formation, and the drilling is very slow.

The company contempletes drilling to a depth of 2500 feet at which depth it has been estimated by geologists, oil should be encountered in commercial quantities.

Trusting this information meets with your request and assuring you of our co-operation, we are

BLC/ B

Very truly yours,

Colan Development Corporation

By Bert N Colan

Transf. from Fred Gray to F. H. Bowerss

April 22, 1931

Transf. from Yucaipa to Fred Gray on Feb. 1, 1931

DIVISION OF OIL AND GAS
RECEIVED
JUN 26 1931
LOS ANGELES, CALIFORNIA

June 23 1931.

E.Huguenin Esq;

Div.of Oil and Gas;

State of California;

Dear Sir;

We would like to inform you that the well in Sec.25 T.Township/1 S. Rge 2 w.S.B.B.& M San Bernardino County,is now being drilled by Colin Development Co.whose office is 314 I.W.Hellman bldg Los Angeles.

They will be glad to comply with any requests you may make re information that the law requires of them.

Yours Respectfully,

Fred H.Gray.

Fred H.Gray.
234 E.Laurel
Compton Calif.

FORM 100. 73066 12-29 20M
CALIFORNIA STATE PRINTING OFFICE

Cyclan Development Corp. Ltd. #1

SUBMIT LOG IN DUPLICATE
FILL THIS BLANK IN WITH TYPEWRITER. WRITE ON ONE SIDE OF PAPER ONLY

STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES

DIVISION OF OIL AND GAS

DIVISION OF OIL AND GAS
RECEIVED
JAN 13 1931
LOS ANGELES, CALIFORNIA

LOG OF OIL OR GAS WELL

Yucaipa Oil Co. Ltd.

FIELD (Yucaipa) San Bernardino County COMPANY Fred H. Gray)

Sec. 25, T. 1 S, R. 2, West San Bernardino B. & M., Elevation 2500 Well No. 1

In compliance with the provisions of Chapter 718, Statutes of 1915, as amended, the information given herewith is a complete and correct record of the present condition of the well and all work done thereon, so far as can be determined from all available records.

Signed Fred H Gray

Date Jan. 6. 1931

Title Operator
Reference to file of d(President, Secretary or Agent)

The summary on this page is for the ORIGINAL condition of the well.

Oil Sands	Chief Section	Cards	Forms 114	Forms 121
1st sand from ... to ...	None			
2d sand from ... to ...				
3d sand from ... to ...				
4th sand from ... to ...				
5th sand from ... to ...				
6th sand from ... to ...				

Important Water Sands

1st sand from ... to ...
2d sand from ... to ...
3d sand from ... to ...
4th sand from ... to ...

Casing Record

Size of Casing	Where Landed	Where Cut	Weight Per Foot	Threads Per Inch	Kind of Shoe	Make of Casing	Cemented: Yes	Cemented: No	Cemented: Number of Sacks
No Casing Set									

Cementing or Other Shut-off Record

Casing, Size	Sacks	Time Set	Method	Test and Result (Give water level and bailing results)
				None

Plugs and Adapters

Heaving Plug—Material None Length ... Where set ...

Adapters —Material " Size ...

Tools

Rotary Tools were used from 0 ft. to 2000 ft.

Cable Tools were used from None ft. to ... ft.

Perforations

State clearly whether a machine was used or casing was drilled in shop

From	To	Size of Holes	Number of Rows	Holes Per Foot	Machine—Shop
ft.	ft.	None			
ft.	ft.				
ft.	ft.				
ft.	ft.				
ft.	ft.				

Thirty days after completion well produced ... barrels of oil per day.

The gravity of oil was ... degrees Baumé. Water in oil amounted to ... per cent.

Names of Drillers
H. V. Wilson
J. Galantine
W. T. Jones.

Names of Tool Dressers

Date drilling started Oct. 4. 1928.

Date well was completed ...

Formations Penetrated by Well

Depth to: Top of Formation	Depth to: Bottom of Formation	Thickness	Name of Formation

FORM 103. 72349 7-30 10M
CALIFORNIA STATE PRINTING OFFICE

STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES

DIVISION OF OIL AND GAS

DIVISION OF OIL AND GAS
RECEIVED
JAN 3 - 1931
LOS ANGELES, CALIFORNIA

History of Oil or Gas Well

FIELD SAN BERNARDINO COUNTY COMPANY Yucaipa Oil Co. Ltd

Sec. 25, T. 1 So., R. 2 W., S. B. B. & M., Well No. One (1)

Signed Fred H Gray

Date December 30-19-30 Title

President, Secretary or Agent

It is of the greatest importance to have a complete history of the well. Please state in detail the dates of redrilling, together with the reason for the work and its results. If there were any changes made in the casing, state fully, and if any casing was "side-tracked" or left in the well, give its size and location. If the well has been dynamited, give date, size, position, and number of shots. If plugs or bridges were put in to test for water, state kind of material used, position, and results of pumping or bailing.

Make	Model	Cross section	Cards	114	

Hole shot at 1340 feet. Steel in the hole. Unknown.
100 lbs. of 80% Gelatine.
Hole shot at 1576 feet. Rotary disc lost in hole. Tried to break disc to pieces. Failed.
100 lbs. of 80% Gelatine used.
Hole shot second time at 1576 to break up disc bit.
100 lbs. of 80% Gelatine and 15 quarts of nitro-glycerin. 30 ft. combination shot. Broke up disc bit and fished same out of hole.
Hole shot 1926 feet. Boulder riding bit, shot same out of way.
200 lbs. of 80% Gelatine.
78 feet of 3" drill pipe and drill collar were side-tracked at 1839 to 1927. Never touched same while side-tracking.
String of 3" Drill Pipe Froze 60 ft. off bottom - Backed out all but 360 ft. which is in Hole at present time.

90

DIVISION OF OIL AND GAS
RECEIVED
JAN 3 - 1931
LOS ANGELES, CALIFORNIA

LOG OF THE GRAY WELL NO. 1

Section 25, Township 1 S, R 2 W.
San Bernardino B and M.

0 to 18 ft.	Surface soil	748-753 ft.	Gray sand,
18 - 35	Conglomerate		streaks of lime
35 - 52	Sand stone	753-758	Tough shale
52 - 56	Hard Sand	758-763	Conglomerate
56 - 70	Conglomerate	763-767	Lime
70 - 90	Gray sand	767-775	Conglomerate
90 - 106	Gravel & Boulders	775-776	Shell
106- 129	Red clay	776-784	Hard sand, gas
129- 159	Sand Gravel		at this depth
159- 188	Blue shale	784-791	Conglomerate
188- 237	Sand & Boulders	791-798	Tough shale
237- 324	Hard sand	798-806	Conglomerate
324- 329	Sand & Gravel	806-815	Sandy shale
329- 333	Hard sand	815-820	Hard sandy shale
333- 348	Sandy shale	Gas blow plugged	drill collar 11
348- 378	Sand & Boulders	ft. while making	con.
378- 397	Hard sand	820-830	Hard sand, streaks
397- 430	Conglomerate		of lime
430- 465	Sand shale	830-839	Sandy shale, gas
465- 473	Hard shale		showing
473- 505	Sticky shale	839-840	Shell
505- 536	Conglomerate	840-849	Sticky shale,
536- 551	Sand shale		streaks of sand
551- 552	Shell	849-859	Conglomerate
552- 576	Conglomerate	859-860	Shell
576- 577	Shell	860-864	Hard sand
577- 580	Sand	864-868	Conglomerate
580- 581	Shell	868-874	Lime
581- 585	Hard sand	874-877	Tough Shale
585- 586	Shell	877-879	Shell
586- 591	Conglomerate	879-890	Conglomerate
591- 596	Tough shale	890-904	Shale
596- 600	Hard sand	904-921	Sandy shale
600- 611	Conglomerate	921-922	Shell
611- 612	Shell	922-929	Hard sand
612- 615	Sandy shale	929-938	Sandy shale
615- 620	Brown shale	938-944	Conglomerate
620- 623	Gas sand	944-951	Hard sand
623- 633	Tough shale	951-953	Shell
633- 636	Sandy shale	953-960	Conglomerate
636- 638	Shell	960-961	Shell
638- 645	Hard sand shale	961-965	Tough shale
645- 650	Conglomerate	965-966	Shell
650- 654	Lime	966-978-	Conglomerate
654- 664	Tough shale	978-983	Sticky shale
664- 678	Sandy shale	983-984	Shell
678- 682	Hard sand	984-986	Conglomerate
682- 683	Shell	986-992	Gray sand
683- 695	Lime	992-1004	Hard sand
695- 699	Tough shale	1004-1007	Blue shale,
699- 709	Hard sand		streaks of lime
709- 712	Shell	1007-1010	Sand streaked
712- 718	Conglomerate		with lime
718- 726	Sandy shale	1010-1014	Shell with lime
726- 730	Hard sand, Lime Streaks	1014-1018	Hard lime
730- 748	Sand shale	1018-1028	Conglomerate

85

1028-1038 ft.	Sandy shale
1038-1050	Conglomerate
1050-1053	Shell
1053-1060	Hard sandy shale
1060-1061	Shell
1061-1068	Conglomerate
1068-1080	Sandy shale
1080-1090	Hard sand
1090-1098	Conglomerate
1098-1100	Shell
1100-1112	Lime
1112-1113	Shell
1113-1127	Conglomerate
1127-1128	Shell
1128-1137	Lime conglomerate
1137-1139	Lime
1139-1157	Sandy shale
1157-1162	Hard sand
1162-1165	Hard sandy shale
1165-1178	Conglomerate
1178-1183	Hard sandy shale
1183-1191	Tough shale
1191-1192	Shell
1192-1204	Lime
1204-1208	Conglomerate
1208-1210	Tough shale
1210-1221	Conglomerate
1221-1231	Sandy shale,lime
1231-1238	Lime
1238-1243	Shale
1243-1258	Lime
1258-1261	Shale
1261-1304	Lime
1304-1311	Coring no recovery
1311-1340	Shell
1340-1341	Hard shell
1341-1349	Shell
1349-1350	Break in formation
1350-1366	Lime and sand
1366-1367	Break in formation
1367-1383	Lime
1383-1387	Shale with change
1387-1393	Blue shale
1393-1395	Sandy shale
1395-1396	Shell
1396-1400	Sand shale
1400-1401	Shell
1401-1408	Shell with break
1408-1409	Shale
1409-1434	Lime and streaks of shale
1434-1449	Lime conglomerate
1449-1468	Lime streaked with shale
1468-1501	Lime
1501-1528	Lime streaked shale
1528-1548	Lime
1548-1555	Blue shale
1555-1558	Hard sand
1558-1560	Lime
1560-1568 ft.	Blue shale
1568-1579	Hard sand, shale streaked
1579-1581	Lime and hard sand
1581-1582	Lime
1582-1585	Hard sand
1585-1588	Lime stone
1588-1589	Hard sand and lime
1589-1592	Lime
1592-1594	Lime, shale, some shells
1594-1602	Blue shale & lime
1602-1604	Hard sand
1604-1607	Brown shale
1607-1611	Hard sand, gray color with thin breaks
1611-1617	Hard sand, gas showing
1617-1618	Hard sand, marine shells
1618-1629	Brown shale
1629-1634	Shell
1634-1644	Hard & soft streaks
1644-1656	Hard shells with shale breaks
1656-1657	Break and soft
1657-1662	Hard sand shale, Streak brown sandy shale
1662-1678	Streaked thin shell
1678-1694	Hard sand
1694-1696	Soft break in formation
1696-1702	Blue shale
1702-1704	Lime & shells
1704-1715	Blue shale streaked hard sand, sticky shale.
1715-1730	Sticky Blue shale streaked hard sand
1730-1738	Blue shale
1738-1742	Shell
1742-1746	Lime streaked
1746-1750	Shell
1750-1767	Lime shale
1767-1792	Blue shale streaked with lime.
1792-1795	Hard gray sand with sofe breaks
1795-1806	Hard sand
1806-1823	Brown shale with hard sand streaks
1823-1828	Brown shale streaks with hard sand
1828-1838	Brown shale
1838-1844	Brown shale and layers of hard sand
1844-1855	Hard sand gray

1855-1860 ft.	Hard brown shale with thin shells
1865-1873	Shell
1873-1875	Hard gray sand - good gas pressure
1875-1878	Hard sand, gas showing in ditch
1878-1883	Hard sand - hard fine sand
1883-1886	Hard sand, sea shells, gas below shells
1886-1888	Hard sand, thin layers of B shale
1888-1891	Conglomerate - little gas
1891-1892	Shell
1892-1894	Lime streaks blue shale
1894-1902	Shell
1902-1903	Sea shells streaks green shale
1903-1904	Hard shell
1904-1905	Shell
1905-1906	Shell thin break. Good gas showing
1906-1909	Shell
1909-1911	Shell broke to oil sand Gas
1911-1913	Shell-Gas on ditch
1913-1915	Shell
1915-1916	Hard conglomerate-sea - shells
1916-1918	Conglomerate hard sand
1918-1923	Hard sand
1923-1924	Shell
1924-1926	Shale
1926-1929	Shell
1929-1935	Shell
1935-1937	Shell and hard sand
1937-1938	Shale
1938-1939½	Brown shale
1939½-1940	Shell
1940-1941	Shale to shell
1941-1943	Shell
1943-1949	Shell lime streaked brown shale
1949-1959	Lime streaked blue shale
1959-1963	Shell and shale
1963-1970	Shell
1970-1972	Break
1972-1975	Blue shale
1975-1976	Black Lime
1976-1982	Blue shale shells intermittent black lime
1982-1988	Shale and shells
1988-1991	Blue sand shale
1991-1992	Shell
1992-1997	Tough brown shale - good cut in this shale

611 New Orpheum Building
Los Angeles
December 30, 1930

Mr. R. D. Bush,
State Oil and Gas Supervisor,
San Francisco, Calif.

Dear Sir:

Fred H. Gray well No. 1, Sec. 25, T. 1 S., R. 2 W., San Bernardino County, was transferred to Yucaipa Oil Company, Limited, 519 Walter P. Story Building, Los Angeles, California, effective November 17, 1930. This information was contained in a letter received from Fred H. Gray dated December 19, 1930, and confirmed in a letter from Yucaipa Oil Company, Limited, dated December 26, 1930. We are, therefore, changing our records accordingly. Please request Yucaipa Oil Company, Limited, to appoint an agent.

Yours truly,

Deputy Supervisor.

EH-GH

Wallace Collins
Joshua

Corrections Made as Follows	By Whom
Weekly Summaries	B
131	
Elev. and Loc. Cards	
Production Reports	✓ EHG
Well Records: Forms	
Well Records: Reports	✓ aff
Peg Models	
Graphics	✓ E.J.K.
Field Maps	

W.C. Book - E.J.K.
12/31/30

YUCAIPA OIL COMPANY LIMITED.
519 Walter P Story Building,
Los Angeles. Calif:
December 26th,1930.

DIVISION OF OIL AND GAS
RECEIVED
DEC 30 1930
LOS ANGELES, CALIFORNIA

E Huggenin Esq,
Division of Oil & Gas,
611 New Orpheum Building,
Los Angeles. Calif:

Dear Sir,

Replying to your letter of the 22nd Inst,re Gray Well.

This is being drilled by the Yucaipa Oil Company Limited, of which I am the General Manager, and was transferred to us on November 17th.

I have had the property surveyed, and will file a corrected location within the next few days.

We were compelled to sidetract a junked hole at 1400 feet, so will give your department a correct log from that depth.

All notices for the present will be received at the above address.

Yours very truly,

WGT/JHS.

Oct. 9,1928.

DIVISION OF MINES & MINING
RECEIVED
OCT 10 1928
Department of Petroleum and Gas
LOS ANGELES, CALIFORNIA

Division of Mines and Mining,
611 New Orpheum Bldg.,
Los Angeles,Calif.

Gentlemen:

Referring to your letter of Oct. 3rd, concerning the drilling operations on the Clyde Ranch in Section 25, Twp. I, S. R 2 W. S.B.B & M., I beg to advise you that I am assuming all the responsibility in connection with these operations and will be guided in my operations by the matters referred to in your communication of Sept. 21st, to my attorney John C.Miles.

Any further information I can furnish you from time to time I will be glad to do so. In the meantime,I remain

Yours very truly,

F.HG:M

611 New Orpheum Bldg.,
Los Angeles
September 13, 1928.

Mr. R. D. Bush,
State Oil and Gas Supervisor,
San Francisco, California.

Dear Sir:

The well carried in our records under the name of J. W. McPhearson well No. 1, Sec. 25, T. 1 S., R. 2 W., S.B.B.& M., San Bernardino County, was transferred on August 24, 1925 to Mr. Fred H. Gray whose address is Box 263, Compton, California.

This information was contained in a letter received from J. W. McPhearson dated September 10, 1928.

We are therefore changing our records accordingly. Please request Mr. Gray to appoint an agent.

Yours truly,

EH-MC

Deputy Supervisor.

Corrections Made as Follows		By Whom
Weekly Summaries		
121	✓	H
Elev. and Loc. Cards		
Production Reports		
Well Records	Folders ✓	E.A.A.R.
	Reports	
Peg Models		
Graphics		
Field Maps W.C.	✓	F.L.C.

W. C. BK.
F. L. C.

FORM 111. 53572 8-27 5M
CALIFORNIA STATE PRINTING OFFICE

STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES

DIVISION OF MINES AND MINING

PETROLEUM AND GAS

Report on Proposed Operations

No. P-1-16285

Los Angeles, Cal. Oct. 25, 1927

Mr. O. W. McPhearson

Yucaipa, Cal.

Agent for W. McPHEARSON Company

DEAR SIR: Should be J.

Your proposal to drill Well No. 1

Section 25, T 1 S, R 2 W, S.B. B. & M., — Oil Field, San Bernardino County,

dated Oct. 7, 1927 received Oct. 21, 1927, has been examined in conjunction with records filed in this office.

Present conditions as shown by the records and the proposal are as follows:

THE NOTICE STATES:

"The well is 2600' N. and 700' W. from Southeast corner of Sec. 25.
The elevation of the derrick floor above sea level is 2600'.
We estimate that the first productive oil or gas sand should be encountered at a depth of about 500', more or less."

PROPOSAL:

"We propose to use the following strings of casing either cementing or landing them as here indicated:

Size of Casing Weight New or Second Hend Depth Landed or cemented

Casing program will depend upon formations encountered. Will core frequently.

It is understood that if changes in this plan become necessary we are to notify you before cementing or landing casing."

RECOMMENDATION:

This department has not sufficient data available upon which to base an estimate of the depth at which oil or gas bearing formations should be encountered in this vicinity, nor the depth at which a water shut-off should be effected.

The proposed drilling program is approved, however, subject to the recommendations that all possible steps shall be taken to determine the fluid content of porous formations encountered.

THIS DEPARTMENT MUST BE NOTIFIED AS FOLLOWS:

1. When a showing of oil or gas is encountered.
2. Before landing or cementing any casing.
3. To witness a bailing test of each possible water shut-off. Copies of our form 106 for this notification are enclosed herewith.

We would appreciate the filing of a memorandum log of the well with the notice of test of water shut-off.

cc--Company 5/17/28 Mc Pherson - Dec'd

T. D 400'. no casing; no important shows of oil
Mc Pherson said he is leaving a lease and
is in charge but that
others associated with him
are attempting to take possession
without his consent. He does
not know ownership changed

HVD:ML

J.S.

R. D. BUSH,
State Oil and Gas Supervisor

By ..... Deputy

FORM 105. 43484 2-26 10M

RECEIVED
OCT 21 1927
Department of Petroleum and Gas

CALIFORNIA STATE MINING BUREAU

DEPARTMENT OF PETROLEUM AND GAS

071-00041

NOTICE OF INTENTION TO DRILL NEW WELL

This notice must be given before drilling begins

Colon Development Corp., Ltd. Jucaipa Cal. Oct 7 1927

MR. E. Haguenin

Deputy State Oil and Gas Supervisor

Los Angeles Cal.

DEAR SIR:

In compliance with Section 17, Chapter 718, Statutes of 1915, as amended, notice is hereby given that it is our intention to commence the work of drilling well number 1 Section 25 T. 1 S. R. 2 W., ~~S.~~ B. & M., ... Oil Field, San Bernardino County.

The well is 2800 feet N. ~~or S.~~, and 700 feet ~~E. or~~ W. from So. East Corner of Sec 25
(Give location in distance from section corners or other corners of legal subdivision)

The elevation of the derrick floor above sea level is 2600 feet.

We propose to use the following strings of casing, either cementing or landing them as here indicated:

Size of Casing, Inches	Weight, Lb. Per Foot	New or Second Hand	Depth	Landed or Cemented
Casing program will depend upon formations encountered. Will Core frequently.				

It is understood that if changes in this plan become necessary we are to notify you before cementing or landing casing.

We estimate that the first productive oil or gas sand should be encountered at a depth of about 500 feet, more or less. Second 2200

Respectfully yours,

Address R.R. NO. 2 Box 30 Jucaipa Calif

J. W. McLearnon
(Name of ~~Company~~ or Operator)

Telephone number.....

By J. W. McL

Address notice to Deputy State Oil and Gas Supervisor in charge of district where well is located

Reference to file of data

Maps	Mineral	Cross section	Cards	Forms	
WC F.L.C.	off.			✓	✓

W.C.
B.K.
F.L.C

Lease consists of: 100 Acres
Topo. Sh. #66
E.9.K.

Appendix 2-C

Water Budget Analysis

Table 2C-1: Temperature Lapse Rates used in the YIHM								
Month	Minimum temperature (T_{min})						Maximum temperature (T_{max})	
	Temperature lapse rate (degrees C/ft.)			Linear regression coefficient of determination			Temperature lapse rate (degrees C/ft.)	Linear regression coefficient of determination
	Low-elevation	Mid-elevation	High-elevaation	Low-elevation	Mid-elevation	High-elevation		
January	-0.000267	-0.009122	-0.001069	0.375161	0.949365	0.254554	-0.006274	0.986521
February	-0.002090	-0.008838	-0.002369	0.410287	0.951706	0.254554	-0.006286	0.986626
March	-0.002894	-0.008079	-0.002473	0.607330	0.944339	0.618303	-0.005846	0.981146
April	-0.003499	-0.007159	-0.002392	0.728538	0.935666	0.555306	-0.005798	0.965877
May	-0.004425	-0.006001	-0.001270	0.831409	0.937605	0.225797	-0.004960	0.906887
June	-0.002725	-0.004569	-0.000979	0.636168	0.804955	0.104089	-0.004187	0.784555
July	-0.000511	-0.004723	-0.000030	0.038804	0.789060	0.000088	-0.004783	0.795607
August	-0.000715	-0.005240	-0.000809	0.079302	0.789060	0.071081	-0.005111	0.839502
September	-0.000432	-0.007149	-0.001582	0.019373	0.890501	0.205146	-0.005646	0.904514
October	-0.001161	-0.008536	-0.000633	0.134185	0.940326	0.049203	-0.005988	0.937825
November	-0.000545	-0.008684	-0.001768	0.028359	0.942844	0.341591	-0.006120	0.978148
December	0.000048	-0.008963	-0.001861	0.000249	0.946138	0.375161	-0.005976	0.986968

Data provided by the USGS

DRAFT

Table 2C-2: Historical Water Budget for the Yucaipa Subbasin

Water Year[A]	Water Year Type	Individual Components of the Basin Water Budget Reported in Units of Acre-Feet (AF)																								
		Inflows to Groundwater System (AF)											Outflows from Groundwater System												Change in Storage	
					Subsurface Inflows										Subsurface Outflows											
		Stream Leakage	Return Flows[B]	Precipitation Recharge	From Beaumont Basin	From San Timoteo Basin	From SBBA	From Crafton Hills	From Yucaipa Hills	From San Bernardino Mountains	*Subtotal*	Surface Water Spreading	Total Basin Inflows	ET	To Beaumont Basin	To San Timoteo Basin	To SBBA	To Crafton Hills	To Yucaipa Hills	To San Bernardino Mountains	*Subtotal*	GW Discharges to Streams	GW Extractions[C]	Surface Water Diversions[D]	Groundwater Discharge to Surface[E]	Total Basin Outflows	Annual	Cumulative
1965	Normal	9,416	2,101	2,209	2,023	6,511	269	47	2,732	1,455	*13,036*	0	26,761	2,340	740	8,980	3,281	0	1,925	13	*14,940*	2,199	9,899	0	7	29,385	-2,624	**-2,624**
1966	Above Normal	10,441	2,101	5,153	2,115	6,449	248	46	2,791	1,596	*13,243*	0	30,938	2,697	741	8,954	3,464	0	1,958	14	*15,132*	2,629	11,609	31	9	32,108	-1,169	**-3,794**
1967	Wet	10,656	2,101	4,957	2,212	6,382	234	44	2,832	1,705	*13,409*	0	31,122	2,399	760	8,944	3,516	0	1,954	13	*15,187*	2,792	11,057	36	10	31,481	-359	**-4,153**
1968	Normal	9,688	2,107	3,166	2,232	6,379	229	43	2,861	1,837	*13,581*	0	28,541	2,611	774	8,974	3,356	0	1,945	13	*15,063*	2,422	11,106	16	8	31,225	-2,684	**-6,837**
1969	Wet	12,421	2,101	11,878	2,251	6,300	209	43	3,016	2,374	*14,193*	0	40,593	2,821	766	8,872	3,650	0	2,072	15	*15,375*	3,967	9,658	127	11	31,959	8,634	**1,796**
1970	Dry	10,341	2,515	4,557	2,148	6,313	185	41	3,187	2,298	*14,172*	0	31,585	2,925	737	8,958	3,490	0	2,072	17	*15,275*	3,018	9,861	111	11	31,200	385	**2,181**
1971	Below Normal	10,382	2,439	4,088	2,204	6,327	174	41	3,075	2,453	*14,275*	0	*31,184*	2,774	733	8,981	3,512	0	2,059	18	*15,303*	3,038	9,849	142	10	*31,117*	67	**2,248**
1972	Dry	10,002	2,446	3,302	2,223	6,356	169	41	3,016	2,295	*14,100*	0	*29,850*	3,004	747	9,018	3,494	0	2,019	21	*15,299*	2,783	10,818	156	8	*32,068*	-2,218	**29**
1973	Above Normal	10,912	2,439	5,141	2,197	6,286	165	41	2,951	2,241	*13,881*	0	*32,373*	2,478	746	9,003	3,665	0	2,019	20	*15,452*	3,391	10,411	217	10	*31,960*	413	**442**
1974	Below Normal	10,663	2,392	4,457	2,128	6,267	161	40	3,036	2,070	*13,701*	0	*31,214*	2,888	736	9,001	3,688	0	2,007	20	*15,453*	3,109	11,484	206	10	*33,150*	-1,936	**-1,494**
1975	Normal	10,059	2,571	3,316	1,975	6,263	157	39	3,005	2,021	*13,459*	0	*29,405*	2,546	718	9,009	3,640	0	1,977	19	*15,362*	2,748	10,501	133	9	*31,299*	-1,894	**-3,388**
1976	Normal	10,530	2,641	4,050	1,820	6,282	156	39	2,958	2,077	*13,334*	0	*30,556*	2,662	701	9,020	3,709	0	1,961	18	*15,410*	2,747	10,366	88	8	*31,282*	-726	**-4,114**
1977	Below Normal	10,098	2,634	4,238	1,720	6,246	160	39	2,929	2,093	*13,187*	0	*30,158*	2,753	687	9,020	3,632	0	1,956	19	*15,313*	2,716	9,906	100	9	*30,798*	-640	**-4,754**
1978	Wet	13,296	2,634	16,145	1,883	6,210	158	38	3,311	2,517	*14,118*	0	*46,193*	3,137	695	8,931	3,896	0	2,205	19	*15,747*	4,909	10,002	220	14	*34,030*	12,163	**7,409**
1979	Above Normal	12,654	2,634	9,423	1,845	6,251	139	35	3,642	2,618	*14,530*	0	*39,242*	3,072	698	9,016	3,967	0	2,296	23	*16,001*	4,675	9,764	267	18	*33,797*	5,445	**12,854**
1980	Wet	15,176	3,278	15,677	1,580	6,351	126	34	3,958	3,033	*15,081*	0	*49,212*	3,550	654	9,010	4,017	0	2,485	25	*16,191*	6,449	10,075	332	20	*36,616*	12,596	**25,450**
1981	Dry	12,933	3,483	6,838	1,187	6,413	119	32	4,029	2,842	*14,623*	0	*37,877*	3,860	612	9,083	3,853	0	2,419	27	*15,993*	4,774	10,198	286	17	*35,129*	2,748	**28,198**
1982	Above Normal	13,988	3,483	8,545	927	6,452	119	33	3,823	2,987	*14,340*	0	*40,355*	3,152	592	9,079	4,104	0	2,370	30	*16,176*	5,490	8,880	299	19	*34,017*	6,338	**34,536**
1983	Wet	14,684	3,483	11,157	788	6,457	116	31	3,857	2,913	*14,163*	0	*43,486*	3,110	598	9,100	4,248	0	2,427	29	*16,402*	6,184	8,353	332	22	*34,405*	9,081	**43,617**
1984	Dry	12,179	3,492	6,583	684	6,475	108	29	3,978	2,581	*13,855*	0	*36,110*	4,117	597	9,184	4,005	0	2,429	27	*16,243*	4,257	10,278	279	18	*35,191*	918	**44,535**
1985	Below Normal	12,335	5,337	6,275	652	6,467	102	29	3,861	2,555	*13,668*	0	*37,615*	3,874	601	9,162	4,081	0	2,402	27	*16,274*	4,297	10,533	268	18	*35,264*	2,351	**46,886**
1986	Normal	12,023	5,961	5,568	513	6,459	98	29	3,741	2,505	*13,346*	0	*36,898*	3,857	685	9,176	4,042	0	2,343	26	*16,272*	4,106	9,823	257	19	*34,333*	2,564	**49,450**
1987	Dry	11,289	5,961	4,170	438	6,430	96	30	3,640	2,385	*13,020*	0	*34,439*	3,878	698	9,179	4,037	0	2,299	24	*16,237*	3,593	9,987	230	19	*33,945*	494	**49,944**
1988	Below Normal	11,108	5,978	3,721	400	6,411	99	30	3,533	2,304	*12,778*	0	*33,584*	3,738	762	9,198	4,057	0	2,260	23	*16,300*	3,459	10,857	218	21	*34,593*	-1,008	**48,936**
1989	Below Normal	10,602	5,961	3,336	382	6,375	106	30	3,433	2,122	*12,448*	0	*32,347*	3,885	818	9,166	4,004	0	2,215	22	*16,225*	3,142	11,266	194	20	*34,733*	-2,385	**46,551**
1990	Dry	10,285	2,208	2,023	442	6,391	114	31	3,349	1,953	*12,280*	0	*26,796*	3,689	822	9,156	3,914	0	2,170	21	*16,082*	2,891	11,626	172	19	*34,479*	-7,683	**38,868**
1991	Above Normal	11,275	942	5,677	654	6,429	124	31	3,334	1,959	*12,531*	0	*30,426*	3,628	683	9,084	4,031	0	2,186	19	*16,003*	3,403	11,657	198	16	*34,906*	-4,480	**34,387**
1992	Above Normal	11,389	945	5,911	832	6,464	127	31	3,430	1,986	*12,871*	0	*31,116*	3,662	656	9,131	4,083	0	2,243	18	*16,131*	3,596	11,743	235	16	*35,383*	-4,267	**30,120**
1993	Wet	14,133	1,173	17,007	954	6,483	128	29	3,879	2,434	*13,907*	0	*46,221*	3,989	683	9,037	4,126	0	2,487	22	*16,355*	5,707	11,481	302	21	*37,854*	8,367	**38,488**
1994	Below Normal	12,201	1,195	5,643	964	6,561	109	28	4,023	2,454	*14,139*	0	*33,177*	3,815	697	9,147	4,145	0	2,490	19	*16,499*	4,233	11,947	279	20	*36,794*	-3,617	**34,871**
1995	Wet	15,315	1,489	12,358	936	6,618	111	27	4,046	2,873	*14,612*	0	*43,774*	3,876	724	9,088	4,227	0	2,566	22	*16,627*	6,814	11,870	354	22	*39,562*	4,212	**39,083**
1996	Dry	13,062	1,592	5,069	975	6,722	97	25	4,114	2,530	*14,464*	0	*34,188*	4,352	700	9,211	4,195	0	2,531	21	*16,658*	5,069	12,841	330	17	*39,268*	-5,080	**34,002**
1997	Above Normal	12,896	1,588	5,442	1,086	6,768	88	25	3,966	2,470	*14,404*	0	*34,329*	4,141	709	9,183	4,231	0	2,489	22	*16,634*	4,894	13,184	305	16	*39,174*	-4,845	**29,157**
1998	Wet	15,355	1,588	12,254	1,227	6,777	85	25	4,036	2,743	*14,893*	0	*44,089*	3,465	696	9,137	4,464	0	2,568	23	*16,888*	6,870	12,511	347	22	*40,102*	3,987	**33,144**
1999	Dry	12,540	1,588	4,722	1,275	6,784	79	24	4,131	2,404	*14,696*	0	*33,546*	3,976	699	9,227	4,338	0	2,537	21	*16,823*	4,719	14,065	315	18	*39,917*	-6,371	**26,774**
2000	Dry	12,304	1,868	4,044	1,409	6,867	79	26	4,011	2,425	*14,817*	0	*33,032*	4,176	727	9,260	4,276	0	2,505	21	*16,790*	4,279	14,988	299	15	*40,546*	-7,514	**19,259**
2001	Dry	12,246	1,955	3,666	1,241	6,840	84	27	3,836	2,417	*14,445*	0	*32,312*	3,699	800	9,221	4,358	0	2,437	20	*16,838*	4,338	14,330	297	15	*39,516*	-7,204	**12,055**
2002	Critically Dry	10,896	1,955	2,245	1,135	6,864	90	29	3,747	2,206	*14,071*	36	*29,202*	3,864	955	9,234	4,126	0	2,373	21	*16,710*	3,400	15,346	235	12	*39,566*	-10,364	**1,691**
2003	Above Normal	11,589	1,955	3,589	1,219	6,847	98	29	3,606	2,133	*13,932*	691	*31,757*	3,435	946	9,206	4,294	0	2,344	20	*16,809*	3,722	14,513	242	19	*38,740*	-6,983	**-5,292**
2004	Dry	10,939	1,961	2,926	1,212	6,849	106	30	3,581	1,988	*13,767*	624	*30,216*	3,649	1,224	9,233	4,155	0	2,323	17	*16,952*	3,316	14,215	215	19	*38,367*	-8,151	**-13,443**
2005	Wet	13,561	2,831	11,620	1,205	6,795	106	30	3,757	2,257	*14,150*	135	*42,297*	3,483	1,173	9,112	4,413	0	2,442	19	*17,159*	5,250	13,561	276	19	*39,747*	2,550	**-10,894**
2006	Below Normal	11,309	3,126	4,449	1,193	6,807	90	29	3,894	2,152	*14,164*	17	*33,065*	3,685	1,290	9,203	4,248	0	2,435	17	*17,193*	3,628	13,478	239	13	*38,237*	-5,172	**-16,065**
2007	Critically Dry	10,581	3,126	2,745	1,218	6,866	84	29	3,741	2,284	*14,221*	4	*30,677*	3,823	1,604	9,220	4,102	0	2,382	17	*17,326*	3,132	13,166	199	10	*37,656*	-6,979	**-23,044**
2008	Normal	11,284	3,135	4,099	1,234	6,877	85	29	3,580	2,292	*14,098*	551	*33,166*	3,664	1,148	9,226	4,276	0	2,343	17	*17,010*	3,554	11,395	218	17	*35,858*	-2,693	**-25,737**
2009	Below Normal	11,112	3,126	4,005	1,251	6,825	84	29	3,482	2,096	*13,768*	1,337	*33,349*	3,769	831	9,200	4,214	0	2,284	17	*16,547*	3,503	10,171	215	38	*34,243*	-895	**-26,632**
2010	Above Normal	12,416	3,787	6,687	1,222	6,752	79	28	3,465	1,985	*13,532*	3,549	*39,971*	3,635	810	9,165	4,322	0	2,274	18	*16,591*	4,528	10,400	236	112	*35,502*	4,470	**-22,162**
2011	Wet	12,924	4,009	8,383	1,161	6,708	66	27	3,523	2,000	*13,487*	3,071	*41,875*	3,740	791	9,145	4,482	0	2,304	17	*16,738*	4,892	9,839	254	128	*35,591*	6,283	**-15,879**
2012	Dry	11,403	4,020	4,835	1,101	6,720	52	26	3,584	1,886	*13,369*	2,936	*36,564*	4,066	812	9,227	4,356	1	2,301	16	*16,712*	3,864	10,174	209	98	*35,123*	1,441	**-14,438**
2013	Dry	11,089	4,009	4,164	1,051	6,724	44	25	3,491	2,030	*13,366*	2,170	*34,799*	3,806	900	9,190	4,441	1	2,263	16	*16,810*	3,562	10,341	182	79	*34,781*	18	**-14,420**
2014	Dry	10,633	4,009	3,544	1,013	6,731	41	25	3,398	2,005	*13,212*	521	*31,920*	3,767	1,068	9,199	4,340	1	2,222	16	*16,846*	3,127	11,897	176	29	*35,840*	-3,920	**-18,340**
Historical Average		**11,812**	**2,829**	**6,101**	**1,315**	**6,544**	**123**	**32**	**3,524**	**2,277**	***13,815***	**313**	***34,870***	**3,460**	**795**	**9,109**	**4,011**	**0**	**2,272**	**20**	***16,207***	**3,984**	**11,346**	**217**	**23**	***35,237***	**-367**	
Critically Dry Wate Year Average		10,738	2,541	2,495	1,177	6,865	87	29	3,744	2,245	*14,146*	20	*29,940*	3,844	1,280	9,227	4,114	0	2,378	19	*17,018*	3,266	14,256	217	11	*38,611*	-8,671	
Dry Water Year Average		11,518	2,936	4,317	1,171	6,615	98	29	3,668	2,289	*13,870*	447	*33,088*	3,783	796	9,168	4,089	0	2,323	20	*16,397*	3,828	11,830	233	27	*36,098*	-3,010	
Below Normal Water Year Average		11,090	3,576	4,468	1,211	6,476	121	33	3,474	2,255	*13,570*	150	*32,855*	3,465	795	9,120	3,954	0	2,234	20	*16,123*	3,458	11,055	207	18	*34,325*	-1,471	
Normal Water Year Average		10,500	3,086	3,734	1,633	6,462	165	38	3,146	2,031	*13,475*	92	*30,888*	2,947	794	9,064	3,717	0	2,083	18	*15,676*	2,963	10,515	119	11	*32,230*	-1,343	
Above Normal Water Year Average		11,951	2,208	6,174	1,344	6,522	132	33	3,445	2,219	*13,696*	471	*34,501*	3,322	731	9,091	4,018	0	2,242	20	*16,103*	4,036	11,351	226	26	*35,065*	-564	
Wet Water Year Average		13,752	2,469	12,144	1,420	6,508	134	33	3,622	2,485	*14,201*	321	*42,886*	3,357	754	9,037	4,104	0	2,351	20	*16,267*	5,383	10,841	258	29	*36,135*	6,751	

[A]Water Year corresponds to October 1 of the previous year, through September 30th of the current year.

[B]Return flows consist of water that recharges the Subbasin via municipal distribution network leaks, septic system discharges, and infiltration of irrigation water

[C]Groundwater Extractions are broken down by Usage Sector in Table 2C-7

[D]Represents surface water diversions through the operation of YVWD-25

[E]The YIHM calculates groundwater discharges to land surface when groundwater elevations in a given cell are higher than the top elevation of the cell

Table 2C-3: Imported Groundwater to the Yucaipa Subbasin			
Water Year Ending	Imported Groundwater (AF)		
	South Mesa	YVWD	**Total**
1965	-	-	**-**
1966	-	0	**-**
1967	-	0	**-**
1968	-	0	**-**
1969	-	0	**-**
1970	-	0	**-**
1971	-	0	**-**
1972	-	0	**-**
1973	-	0	**-**
1974	-	0	**-**
1975	-	0	**-**
1976	-	0	**-**
1977	-	0	**-**
1978	-	0	**-**
1979	-	0	**-**
1980	-	0	**-**
1981	0	20	**20**
1982	0	104	**104**
1983	0	43	**43**
1984	0	18	**18**
1985	0	13	**13**
1986	0	6	**6**
1987	0	14	**14**
1988	263	19	**282**
1989	373	45	**418**
1990	469	41	**509**
1991	403	14	**417**
1992	353	2	**355**
1993	417	2	**419**
1994	488	14	**502**
1995	523	6	**529**
1996	582	7	**589**
1997	609	7	**615**
1998	504	3	**507**
1999	560	3	**563**
2000	577	25	**602**
2001	553	886	**1,439**
2002	537	1,518	**2,055**
2003	382	1,693	**2,075**
2004	474	1,657	**2,131**
2005	610	1,279	**1,890**
2006	643	1,709	**2,352**
2007	662	1,609	**2,271**
2008	509	777	**1,286**
2009	399	551	**951**
2010	422	665	**1,087**
2011	415	587	**1,002**
2012	441	694	**1,135**
2013	338	1,010	**1,349**
2014	417	1,198	**1,615**
Average	**380**	**331**	**858**

AF = acre-feet

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Table 2C-4: Imported Surface Water Supplies to the Subbasin									
Water Year Ending	**From SBVMWD**				**From SGWPA**				**Total SWP Water Imported to the Subbasin (AF)**
	Delivered to YVWRFF (AF)	Delivered to Wilson Creek spreading Basins (AF)	Delivered to Oak Glen Creek spreading Basins (AF)	**Total SBVMWD Imports (AF)**	Delivered to YVWRFF (AF)	Delivered to Wilson Creek spreading Basins (AF)	Delivered to Oak Glen Creek spreading Basins (AF)	**Total SGPWA Imports (AF)**	
2003	855	0	0	**855**					**855**
2004	1,246	0	0	**1,246**	0	0	0	**0**	**1,246**
2005	1,357	0	0	**1,357**	0	0	0	**0**	**1,357**
2006	2,213	0	0	**2,213**	0	0	0	**0**	**2,213**
2007	3,539	0	0	**3,539**	0	0	0	**0**	**3,539**
2008	7,263	0	0	**7,263**	0	0	0	**0**	**7,263**
2009	7,428	0	48	**7,476**	0	0	0	**0**	**7,476**
2010	5,530	0	0	**5,530**	0	0	0	**0**	**5,530**
2011	5,581	1,542	141	**7,264**	0	0	0	**0**	**7,264**
2012	6,008	3,119	267	**9,394**	0	0	0	**0**	**9,394**
2013	5,846	2,824	220	**8,890**	0	0	0	**0**	**8,890**
2014	5,133	0	159	**5,292**	0	0	0	**0**	**5,292**
2015	3,845	0	0	**3,845**	0	0	0	**0**	**3,845**
2016	7,145	0	0	**7,145**	0	0	0	**0**	**7,145**
2017	8,764	6,579	0	**15,343**	0	0	0	**0**	**15,343**
2018	8,455	1,180	558	**10,192**	0	0	0	**0**	**10,192**
Total	**80,210**	**15,244**	**1,393**	**96,846**	**0**	**0**	**0**	**0**	**96,846**

AF = acre-feet

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Table 2C-5: Spreading at the Oak Glen Creek and Wilson Creek Spreading Basins						
Water Year Ending	Imported Water Delivered (AF)			YVWRFF Water Diverted to Spreading Basins (AF)	**Total Water Delivered for Spreading at the Wilson Creek and Oak Glen Creek Spreading Basins (AF)**	**Simulated Spreading at the Oak Glen Creek and Wilson Creek Spreading Basins (AF)**
	to Wilson Creek Spreading Basins	to Oak Glen Creek Spreading Basins	**Total SWP Water Used for Spreading**			
2001				0	**0**	
2002				0	**0**	**36**
2003	0	0	**0**	0	**0**	**691**
2004	0	0	**0**	0	**0**	**624**
2005	0	0	**0**	0	**0**	**135**
2006	0	0	**0**	0	**0**	**17**
2007	0	0	**0**	0	**0**	**4**
2008	0	0	**0**	0	**0**	**551**
2009	0	48	**48**	0	**48**	**1,337**
2010	0	0	**0**	0	**0**	**3,549**
2011	1,542	141	**1,683**	0	**1,683**	**3,071**
2012	3,119	267	**3,386**	0	**3,386**	**2,936**
2013	2,824	220	**3,044**	0	**3,044**	**2,170**
2014	0	159	**159**	0	**159**	**521**
2015	0	0	**0**	133	**133**	**313**
2016	0	0	**0**	8	**8**	**N/A[a]**
2017	6,579	0	**6,579**	3	**6,582**	**N/A[a]**
2018	1,180	558	**1,737**	20	**1,757**	**N/A[a]**
Total	**15,244**	**1,393**	**16,637**	**164**	**16,801**	**15,955**

AF = acre-feet

[a]The YIHM was designed to simulate groundwater conditions through water year 2014, and therefore does not contain estimates of recharge at the Spreading Basins between 2015 and 2019.

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Table 2C-6: Historical and Current surface water diversion points and diversions in the Subbasin				
Water Year Ending	Well 25 Production (AF)	Surface Water Diversion from Oak Glen Creek (AF)	Surface Water Diversion from Birch Creek (AF)	**Total Surface Water Diversions (AF)**
2001	312	29	56	**396**
2002	303	65	81	**449**
2003	330	67	105	**502**
2004	288	24	48	**360**
2005	322	107	99	**527**
2006	327	46	148	**520**
2007	313	57	47	**418**
2008	278	95	9	**382**
2009	287	50	19	**356**
2010	302	61	0	**363**
2011	342	36	0	**378**
2012	267	8	0	**275**
2013	215	20	0	**235**
2014	230	13	0	**243**
2015	217	12	0	**229**
2016	210	13	0	**223**
2017	205	4	0	**209**
2018	192	0	0	**192**
Total	**4,938**	**707**	**611**	**6,257**

AF = acre-feet

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Table 2C-7: Historical Groundwater Extractions by Usage Type in the Subbasin								
Water Year[A]	**Water Year Type[B]**	Municipal Groundwater Extractions (AF)			Irrigation (AF)		Private Well Extractions (AF)	Total Groundwater Extractions (AF)
		YVWD	South Mesa	WHWC	South Mountain	Subtotal		
1965	Normal	2,996	1,602	1,499	115	6,211	3,688	**9,899**
1966	Above Normal	3,189	2,732	1,436	376	7,734	3,876	**11,609**
1967	Wet	3,296	3,035	1,266	337	7,933	3,124	**11,057**
1968	Normal	3,252	2,869	1,278	456	7,855	3,251	**11,106**
1969	Wet	3,362	2,174	936	226	6,698	2,959	**9,658**
1970	Dry	3,433	2,195	1,085	405	7,117	2,743	**9,861**
1971	Below Normal	3,341	2,088	1,187	506	7,122	2,728	**9,849**
1972	Dry	3,489	2,098	1,498	467	7,551	3,267	**10,818**
1973	Above Normal	3,280	2,289	1,334	780	7,683	2,728	**10,411**
1974	Below Normal	3,990	2,518	1,428	815	8,751	2,734	**11,484**
1975	Normal	3,347	2,346	1,430	812	7,936	2,565	**10,501**
1976	Normal	3,403	2,260	1,391	779	7,832	2,534	**10,366**
1977	Below Normal	3,527	2,277	1,327	474	7,605	2,301	**9,906**
1978	Wet	3,204	2,297	1,373	567	7,441	2,561	**10,002**
1979	Above Normal	2,908	2,394	1,510	514	7,325	2,439	**9,764**
1980	Wet	3,140	2,530	1,445	426	7,541	2,534	**10,075**
1981	Dry	3,375	2,660	1,556	80	7,672	2,526	**10,198**
1982	Above Normal	2,635	1,960	1,399	579	6,573	2,307	**8,880**
1983	Wet	2,359	1,731	1,384	795	6,269	2,084	**8,353**
1984	Dry	3,288	2,243	1,670	900	8,100	2,178	**10,278**
1985	Below Normal	3,602	2,261	1,771	956	8,590	1,943	**10,533**
1986	Normal	3,883	1,309	1,864	867	7,924	1,899	**9,823**
1987	Dry	3,945	1,650	1,625	935	8,155	1,833	**9,987**
1988	Below Normal	4,547	1,756	1,838	1,000	9,142	1,715	**10,857**
1989	Below Normal	5,131	1,716	2,042	825	9,713	1,553	**11,266**
1990	Dry	5,323	1,755	2,130	687	9,895	1,731	**11,626**
1991	Above Normal	5,569	1,607	2,052	899	10,127	1,530	**11,657**
1992	Above Normal	5,628	1,596	2,065	1,063	10,352	1,391	**11,743**
1993	Wet	5,261	1,712	2,113	791	9,877	1,604	**11,481**
1994	Below Normal	5,509	1,694	2,181	793	10,177	1,770	**11,947**
1995	Wet	5,567	1,637	2,139	888	10,230	1,640	**11,870**
1996	Dry	6,243	1,781	2,353	1,016	11,392	1,450	**12,841**
1997	Above Normal	6,512	1,799	2,331	1,091	11,733	1,451	**13,184**
1998	Wet	5,929	1,685	3,038	744	11,396	1,116	**12,511**
1999	Dry	7,438	1,904	2,450	1,144	12,936	1,129	**14,065**
2000	Dry	8,519	1,991	2,418	913	13,841	1,147	**14,988**
2001	Dry	8,382	2,029	2,365	832	13,607	723	**14,330**
2002	Critically Dry	9,121	2,176	2,473	946	14,716	629	**15,346**
2003	Above Normal	8,506	2,282	2,346	743	13,877	636	**14,513**
2004	Dry	8,841	2,196	2,392	208	13,637	578	**14,215**
2005	Wet	8,555	1,965	2,383	69	12,972	588	**13,561**
2006	Below Normal	8,362	2,037	2,542	12	12,953	525	**13,478**
2007	Critically Dry	7,821	2,151	2,765	-	12,738	428	**13,166**
2008	Normal	6,350	2,198	2,460	-	11,008	387	**11,395**
2009	Below Normal	5,692	2,148	1,964	-	9,805	366	**10,171**
2010	Above Normal	6,205	1,934	1,873	-	10,012	388	**10,400**
2011	Wet	5,685	1,826	1,946	-	9,458	381	**9,839**
2012	Dry	5,824	1,905	2,093	-	9,822	352	**10,174**
2013	Dry	5,837	2,086	2,081	-	10,004	338	**10,341**
2014	Dry	7,227	2,023	2,114	210	11,574	323	**11,897**
Historical Average		**5,116**	**2,062**	**1,873**	**652**	**9,612**	**1,733**	**11,346**
Critically Dry Wate Year Average		8,471	2,164	2,619	946	13,727	529	**14,256**
Dry Water Year Average		5,797	2,037	1,988	650	10,379	1,451	**11,830**
Below Normal Water Year Average		4,856	2,055	1,809	673	9,317	1,737	**11,055**
Normal Water Year Average		3,872	2,097	1,654	606	8,128	2,387	**10,515**
Above Normal Water Year Average		4,937	2,066	1,816	756	9,491	1,861	**11,351**
Wet Water Year Average		4,636	2,059	1,802	538	8,981	1,859	**10,841**

AF = acre-feet

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Table 2C-8: Estimates of Safe Yield in the Yucaipa Subbasin and Subareas (AFY)				
Subarea	Historical Sustainable Yield Estimated from the YIHM	GSSI (2014) Estimates of Safe Yield		
	YIHM Water Budget	Zero-Net Draft	Hill	Hydrologic Water Balance
Triple Falls Creek	394	215	310	-
Oak Glen	473	415	600	-
Gateway	1,947	1,775	1,440	-
Crafton	427	200	370	-
Wilson Creek	696	1,520	1,245	-
Western Heights	1,764	2,270	2,100	-
Calimesa	4,354	3,195	3,580	-
Live Oak	962	-	-	-
Singleton[a]	0	-	-	-
Yucaipa Subbasin	**10,981**	**9,590**	**9,645**	**9,683**

Estimates of safe yield have not previously been calculated for the Singleton and Live Oak Hydrogeologic Subareas

[a]Results from the YIHM indicate that groundwater in storage declined by approximately 36 AFY; this was subtractred from the total Subbasin sustainable yield, and represented as a zero for the Singelton Subarea sustainable yield

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Table 2C-9:
Historical Water Year Type Distribution in the Subbasin

Water Year Type	Number of occurences between 1965 and 2014	Water Years
Critically Dry	2	2002, 2007
Dry	14	1970, 1972, 1981, 1984, 1987, 1990, 1996, 2000, 2001, 2004, 2012, 2013, 2014
Below Normal	9	1971, 1974, 1977, 1985, 1988, 1994, 2006, 2009
Normal	6	1965, 1968, 1975, 1976, 1986, 2008
Above Normal	9	1966, 1973, 1979, 1982, 1991, 1992, 1997, 2003, 2010
Wet	10	1967, 1969, 1978, 1980, 1983, 1993, 1995, 1998, 2005, 2011

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Table 2C-10: Historical Surface Water Availability in the Subbasin					
Water Year Ending	Water Year Type	SWP water imported from SBVMWD	SWP water imported from SGPWA	Surface water diversions from Oak Glen Creek, Birch Creek, and Well 25	**Total Surface Water Availability**
2001	Dry	---	---	396	**396**
2002	Critically Dry	---	---	449	**449**
2003	Above Normal	855	---	502	**1,357**
2004	Dry	1,246	---	360	**1,606**
2005	Wet	1,357	---	527	**1,885**
2006	Below Normal	2,213	---	520	**2,734**
2007	Critically Dry	3,539	---	418	**3,957**
2008	Normal	7,263	---	382	**7,645**
2009	Below Normal	7,476	---	356	**7,832**
2010	Above Normal	5,530	---	363	**5,893**
2011	Wet	7,264	---	378	**7,642**
2012	Dry	9,394	---	275	**9,670**
2013	Dry	8,890	---	235	**9,125**
2014	Dry	5,292	---	243	**5,536**
Average		5,027	---	380	**4,695**
Critically Dry Wate Year Average		3,539	---	434	**2,203**
Dry Water Year Average		6,206	---	302	**5,267**
Below Normal Water Year Average		4,844	---	438	**5,283**
Normal Water Year Average		7,263	---	382	**7,645**
Above Normal Water Year Average		3,193	---	432	**3,625**
Wet Water Year Average		4,311	---	452	**4,763**

--- = Blank cells indicate that YVWD had not contracted with SWP providers during this period

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Table 2C-11
Current Condition Water Budget for the Yucaipa Subbasin

Table 2C-11	Water Year Type	Individual Components of the Basin Water Budget Reported in Units of Acre-Feet (AF)												Individual Components of the Basin Water Budget Reported in Units of Acre-Feet (AF)													
		Inflows to Groundwater System												Outflows from Groundwater System												Change in Groundwater in Storage	
		Stream Leakage	Return Flows[B]	Precipitation Recharge	Subsurface Inflows							Surface Water Spreading	Total Basin Inflows	ET	Subsurface Outflows							GW Discharges to Streams	GW Extractions	Surface Water Diversions[C]	GW Discharge to Surface[D]	Total Basin Outflows		
					From Beaumont Basin	From San Timoteo Basin	From SBBA	From Crafton Hills	From Yucaipa Hills	From San Bernardino Mountains	*Subtotal*				To Beaumont Basin	To San Timoteo Basin	To SBBA	To Crafton Hills	To Yucaipa Hills	To San Bernardino Mountains	*Subtotal*						Annual	Cumulative
2015	Below Normal	10,571	4,009	2,903	1,006	6,721	39	25	3,292	1,887	*12,970*	115	**30,568**	3,426	1,066	9,186	4,372	1	2,180	17	*16,821*	3,073	10,461	188	9	**33,978**	**-3,410**	-3,410
2016	Dry	10,576	4,020	3,647	996	6,700	39	26	3,223	1,751	*12,735*	6	**30,985**	3,443	916	9,199	4,437	1	2,138	17	*16,708*	3,026	7,915	189	10	**31,292**	**-307**	-3,717
2017	Above Normal	14,433	4,009	10,073	949	6,614	38	25	3,251	1,815	*12,692*	6,582	**47,790**	3,719	944	9,127	4,550	1	2,176	21	*16,818*	6,557	7,223	205	320	**34,842**	**12,947**	9,230
2018	Critically Dry	11,349	4,009	5,339	889	6,581	32	22	3,298	1,577	*12,399*	1,757	**34,854**	3,965	1,003	9,163	4,454	1	2,154	20	*16,795*	3,852	9,073	182	191	**34,058**	**796**	10,026
Average		**11,732**	**4,012**	**5,491**	**960**	**6,654**	**37**	**24**	**3,266**	**1,758**	***12,699***	**2,115**	**36,049**	**3,638**	**982**	**9,169**	**4,453**	**1**	**2,162**	**19**	***16,786***	**4,127**	**8,668**	**191**	**133**	**33,542**	**2,506**	**-**

[A]Water Year corresponds to October 1 of the previous year, through September 30th of the current year.

[B]Return flows consist of water that recharges the Subbasin via municipal distribution network leaks, septic system discharges, and infiltration of irrigation water

[C]Represents surface water diversions through the operation of YVWD-25

[D]The YIHM calculates groundwater discharges to land surface when groundwater elevations in a given cell are higher than the top elevation of the cell

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Table 2C-12: Sustainable Yield for each Management Area in the Yucaipa Subbasin	
Management Area	**Sustainable Yield (AFY)**
Calimesa	4,955
North Bench	3,940
San Timoteo	325
Western Heights	1,760
Total	**10,980**

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Table 2C-13: Projected Future Baseline Water Budget

Individual Components of the Basin Water Budget Reported in Units of Acre-Feet (AF)

Water Year[A]	Inflows to Groundwater System												Outflows from Groundwater System												Change in Groundwater in Storage	
				Subsurface Inflows										Subsurface Outflows												
	Stream Leakage	Return Flows[B]	Precipitation Recharge	From Beaumont Basin	From San Timoteo Basin	From SBBA	From Crafton Hills	From Yucaipa Hills	From San Bernardino Mtns	Subtotal	Surface Water Spreading	Total Basin Inflows	ET	To Beaumont Basin	To San Timoteo Basin	To SBBA	To Crafton Hills	To Yucaipa Hills	To San Bernardino Mtns	Subtotal	GW Discharges to Streams	GW Extractions	Surface Water Diversions[C]	GW Discharge to SurfaceD	Total Basin Outflows	Annual	Cumulative
2019	11,119	4,009	3,705	891	6,574	27	21	3,200	1,574	12,287	2,139	33,260	3,429	1,068	9,160	4,488	1	2,114	16	16,846	3,534	10,563	139	106	34,617	-1,357	**-1,357**
2020	11,256	4,020	4,161	893	6,573	26	21	3,127	1,721	12,362	2,139	33,939	3,457	1,088	9,186	4,559	1	2,099	16	16,949	3,679	10,555	153	120	34,912	-973	**-2,330**
2021	11,381	4,009	4,687	889	6,540	24	22	3,069	1,682	12,226	2,139	34,443	3,337	1,102	9,154	4,576	1	2,080	17	16,929	3,760	10,557	150	118	34,852	-409	**-2,739**
2022	12,253	4,009	8,268	897	6,527	22	21	3,155	1,757	12,380	2,139	39,050	3,894	1,120	9,110	4,698	1	2,126	19	17,074	4,319	10,586	188	119	36,180	2,869	**131**
2023	12,601	4,009	8,223	877	6,500	18	20	3,233	1,797	12,446	2,139	39,418	3,532	1,142	9,110	4,798	1	2,154	19	17,224	4,602	10,600	192	123	36,273	3,145	**3,276**
2024	11,731	4,020	5,605	864	6,531	16	20	3,287	1,852	12,570	2,139	36,065	3,911	1,179	9,178	4,659	1	2,167	17	17,201	4,097	10,580	191	119	36,101	-36	**3,240**
2025	14,806	4,009	15,922	864	6,521	14	18	3,494	2,405	13,317	2,139	*50,193*	4,268	1,204	9,072	4,788	1	2,313	20	17,398	6,641	10,632	191	126	*39,256*	10,936	**14,177**
2026	12,928	4,009	6,836	818	6,502	10	17	3,691	2,308	13,346	2,139	*39,258*	4,552	1,212	9,165	4,835	2	2,332	20	17,565	5,294	10,619	192	123	*38,345*	913	**15,090**
2027	13,302	4,009	6,429	807	6,527	9	18	3,566	2,394	13,321	2,139	*39,200*	4,373	1,297	9,190	4,889	1	2,287	22	17,687	5,505	10,614	192	124	*38,495*	705	**15,795**
2028	12,384	4,020	4,901	800	6,575	10	19	3,498	2,267	13,169	2,139	*36,614*	4,589	1,368	9,227	4,809	1	2,255	22	17,682	4,762	10,603	192	118	*37,946*	-1,332	**14,463**
2029	13,775	4,009	7,923	796	6,526	11	20	3,440	2,337	13,129	2,139	*40,975*	3,888	1,427	9,181	5,024	1	2,262	23	17,918	5,942	10,630	192	126	*38,696*	2,279	**16,742**
2030	13,039	4,009	6,948	793	6,514	11	20	3,509	2,112	12,959	2,139	*39,094*	4,476	1,466	9,178	4,914	1	2,266	23	17,849	5,345	10,633	192	123	*38,618*	475	**17,217**
2031	12,531	4,009	5,242	782	6,488	10	21	3,480	2,058	12,839	2,139	*36,760*	3,932	1,515	9,201	4,976	1	2,253	21	17,968	4,863	10,617	192	124	*37,695*	-935	**16,282**
2032	12,807	4,020	5,934	777	6,532	11	22	3,426	2,087	12,854	2,139	*37,755*	4,044	1,539	9,213	4,922	1	2,236	21	17,933	4,857	10,612	192	122	*37,760*	-5	**16,277**
2033	12,687	4,009	6,488	780	6,497	11	22	3,399	2,146	12,855	2,139	*38,178*	4,390	1,558	9,198	4,935	1	2,233	22	17,947	4,934	10,616	192	125	*38,204*	-26	**16,250**
2034	16,306	4,009	20,771	793	6,500	10	19	3,829	2,645	13,796	2,139	*57,022*	4,944	1,562	9,109	4,944	2	2,478	24	18,120	8,567	10,656	192	133	*42,612*	14,410	**30,661**
2035	16,645	4,009	13,198	732	6,439	6	15	4,143	2,638	13,974	2,139	*49,965*	5,061	1,561	9,170	5,144	4	2,598	23	18,500	8,965	10,657	192	139	*43,513*	6,452	**37,112**
2036	18,647	4,020	18,833	733	6,530	6	15	4,425	3,042	14,750	2,139	*58,389*	5,916	1,668	9,184	5,217	5	2,749	23	18,845	11,184	10,659	192	143	*46,939*	11,450	**48,562**
2037	17,040	4,009	7,761	678	6,554	6	15	4,441	2,818	14,511	2,139	*45,461*	6,310	1,716	9,234	5,315	3	2,674	22	18,965	9,150	10,630	192	135	*45,381*	79	**48,642**
2038	17,748	4,009	9,711	668	6,583	6	18	4,221	3,000	14,496	2,139	*48,104*	5,089	1,839	9,227	5,290	2	2,598	24	18,980	10,011	10,647	192	141	*45,059*	3,044	**51,686**
2039	18,164	4,009	13,277	672	6,640	6	18	4,272	3,007	14,614	2,139	*52,204*	5,181	1,924	9,178	5,299	2	2,663	25	19,092	11,186	10,663	192	150	*46,465*	5,739	**57,425**
2040	15,910	4,020	7,992	649	6,640	6	17	4,341	2,619	14,272	2,139	*44,333*	6,392	1,990	9,275	5,307	2	2,657	22	19,254	8,643	10,644	192	137	*45,262*	-928	**56,497**
2041	15,544	4,009	6,661	640	6,628	7	20	4,193	2,581	14,069	2,139	*42,423*	5,568	2,048	9,310	5,248	2	2,583	24	19,214	7,880	10,636	192	131	*43,621*	-1,198	**55,299**
2042	15,227	4,009	5,659	645	6,635	6	23	4,063	2,563	13,936	2,139	*40,970*	5,383	2,065	9,355	5,346	2	2,522	23	19,313	7,276	10,624	192	127	*42,916*	-1,946	**53,353**
2043	14,169	4,009	4,511	647	6,623	6	24	3,925	2,435	13,661	2,139	*38,489*	5,130	2,079	9,371	5,291	2	2,461	24	19,227	6,320	10,612	192	125	*41,607*	-3,118	**50,235**
2044	13,612	4,020	4,634	657	6,630	6	25	3,813	2,369	13,501	2,139	*37,907*	4,824	2,065	9,386	5,285	2	2,422	24	19,183	5,805	10,609	192	124	*40,738*	-2,831	**47,404**
2045	12,613	4,009	4,203	666	6,608	6	26	3,712	2,167	13,186	2,139	*36,150*	4,877	2,044	9,354	5,116	2	2,385	23	18,924	5,032	10,605	192	120	*39,749*	-3,600	**43,804**
2046	12,063	4,009	3,357	679	6,620	7	27	3,617	1,994	12,944	2,139	*34,513*	4,586	2,027	9,344	5,113	2	2,338	22	18,846	4,440	10,597	192	120	*38,781*	-4,268	**39,536**
2047	13,045	4,009	7,889	703	6,645	9	27	3,579	2,012	12,976	2,139	*40,058*	4,639	1,985	9,272	5,094	2	2,348	20	18,721	5,171	10,620	192	122	*39,465*	593	**40,129**
2048	13,469	4,020	8,722	717	6,644	9	25	3,677	2,056	13,129	2,139	*41,479*	4,804	1,950	9,299	5,094	2	2,400	20	18,765	5,652	10,638	192	124	*40,176*	1,303	**41,432**
2049	16,117	4,009	20,186	719	6,662	7	21	4,121	2,504	14,034	2,139	*56,486*	5,544	1,910	9,211	5,120	2	2,640	24	18,908	8,621	10,655	192	133	*44,053*	12,433	**53,865**
2050	15,057	4,009	7,825	676	6,661	6	18	4,200	2,555	14,117	2,139	*43,147*	5,298	1,870	9,296	5,345	2	2,609	19	19,139	7,296	10,640	192	134	*42,699*	448	**54,313**
2051	17,364	4,009	15,080	688	6,699	6	19	4,225	2,980	14,617	2,139	*53,209*	5,404	1,952	9,237	5,310	2	2,656	23	19,180	10,033	10,657	192	141	*45,607*	7,602	**61,914**
2052	15,428	4,020	7,471	652	6,730	6	19	4,257	2,613	14,277	2,139	*43,336*	6,107	1,984	9,336	5,305	2	2,613	20	19,259	7,838	10,629	192	130	*44,157*	-821	**61,093**
2053	15,118	4,009	7,625	655	6,732	7	21	4,103	2,545	14,062	2,139	*42,954*	5,758	2,075	9,330	5,246	2	2,556	22	19,231	7,493	10,633	192	127	*43,434*	-480	**60,614**
2054	17,239	4,009	14,971	668	6,755	6	21	4,174	2,862	14,485	2,139	*52,843*	4,955	2,110	9,260	5,312	2	2,639	24	19,347	10,078	10,656	192	144	*45,371*	7,472	**68,085**
2055	15,011	4,009	6,458	645	6,734	6	20	4,253	2,465	14,122	2,139	*41,740*	5,644	2,124	9,323	5,388	2	2,605	21	19,462	7,692	10,626	192	137	*43,753*	-2,014	**66,072**
2056	14,730	4,020	6,041	647	6,789	7	23	4,115	2,466	14,046	2,139	*40,976*	5,846	2,166	9,407	5,387	2	2,548	21	19,531	6,783	10,614	192	126	*43,093*	-2,116	**63,955**
2057	14,518	4,009	5,559	647	6,748	6	25	3,940	2,483	13,849	2,139	*40,074*	5,131	2,187	9,372	5,344	2	2,477	21	19,403	6,730	10,625	192	127	*42,209*	-2,135	**61,821**
2058	12,801	4,009	3,545	657	6,745	6	26	3,841	2,237	13,512	2,139	*36,006*	5,290	2,183	9,406	5,251	2	2,414	22	19,278	5,168	10,606	192	120	*40,654*	-4,648	**57,173**
2059	13,513	4,009	5,957	672	6,732	6	27	3,706	2,218	13,361	2,139	*38,979*	4,735	2,157	9,345	5,282	2	2,397	22	19,204	5,677	10,618	192	125	*40,551*	-1,572	**55,601**
2060	12,683	4,020	4,733	691	6,742	7	27	3,684	2,052	13,203	2,139	*36,778*	4,978	2,138	9,393	5,200	2	2,373	21	19,126	4,968	10,614	192	120	*39,998*	-3,220	**52,381**
2061	15,279	4,009	14,869	706	6,711	7	25	3,853	2,383	13,685	2,139	*49,982*	4,890	2,099	9,249	5,149	2	2,496	22	19,017	7,701	10,653	192	133	*42,586*	7,396	**59,777**
2062	13,283	4,009	5,883	668	6,689	6	23	3,971	2,199	13,555	2,139	*38,870*	5,162	2,046	9,354	5,354	2	2,485	19	19,260	5,555	10,618	192	127	*40,914*	-2,044	**57,733**
2063	12,297	4,009	4,024	679	6,746	6	25	3,831	2,281	13,569	2,139	*36,039*	5,202	2,057	9,382	5,184	1	2,420	19	19,063	4,659	10,601	192	118	*39,835*	-3,796	**53,936**
2064	12,631	4,020	4,594	686	6,783	6	27	3,668	2,294	13,466	2,139	*36,851*	4,824	2,069	9,373	5,110	1	2,365	19	18,937	4,976	10,597	192	120	*39,646*	-2,796	**51,140**
2065	12,281	4,009	4,197	703	6,777	8	28	3,571	2,113	13,199	2,139	*35,825*	4,800	2,058	9,347	5,096	1	2,311	21	18,834	4,624	10,600	192	118	*39,168*	-3,343	**47,798**
2066	12,952	4,009	7,026	723	6,751	9	28	3,536	2,002	13,049	2,139	*39,175*	4,418	2,043	9,299	5,103	1	2,301	21	18,768	5,122	10,633	192	122	*39,256*	-81	**47,717**
2067	13,458	4,009	8,366	721	6,729	9	26	3,592	2,022	13,100	2,139	*41,072*	4,488	2,036	9,274	5,105	1	2,326	21	18,762	5,597	10,646	192	127	*39,812*	1,259	**48,976**
2068	12,170	4,020	4,298	717	6,741	8	26	3,655	1,918	13,065	2,139	*35,692*	4,734	2,019	9,355	5,181	1	2,320	19	18,895	4,460	10,609	192	120	*39,010*	-3,318	**45,658**
2069	11,722	4,009	3,765	729	6,770	8	27	3,551	2,060	13,145	2,139	*34,779*	4,394	2,001	9,313	5,054	1	2,279	18	18,665	4,150	10,596	190	117	*38,112*	-3,333	**42,326**
Average	**14,009**	**4,012**	**7,861**	**729**	**6,633**	**9**	**22**	**3,778**	**2,308**	**13,478**	**2,139**	**41,500**	**4,831**	**1,786**	**9,264**	**5,094**	**2**	**2,409**	**21**	**18,576**	**6,326**	**10,620**	**189**	**127**	**40,670**	**830**	-

[A]Water Year corresponds to October 1 of the previous year, through September 30th of the current year.

[B]Return flows consist of water that recharges the Subbasin via municipal distribution network leaks, septic system discharges, and infiltration of irrigation water

[C]Represents surface water diversions through the operation of YVWD-25

[D]The YIHM calculates groundwater discharges to land surface when groundwater elevations in a given cell are higher than the top elevation of the cell

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Table 2C-14
Comparison of Average Annual Water Budget Components for the Historical, Current, and Projected Conditions

Water Budget Component		Simulation Period				
				Projected		
		Historical (AFY)	Current (AFY)	Future Baseline (AFY)	Future Baseline with Climate Change I (AFY)	Future Baseline with Climate Change II (AFY)
Stream Leakage		11,812	11,732	14,009	13,257	12,295
Return Flows		2,829	4,012	4,012	4,012	4,012
Precipitation Recharge		6,101	5,491	7,861	7,290	6,496
Subsurface Inflows	From Beaumont Basin	1,315	960	729	755	795
	From San Timoteo Basin	6,544	6,654	6,633	6,591	6,558
	From SBBA	123	37	9	11	13
	From Crafton Hills	32	24	22	22	23
	From Yucaipa Hills	3,524	3,266	3,778	3,612	3,393
	From San Bernardino Mountains	2,277	1,758	2,308	2,200	2,053
	Total Subsurface Inflows	13,815	12,699	13,478	13,191	12,834
Surface Water Spreading		313	2,115	2,139	2,139	2,139
Average Annual Inflows		*34,870*	*36,049*	*41,500*	*39,888*	*37,776*
ET		3,460	3,638	4,831	4,825	4,731
Subsurface Outflows	To Beaumont Basin	795	982	1,786	1,736	1,659
	To San Timoteo Basin	9,109	9,169	9,264	9,246	9,188
	To SBBA	4,011	4,453	5,094	4,910	4,630
	To Crafton Hills	0	1	2	1	1
	To Yucaipa Hills	2,272	2,162	2,409	2,325	2,211
	To San Bernardino Mountains	20	19	21	21	21
	Total Subsurface Outflows	16,207	16,786	18,576	18,240	17,710
GW Discharges to Streams		3,984	4,127	6,326	5,448	4,538
Surface Water Diversions		217	191	189	188	180
GW Extractions		11,346	8,668	10,621	10,611	10,589
GW Discharge to Surface		23	133	127	119	112
Average Annual Outflows		*35,237*	*33,542*	40,670	39,432	37,859
Average Annual Change in Storage		**-367**	**2,506**	**830**	**457**	**-83**

AFY = acre-feet per year

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Table 2C-15: Projected Future Baseline with Climate Change I Water Budget

Individual Components of the Basin Water Budget Reported in Units of Acre-Feet (AF)

Water Year[A]	Inflows to Groundwater System												Outflows from Groundwater System												Change in Groundwater in Storage	
				Subsurface Inflows										Subsurface Outflows												
	Stream Leakage	Return Flows[B]	Precipitation Recharge	From Beaumont Basin	From San Timoteo Basin	From SBBA	From Crafton Hills	From Yucaipa Hills	From San Bernardino Mtns	Subtotal	Surface Water Spreading	Total Basin Inflows	ET	To Beaumont Basin	To San Timoteo Basin	To SBBA	To Crafton Hills	To Yucaipa Hills	To San Bernardino Mtns	Subtotal	GW Discharges to Streams	GW Extractions	Surface Water Diversions[C]	GW Discharge to Surface[D]	Total Basin Outflows	Annual	Cumulative
2019	11,333	4,009	3,902	891	6,581	27	21	3,204	1,569	12,292	2,139	33,676	3,684	1,068	9,161	4,451	1	2,114	16	16,811	3,497	10,563	136	103	34,794	-1,118	**-1,118**
2020	11,178	4,020	4,560	894	6,571	26	21	3,150	1,739	12,400	2,139	34,298	3,820	1,088	9,175	4,555	1	2,106	17	16,941	3,617	10,555	153	117	35,203	-905	**-2,024**
2021	11,168	4,009	4,559	888	6,547	24	22	3,091	1,678	12,250	2,139	34,125	3,645	1,103	9,161	4,460	1	2,089	16	16,830	3,596	10,555	145	114	34,884	-759	**-2,783**
2022	12,035	4,009	7,682	892	6,531	23	21	3,152	1,741	12,360	2,139	38,225	4,074	1,122	9,115	4,638	1	2,120	19	17,016	4,127	10,577	185	115	36,094	2,132	**-651**
2023	12,396	4,009	8,043	880	6,510	19	20	3,218	1,798	12,445	2,139	39,032	3,765	1,140	9,116	4,692	1	2,147	19	17,115	4,380	10,588	190	119	36,157	2,875	**2,224**
2024	11,481	4,020	5,447	867	6,541	17	20	3,271	1,840	12,555	2,139	35,642	4,137	1,174	9,181	4,531	1	2,155	17	17,058	3,887	10,575	189	115	35,962	-320	**1,904**
2025	14,291	4,009	15,055	867	6,526	15	19	3,453	2,324	13,203	2,139	*48,698*	4,467	1,205	9,070	4,693	1	2,290	20	17,278	6,120	10,621	188	121	*38,794*	9,904	**11,808**
2026	12,388	4,009	6,309	826	6,523	11	17	3,628	2,230	13,235	2,139	*38,081*	4,769	1,212	9,158	4,680	1	2,303	20	17,375	4,780	10,612	192	118	*37,845*	235	**12,043**
2027	12,422	4,009	6,143	817	6,558	10	18	3,505	2,381	13,289	2,139	*38,003*	4,570	1,281	9,179	4,712	1	2,259	22	17,454	4,783	10,605	192	118	*37,722*	281	**12,324**
2028	11,721	4,020	4,495	812	6,605	11	20	3,423	2,233	13,104	2,139	*35,480*	4,673	1,360	9,212	4,638	1	2,219	22	17,451	4,202	10,594	192	112	*37,226*	-1,746	**10,578**
2029	12,976	4,009	6,744	809	6,550	12	21	3,335	2,247	12,974	2,139	*38,842*	3,965	1,410	9,166	4,882	1	2,202	22	17,683	5,164	10,623	192	120	*37,747*	1,095	**11,674**
2030	12,378	4,009	6,510	813	6,549	13	21	3,370	2,005	12,770	2,139	*37,807*	4,535	1,448	9,158	4,759	1	2,205	23	17,594	4,683	10,616	192	117	*37,738*	69	**11,742**
2031	11,838	4,009	4,740	803	6,526	13	21	3,350	1,917	12,630	2,139	*35,355*	4,018	1,487	9,178	4,755	1	2,183	21	17,625	4,249	10,596	192	118	*36,797*	-1,441	**10,301**
2032	12,392	4,020	5,716	801	6,556	13	22	3,295	1,924	12,610	2,139	*36,877*	4,084	1,513	9,182	4,748	1	2,162	21	17,627	4,300	10,586	192	116	*36,905*	-28	**10,273**
2033	12,067	4,009	6,550	806	6,514	13	22	3,297	2,015	12,667	2,139	*37,432*	4,518	1,530	9,162	4,750	1	2,176	20	17,640	4,408	10,593	192	119	*37,471*	-38	**10,235**
2034	15,581	4,009	19,261	818	6,490	12	19	3,669	2,480	13,488	2,139	*54,478*	4,923	1,529	9,090	4,835	2	2,400	23	17,878	7,614	10,645	192	126	*41,378*	13,100	**23,335**
2035	15,451	4,009	11,336	758	6,406	6	16	3,959	2,586	13,731	2,139	*46,666*	4,994	1,520	9,165	5,022	3	2,494	22	18,227	7,599	10,652	192	130	*41,794*	4,873	**28,207**
2036	17,238	4,020	16,588	761	6,477	6	16	4,162	2,877	14,299	2,139	*54,284*	5,799	1,608	9,193	5,034	3	2,611	23	18,472	9,216	10,653	192	131	*44,463*	9,820	**38,028**
2037	15,688	4,009	7,170	702	6,473	6	16	4,192	2,629	14,017	2,139	*43,024*	6,136	1,674	9,268	5,016	2	2,547	22	18,528	7,572	10,624	192	124	*43,176*	-153	**37,875**
2038	16,632	4,009	8,361	694	6,503	6	19	3,997	2,804	14,023	2,139	*45,165*	5,001	1,775	9,255	5,159	2	2,488	24	18,702	8,383	10,640	192	129	*43,047*	2,118	**39,993**
2039	17,515	4,009	11,890	695	6,517	6	19	4,012	2,882	14,132	2,139	*49,686*	5,190	1,853	9,219	5,273	2	2,520	26	18,894	9,710	10,663	192	138	*44,787*	4,899	**44,892**
2040	15,094	4,020	7,564	677	6,522	7	18	4,090	2,527	13,841	2,139	*42,658*	6,294	1,887	9,349	5,125	2	2,529	23	18,916	7,351	10,639	192	126	*43,517*	-859	**44,032**
2041	14,462	4,009	6,271	667	6,518	6	21	3,961	2,449	13,623	2,139	*40,504*	5,422	1,947	9,335	5,098	2	2,475	24	18,880	6,556	10,626	192	122	*41,797*	-1,293	**42,739**
2042	13,927	4,009	5,091	667	6,553	6	23	3,841	2,454	13,545	2,139	*38,711*	5,315	1,974	9,348	5,095	2	2,413	23	18,854	5,989	10,616	192	119	*41,084*	-2,372	**40,367**
2043	13,097	4,009	4,330	678	6,578	6	24	3,737	2,361	13,385	2,139	*36,960*	5,122	1,979	9,346	5,070	2	2,361	23	18,780	5,291	10,608	192	118	*40,111*	-3,150	**37,216**
2044	12,632	4,020	4,092	688	6,603	7	25	3,628	2,267	13,219	2,139	*36,102*	4,860	1,985	9,362	5,031	2	2,335	23	18,737	4,860	10,603	192	117	*39,369*	-3,267	**33,949**
2045	11,934	4,009	3,890	701	6,608	9	26	3,526	2,045	12,915	2,139	*34,887*	4,779	1,974	9,318	4,928	2	2,290	22	18,534	4,324	10,599	192	114	*38,542*	-3,655	**30,294**
2046	11,415	4,009	3,314	719	6,616	11	27	3,433	1,857	12,662	2,139	*33,540*	4,548	1,942	9,301	4,844	2	2,241	21	18,351	3,844	10,587	189	114	*37,632*	-4,092	**26,202**
2047	12,356	4,009	7,271	739	6,617	12	27	3,391	1,852	12,637	2,139	*38,413*	4,562	1,926	9,228	4,867	2	2,247	20	18,290	4,467	10,592	184	115	*38,210*	202	**26,404**
2048	12,649	4,020	7,655	755	6,635	12	25	3,461	1,892	12,781	2,139	*39,245*	4,770	1,898	9,259	4,920	2	2,287	19	18,386	4,772	10,617	192	117	*38,853*	391	**26,795**
2049	15,508	4,009	19,111	765	6,611	10	21	3,874	2,287	13,568	2,139	*54,336*	5,359	1,853	9,166	4,980	2	2,508	23	18,532	7,532	10,651	192	125	*42,391*	11,944	**38,740**
2050	13,764	4,009	7,509	715	6,578	6	19	3,994	2,428	13,739	2,139	*41,161*	5,220	1,821	9,273	5,094	2	2,499	19	18,708	5,950	10,630	192	125	*40,825*	336	**39,076**
2051	16,138	4,009	12,230	719	6,607	6	20	3,964	2,766	14,083	2,139	*48,599*	5,344	1,897	9,226	5,084	2	2,530	22	18,760	8,208	10,651	192	129	*43,284*	5,315	**44,390**
2052	14,323	4,020	6,511	691	6,621	6	20	3,967	2,511	13,816	2,139	*40,809*	5,766	1,922	9,340	5,078	2	2,484	20	18,846	6,454	10,623	192	120	*42,002*	-1,193	**43,198**
2053	14,116	4,009	7,486	695	6,627	6	22	3,859	2,479	13,688	2,139	*41,438*	5,504	1,970	9,312	5,052	2	2,444	22	18,801	6,305	10,629	192	118	*41,550*	-112	**43,086**
2054	16,470	4,009	14,193	703	6,629	6	21	3,930	2,749	14,039	2,139	*50,851*	4,917	2,015	9,254	5,185	2	2,521	23	19,000	8,658	10,654	192	133	*43,555*	7,295	**50,381**
2055	14,034	4,009	6,353	672	6,597	6	20	4,031	2,408	13,735	2,139	*40,270*	5,650	2,035	9,366	5,216	2	2,493	21	19,132	6,295	10,624	192	126	*42,019*	-1,749	**48,632**
2056	13,639	4,020	5,679	676	6,660	7	23	3,900	2,357	13,623	2,139	*39,101*	5,622	2,083	9,389	5,116	2	2,455	21	19,066	5,683	10,611	192	118	*41,292*	-2,191	**46,441**
2057	13,602	4,009	5,450	677	6,647	6	24	3,756	2,400	13,511	2,139	*38,711*	5,047	2,104	9,346	5,139	2	2,396	21	19,008	5,783	10,616	192	120	*40,767*	-2,056	**44,385**
2058	11,997	4,009	3,529	690	6,674	7	26	3,675	2,167	13,239	2,139	*34,913*	5,325	2,100	9,371	4,958	2	2,337	22	18,790	4,448	10,605	192	113	*39,473*	-4,560	**39,825**
2059	12,722	4,009	5,333	703	6,678	8	27	3,538	2,084	13,038	2,139	*37,242*	4,803	2,085	9,325	5,070	1	2,310	21	18,812	4,766	10,605	192	117	*39,295*	-2,054	**37,772**
2060	11,973	4,020	4,511	726	6,704	10	27	3,506	1,942	12,915	2,139	*35,558*	4,947	2,063	9,352	4,945	1	2,286	21	18,668	4,258	10,603	192	113	*38,781*	-3,223	**34,548**
2061	14,564	4,009	13,127	745	6,642	10	25	3,620	2,220	13,262	2,139	*47,102*	4,835	2,049	9,237	5,093	1	2,378	22	18,781	6,465	10,645	192	124	*41,042*	6,060	**40,608**
2062	12,461	4,009	5,412	710	6,624	7	24	3,748	2,008	13,121	2,139	*37,142*	5,123	2,006	9,315	5,021	1	2,370	19	18,732	4,733	10,615	192	118	*39,514*	-2,371	**38,236**
2063	11,391	4,009	3,727	718	6,693	7	25	3,618	2,101	13,161	2,139	*34,427*	5,104	2,015	9,319	4,816	1	2,310	19	18,481	3,881	10,599	188	111	*38,364*	-3,936	**34,300**
2064	11,866	4,020	4,276	733	6,743	9	27	3,483	2,179	13,174	2,139	*35,475*	4,662	2,012	9,307	4,950	1	2,272	19	18,562	4,142	10,595	191	113	*38,264*	-2,790	**31,510**
2065	11,604	4,009	3,969	743	6,734	11	27	3,387	1,983	12,885	2,139	*34,607*	4,637	2,003	9,279	4,860	1	2,216	20	18,380	3,934	10,589	191	111	*37,843*	-3,237	**28,274**
2066	12,372	4,009	6,476	756	6,693	12	27	3,344	1,899	12,732	2,139	*37,727*	4,321	1,993	9,235	4,879	1	2,200	22	18,330	4,458	10,605	191	116	*38,021*	-294	**27,980**
2067	12,985	4,009	8,252	761	6,674	12	26	3,407	1,912	12,791	2,139	*40,177*	4,494	1,965	9,216	4,940	1	2,226	22	18,370	4,935	10,629	192	120	*38,741*	1,436	**29,416**
2068	11,494	4,020	4,308	758	6,692	11	25	3,463	1,772	12,721	2,139	*34,684*	4,711	1,957	9,291	4,827	1	2,218	19	18,313	3,891	10,594	190	113	*37,812*	-3,128	**26,287**
2069	11,340	4,009	3,784	764	6,710	11	27	3,373	1,934	12,818	2,139	*34,089*	4,256	1,951	9,241	4,860	1	2,178	17	18,248	3,718	10,576	173	112	*37,083*	-2,993	**23,294**
Average	**13,257**	**4,012**	**7,290**	**755**	**6,591**	**11**	**22**	**3,612**	**2,200**	**13,191**	**2,139**	**39,888**	**4,825**	**1,736**	**9,246**	**4,910**	**1**	**2,325**	**21**	**18,240**	**5,448**	**10,611**	**188**	**119**	**39,432**	**457**	**27,632**

[A]Water Year corresponds to October 1 of the previous year, through September 30th of the current year.

[B]Return flows consist of water that recharges the Subbasin via municipal distribution network leaks, septic system discharges, and infiltration of irrigation water

[C]Represents surface water diversions through the operation of YVWD-25

[D]The YIHM calculates groundwater discharges to land surface when groundwater elevations in a given cell are higher than the top elevation of the cell

Table 2C-16: Projected Future Baseline with Climate Change II Water Budget

Individual Components of the Basin Water Budget Reported in Units of Acre-Feet (AF)

Water Year[A]	Inflows to Groundwater System											Outflows from Groundwater System											Change in Groundwater in Storage	
				Subsurface Inflows									Subsurface Outflows											
	Stream Leakage	Return Flows[B]	Precipitation Recharge	From Beaumont Basin	From San Timoteo Basin	From SBBA	From Crafton Hills	From Yucaipa Hills	From San Bernardino Mtns	Subtotals	Surface Water Spreading	Total Basin Inflows	ET	To Beaumont Basin	To San Timoteo Basin	To SBBA	To Crafton Hills	To Yucaipa Hills	To San Bernardino Mtns	GW Discharges to Streams	GW Extractions	Surface Water Diversions[C]	GW Discharge to Surface[D]	Total Basin Outflows	Annual	Cumulative
2019	11,195	4,009	3,839	891	6,592	27	21	3,209	1,558	11,407	2,139	33,480	3,984	1,070	9,164	4,363	1	2,114	16	3,367	10,562	131	100	34,871	-1,390	**-1,390**
2020	10,994	4,020	4,494	894	6,577	26	21	3,151	1,729	11,504	2,139	34,045	4,101	1,090	9,178	4,461	1	2,106	16	3,466	10,551	145	112	35,227	-1,181	**-2,572**
2021	10,823	4,009	3,982	888	6,560	25	22	3,090	1,650	11,347	2,139	33,189	3,936	1,099	9,162	4,326	1	2,082	16	3,341	10,549	132	109	34,753	-1,564	**-4,135**
2022	11,708	4,009	6,983	893	6,536	24	22	3,111	1,703	11,396	2,139	37,129	4,221	1,116	9,118	4,533	1	2,092	19	3,834	10,563	173	110	35,780	1,349	**-2,786**
2023	11,996	4,009	7,106	883	6,512	21	22	3,148	1,727	11,429	2,139	37,562	3,979	1,141	9,117	4,555	1	2,105	20	4,027	10,574	181	113	35,813	1,750	**-1,037**
2024	11,050	4,020	4,928	874	6,538	19	21	3,188	1,719	11,485	2,139	34,497	4,280	1,168	9,176	4,377	1	2,104	17	3,521	10,565	168	109	35,486	-989	**-2,025**
2025	13,393	4,009	13,363	878	6,525	17	20	3,322	2,116	12,000	2,139	*45,783*	4,522	1,190	9,061	4,568	1	2,215	20	5,226	10,602	172	114	*37,692*	8,091	**6,066**
2026	11,545	4,009	5,755	847	6,547	14	19	3,483	2,048	12,111	2,139	*36,407*	4,815	1,188	9,142	4,469	1	2,230	19	4,018	10,592	192	110	*36,776*	-368	**5,697**
2027	11,458	4,009	5,504	840	6,585	13	20	3,372	2,207	12,196	2,139	*36,147*	4,544	1,255	9,154	4,500	1	2,193	20	3,967	10,587	192	111	*36,523*	-376	**5,321**
2028	10,959	4,020	3,891	840	6,623	14	21	3,290	2,081	12,030	2,139	*33,878*	4,566	1,319	9,186	4,417	1	2,150	21	3,559	10,578	188	106	*36,091*	-2,213	**3,108**
2029	12,036	4,009	5,549	839	6,565	15	22	3,184	2,097	11,884	2,139	*36,456*	3,910	1,355	9,145	4,632	1	2,121	20	4,292	10,590	191	114	*36,371*	85	**3,194**
2030	11,669	4,009	5,687	841	6,554	16	22	3,202	1,849	11,644	2,139	*35,990*	4,480	1,404	9,128	4,562	1	2,109	22	3,992	10,587	192	110	*36,588*	-598	**2,595**
2031	10,989	4,009	3,950	846	6,535	16	23	3,169	1,725	11,467	2,139	*33,400*	4,051	1,416	9,150	4,449	1	2,079	20	3,537	10,565	184	111	*35,562*	-2,162	**433**
2032	11,754	4,020	5,077	839	6,534	16	24	3,109	1,709	11,392	2,139	*35,221*	4,056	1,449	9,141	4,531	1	2,061	20	3,674	10,555	164	109	*35,761*	-540	**-106**
2033	11,235	4,009	6,183	845	6,500	17	23	3,111	1,818	11,469	2,139	*35,880*	4,445	1,462	9,119	4,505	1	2,073	19	3,691	10,561	184	113	*36,172*	-292	**-398**
2034	14,384	4,009	16,767	857	6,449	15	21	3,401	2,228	12,114	2,139	*50,270*	4,737	1,456	9,060	4,679	1	2,274	20	6,226	10,621	188	118	*39,380*	10,890	**10,492**
2035	13,938	4,009	9,525	801	6,380	10	18	3,652	2,333	12,392	2,139	*42,803*	4,802	1,450	9,125	4,797	2	2,336	21	6,037	10,645	192	121	*39,528*	3,275	**13,767**
2036	15,500	4,020	14,073	814	6,458	8	17	3,822	2,737	13,042	2,139	*49,589*	5,568	1,517	9,145	4,781	2	2,435	26	7,308	10,646	192	120	*41,741*	7,848	**21,615**
2037	13,841	4,009	7,058	762	6,452	6	17	3,876	2,469	12,821	2,139	*40,630*	5,835	1,560	9,199	4,669	2	2,404	23	5,941	10,614	192	114	*40,553*	77	**21,692**
2038	15,276	4,009	7,815	749	6,501	6	19	3,717	2,633	12,876	2,139	*42,863*	5,003	1,650	9,185	4,860	1	2,358	24	6,883	10,621	192	119	*40,899*	1,964	**23,656**
2039	16,655	4,009	11,322	751	6,473	7	19	3,745	2,794	13,038	2,139	*47,915*	5,135	1,730	9,188	5,068	2	2,384	27	8,401	10,654	192	128	*42,909*	5,006	**28,662**
2040	13,859	4,020	7,046	725	6,470	6	19	3,839	2,476	12,810	2,139	*40,599*	6,048	1,766	9,308	4,773	2	2,397	25	6,161	10,620	192	116	*41,408*	-809	**27,853**
2041	13,120	4,009	5,546	718	6,483	6	21	3,716	2,396	12,622	2,139	*38,154*	5,316	1,819	9,274	4,826	2	2,347	23	5,339	10,606	192	113	*39,857*	-1,703	**26,150**
2042	12,695	4,009	4,747	717	6,541	7	23	3,611	2,388	12,569	2,139	*36,876*	5,222	1,860	9,274	4,746	2	2,296	23	4,938	10,598	192	112	*39,262*	-2,386	**23,764**
2043	11,973	4,009	3,964	726	6,578	9	24	3,507	2,304	12,422	2,139	*35,233*	5,078	1,866	9,267	4,701	2	2,252	24	4,367	10,592	192	111	*38,450*	-3,217	**20,547**
2044	11,685	4,020	3,687	741	6,607	11	25	3,426	2,133	12,202	2,139	*34,475*	4,750	1,878	9,285	4,653	2	2,222	23	4,053	10,587	192	110	*37,754*	-3,280	**17,267**
2045	11,172	4,009	3,435	757	6,594	12	26	3,315	1,895	11,842	2,139	*33,354*	4,643	1,873	9,241	4,617	2	2,173	21	3,654	10,574	188	107	*37,094*	-3,740	**13,527**
2046	10,811	4,009	3,111	768	6,594	14	27	3,222	1,703	11,558	2,139	*32,397*	4,422	1,859	9,224	4,530	2	2,124	21	3,339	10,556	166	107	*36,350*	-3,953	**9,574**
2047	11,694	4,009	6,241	786	6,572	15	27	3,166	1,688	11,468	2,139	*36,337*	4,352	1,831	9,158	4,628	2	2,124	22	3,860	10,558	165	109	*36,809*	-472	**9,102**
2048	11,939	4,020	6,858	803	6,575	16	26	3,218	1,724	11,559	2,139	*37,318*	4,603	1,820	9,198	4,667	2	2,146	22	4,052	10,579	188	110	*37,386*	-67	**9,035**
2049	14,675	4,009	17,715	812	6,522	14	22	3,600	2,067	12,225	2,139	*51,575*	5,156	1,778	9,101	4,750	2	2,362	25	6,402	10,629	191	117	*40,513*	11,062	**20,097**
2050	12,510	4,009	6,848	755	6,503	8	20	3,746	2,170	12,446	2,139	*38,708*	5,161	1,750	9,197	4,728	2	2,366	19	4,831	10,612	192	116	*38,971*	-264	**19,833**
2051	14,706	4,009	11,268	763	6,551	7	20	3,681	2,641	12,901	2,139	*45,786*	5,257	1,809	9,160	4,853	2	2,397	22	6,614	10,636	192	119	*41,061*	4,725	**24,558**
2052	13,029	4,020	6,060	743	6,594	7	21	3,720	2,443	12,785	2,139	*38,777*	5,610	1,826	9,255	4,771	1	2,371	21	5,284	10,612	192	113	*40,057*	-1,280	**23,278**
2053	12,890	4,009	6,466	742	6,596	7	22	3,604	2,398	12,627	2,139	*38,872*	5,368	1,865	9,223	4,766	1	2,322	22	5,175	10,610	192	111	*39,655*	-783	**22,495**
2054	15,156	4,009	11,652	750	6,573	8	22	3,637	2,621	12,861	2,139	*46,567*	4,810	1,903	9,194	4,928	1	2,376	23	7,041	10,644	192	123	*41,237*	5,330	**27,825**
2055	12,527	4,009	5,918	729	6,550	7	21	3,721	2,300	12,599	2,139	*37,921*	5,483	1,921	9,279	4,752	1	2,358	21	5,040	10,612	192	116	*39,776*	-1,855	**25,970**
2056	12,104	4,020	5,152	726	6,611	7	23	3,614	2,284	12,540	2,139	*36,681*	5,371	1,978	9,289	4,754	1	2,318	21	4,456	10,597	192	110	*39,087*	-2,406	**23,564**
2057	12,264	4,009	5,478	730	6,616	9	24	3,485	2,327	12,462	2,139	*37,082*	4,881	1,983	9,247	4,843	1	2,267	21	4,556	10,597	192	113	*38,701*	-1,619	**21,945**
2058	11,049	4,009	3,391	739	6,648	10	25	3,423	2,074	12,181	2,139	*33,509*	5,132	2,021	9,265	4,555	1	2,210	22	3,655	10,590	191	106	*37,749*	-4,240	**17,705**
2059	11,768	4,009	4,535	757	6,636	12	27	3,314	1,945	11,934	2,139	*35,142*	4,675	2,001	9,238	4,665	1	2,184	21	3,908	10,585	191	110	*37,579*	-2,437	**15,269**
2060	11,154	4,020	3,769	769	6,650	14	27	3,265	1,784	11,740	2,139	*33,592*	4,730	1,987	9,260	4,560	1	2,147	21	3,555	10,572	188	105	*37,129*	-3,537	**11,732**
2061	13,319	4,009	10,979	792	6,570	14	26	3,316	2,001	11,927	2,139	*43,165*	4,677	1,958	9,163	4,820	1	2,215	23	5,119	10,609	191	115	*38,890*	4,275	**16,007**
2062	11,394	4,009	4,762	765	6,577	12	24	3,427	1,789	11,829	2,139	*34,898*	4,907	1,925	9,215	4,568	1	2,205	20	3,835	10,589	191	110	*37,565*	-2,667	**13,340**
2063	10,540	4,009	3,482	772	6,633	12	25	3,322	1,827	11,820	2,139	*32,762*	4,788	1,929	9,207	4,459	1	2,157	19	3,184	10,565	153	104	*36,565*	-3,802	**9,538**
2064	11,054	4,020	3,755	783	6,654	14	27	3,216	1,962	11,872	2,139	*33,624*	4,394	1,918	9,214	4,570	1	2,131	19	3,437	10,559	152	106	*36,502*	-2,878	**6,660**
2065	10,773	4,009	3,241	793	6,637	15	27	3,139	1,808	11,626	2,139	*32,582*	4,401	1,905	9,186	4,456	1	2,082	19	3,293	10,551	152	104	*36,149*	-3,568	**3,092**
2066	11,545	4,009	5,310	799	6,594	16	27	3,083	1,731	11,452	2,139	*35,253*	4,161	1,892	9,141	4,573	1	2,055	22	3,692	10,555	169	108	*36,369*	-1,116	**1,975**
2067	12,087	4,009	7,040	805	6,561	16	26	3,123	1,734	11,460	2,139	*37,540*	4,310	1,883	9,134	4,648	1	2,067	24	4,011	10,573	184	111	*36,947*	594	**2,569**
2068	10,608	4,020	3,781	808	6,589	16	26	3,155	1,543	11,329	2,139	*32,686*	4,521	1,862	9,193	4,419	1	2,057	20	3,191	10,562	155	105	*36,085*	-3,400	**-830**
2069	10,557	4,009	3,195	812	6,569	16	27	3,081	1,588	11,280	2,139	*31,993*	4,063	1,846	9,154	4,440	1	2,013	17	3,106	10,548	106	105	*35,399*	-3,406	**-4,237**
Average	**12,295**	**4,012**	**6,496**	**795**	**6,558**	**13**	**23**	**3,393**	**2,053**	**12,039**	**2,139**	**37,776**	**4,731**	**1,659**	**9,188**	**4,630**	**1**	**2,211**	**21**	**4,538**	**10,589**	**180**	**112**	**37,859**	**-83**	**11,589**

[A]Water Year corresponds to October 1 of the previous year, through September 30th of the current year.

[B]Return flows consist of water that recharges the Subbasin via municipal distribution network leaks, septic system discharges, and infiltration of irrigation water

[C]Represents surface water diversions through the operation of YVWD-25

[D]The YIHM calculates groundwater discharges to land surface when groundwater elevations in a given cell are higher than the top elevation of the cell

Table 2C-17: Parameter groups included in YIHM Calibration and Sensitivity Analysis		
Group Name	Model Component	Parameter Description
A	PRMS	Solar Radiation and PET parameters
B	PRMS, MODFLOW	Soil zone and
C	MODFLOW	Hydraulic conductivity
D	MODFLOW	Storage properties
E	MODFLOW	General head and constant head boundary condition properties
F	MODFLOW	Conductance parameters for faults and barriers to flow
G	MODFLOW	Streambed conductivity
H	MODFLOW	Unsaturated zone parameters, including brook-corey exponent, extinction depths, and surface leakage conductances

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Table 2C-18: Historical Water Budget for the Western Heights Management Area

Water Year[A]	Water Year Type[B]	Inflows to Principal Aquifer									Outflows from Principal Aquifer										Change in Storage	
					Subsurface Inflows									Subsurface Outflows								
		Stream Leakage	Return Flows	Precipitation Recharge	From North Bench MA	From Crafton Hills	From SBBA	From Calimesa MA	From San. Tim. MA	Subtotal	Total Inflows	ET	GW Production	GW Discharge to Streams	To North Bench MA	To Crafton Hills	To SBBA	To Calimesa MA	To San. Tim. MA	*Subtotal*	GW Discharge to Surface	Total Outflows	Annual	Cumulative
1965	Normal	0	72	80	335	11	0	733	73	*1,152*	1,305	1	2,646	0	0	0	0	60	148	*208*	0	2,855	***-1,550***	**-1,550**
1966	Above Normal	0	72	251	343	10	0	731	96	*1,181*	1,505	8	2,741	0	0	0	0	45	148	*194*	0	2,943	***-1,438***	**-2,988**
1967	Wet	0	72	260	332	10	0	708	119	*1,169*	1,502	10	2,315	0	0	0	0	45	151	*195*	0	2,520	***-1,018***	**-4,007**
1968	Normal	0	73	199	332	10	0	685	141	*1,167*	1,440	0	2,580	0	0	0	0	46	156	*202*	0	2,782	***-1,342***	**-5,349**
1969	Wet	1	72	692	341	10	0	690	176	*1,217*	1,982	16	1,986	0	0	0	0	43	162	*205*	0	2,208	***-225***	**-5,575**
1970	Dry	0	321	360	333	9	0	710	172	*1,225*	1,906	2	2,186	0	0	0	0	38	169	*208*	0	2,396	***-490***	**-6,064**
1971	Below Normal	0	202	235	334	9	0	716	150	*1,209*	1,646	2	2,259	0	0	0	0	29	171	*200*	0	2,460	***-814***	**-6,879**
1972	Dry	0	202	168	338	9	0	706	139	*1,192*	1,562	1	2,831	0	0	0	0	24	171	*195*	0	3,026	***-1,464***	**-8,343**
1973	Above Normal	0	202	153	338	9	0	686	135	*1,168*	1,523	4	2,381	0	0	0	0	20	170	*190*	0	2,575	***-1,052***	**-9,394**
1974	Below Normal	0	202	220	316	9	0	718	136	*1,180*	1,602	8	2,473	0	0	0	0	19	170	*189*	0	2,670	***-1,068***	**-10,462**
1975	Normal	0	204	179	294	9	0	737	135	*1,174*	1,557	0	2,326	0	0	0	0	27	170	*197*	0	2,523	***-966***	**-11,429**
1976	Normal	0	207	205	289	9	0	753	135	*1,186*	1,597	4	2,351	0	0	0	0	30	171	*201*	0	2,556	***-959***	**-12,388**
1977	Below Normal	0	206	190	299	8	0	768	135	*1,211*	1,607	6	2,214	0	0	0	0	27	171	*199*	0	2,418	***-811***	**-13,198**
1978	Wet	1	206	789	296	8	0	786	169	*1,260*	2,256	17	2,382	0	1	0	0	38	172	*211*	0	2,612	***-356***	**-13,554**
1979	Above Normal	0	206	489	289	8	0	828	178	*1,304*	1,999	15	2,410	0	0	0	0	43	178	*221*	0	2,646	***-648***	**-14,202**
1980	Wet	1	76	738	286	8	0	866	188	*1,349*	2,164	17	2,267	0	0	0	0	48	181	*229*	0	2,514	***-350***	**-14,552**
1981	Dry	0	32	482	284	8	0	900	173	*1,365*	1,880	0	2,236	0	0	0	0	50	184	*234*	0	2,470	***-590***	**-15,142**
1982	Above Normal	0	32	384	286	8	0	926	159	*1,379*	1,795	12	2,121	0	0	0	0	41	182	*223*	0	2,356	***-561***	**-15,703**
1983	Wet	1	32	464	277	8	0	938	178	*1,400*	1,897	16	1,957	0	0	0	0	39	183	*222*	0	2,195	***-298***	**-16,001**
1984	Dry	0	32	353	276	8	0	982	173	*1,439*	1,824	0	2,429	0	0	0	0	45	186	*232*	0	2,661	***-837***	**-16,838**
1985	Below Normal	0	50	280	284	8	0	1,010	155	*1,456*	1,787	0	2,533	0	0	0	0	45	185	*229*	0	2,762	***-975***	**-17,813**
1986	Normal	0	56	215	290	8	0	1,056	150	*1,503*	1,774	0	2,626	0	0	0	0	39	183	*222*	0	2,848	***-1,074***	**-18,887**
1987	Dry	0	56	190	294	7	0	1,086	147	*1,535*	1,781	0	2,460	0	0	0	0	32	181	*214*	0	2,674	***-894***	**-19,780**
1988	Below Normal	0	56	164	294	7	0	1,105	146	*1,552*	1,772	0	2,591	0	0	0	0	29	181	*210*	0	2,801	***-1,029***	**-20,809**
1989	Below Normal	0	56	136	296	7	0	1,122	137	*1,562*	1,754	0	2,641	0	0	0	0	28	179	*208*	0	2,848	***-1,094***	**-21,903**
1990	Dry	0	158	130	298	7	0	1,146	133	*1,584*	1,873	0	2,926	0	0	0	0	33	177	*210*	0	3,136	***-1,263***	**-23,167**
1991	Above Normal	0	192	273	297	7	0	1,131	141	*1,576*	2,042	5	2,624	0	0	0	0	32	176	*209*	0	2,838	***-796***	**-23,963**
1992	Above Normal	0	193	340	290	7	0	1,109	151	*1,557*	2,090	12	2,476	0	0	0	0	37	178	*215*	0	2,704	***-614***	**-24,576**
1993	Wet	1	411	954	283	7	0	1,097	207	*1,594*	2,961	17	2,616	0	1	0	0	53	182	*235*	0	2,868	***92***	**-24,484**
1994	Below Normal	0	432	509	293	7	0	1,132	195	*1,627*	2,568	0	2,795	0	0	0	0	68	190	*259*	0	3,054	***-487***	**-24,971**
1995	Wet	1	561	672	299	7	0	1,114	185	*1,605*	2,839	17	2,733	0	1	0	0	58	191	*249*	0	2,999	***-160***	**-25,131**
1996	Dry	0	606	455	290	7	0	1,088	172	*1,557*	2,618	0	2,863	0	0	0	0	60	193	*254*	0	3,117	***-499***	**-25,630**
1997	Above Normal	0	604	350	289	7	0	1,070	147	*1,512*	2,467	9	2,876	0	0	0	0	64	189	*253*	0	3,138	***-672***	**-26,302**
1998	Wet	1	604	528	279	7	0	1,066	175	*1,527*	2,660	15	3,228	0	0	0	0	71	188	*259*	0	3,502	***-842***	**-27,144**
1999	Dry	0	604	396	277	7	0	1,073	179	*1,536*	2,536	0	2,842	0	0	0	0	85	192	*278*	0	3,120	***-584***	**-27,728**
2000	Dry	0	640	298	283	7	0	1,051	148	*1,488*	2,426	0	2,503	0	0	0	0	77	190	*268*	0	2,771	***-345***	**-28,073**
2001	Dry	0	649	266	258	7	0	1,037	141	*1,442*	2,358	0	2,359	0	0	0	0	91	186	*278*	0	2,637	***-279***	**-28,352**
2002	Critically Dry	0	649	226	249	7	0	1,023	135	*1,414*	2,289	0	2,466	0	0	0	0	100	184	*284*	0	2,751	***-462***	**-28,814**
2003	Above Normal	0	649	224	245	7	0	1,003	138	*1,393*	2,266	4	2,340	0	0	0	0	106	182	*288*	0	2,631	***-365***	**-29,180**
2004	Dry	0	651	205	243	7	0	988	140	*1,377*	2,233	0	2,386	0	0	0	0	108	182	*291*	0	2,676	***-443***	**-29,622**
2005	Wet	1	456	500	237	7	0	988	180	*1,412*	2,369	14	2,380	0	0	0	0	116	183	*300*	0	2,694	***-326***	**-29,948**
2006	Below Normal	0	391	340	236	7	0	979	182	*1,403*	2,134	0	2,537	0	0	0	0	123	189	*312*	0	2,848	***-714***	**-30,662**
2007	Critically Dry	0	391	219	242	6	0	986	153	*1,388*	1,998	0	2,759	0	0	0	0	125	188	*313*	0	3,072	***-1,074***	**-31,736**
2008	Normal	0	392	219	245	6	0	997	148	*1,395*	2,006	0	2,456	0	0	0	0	129	186	*315*	0	2,771	***-765***	**-32,501**
2009	Below Normal	0	391	210	245	6	0	980	146	*1,377*	1,978	0	1,961	0	0	0	0	123	184	*307*	0	2,268	***-290***	**-32,791**
2010	Above Normal	0	400	316	245	6	0	963	156	*1,370*	2,087	3	1,870	0	0	0	0	120	184	*303*	0	2,177	***-90***	**-32,881**
2011	Wet	1	403	419	246	6	0	949	174	*1,376*	2,198	5	1,943	0	0	0	0	118	186	*304*	0	2,251	***-52***	**-32,934**
2012	Dry	0	404	342	250	6	0	958	158	*1,372*	2,119	0	2,089	0	0	0	0	122	188	*310*	0	2,398	***-280***	**-33,214**
2013	Dry	0	403	261	255	6	0	978	144	*1,383*	2,047	0	2,077	0	0	0	0	126	185	*311*	0	2,389	***-342***	**-33,555**
2014	Dry	0	403	212	259	6	0	974	138	*1,377*	1,991	0	2,110	0	0	0	0	125	183	*308*	0	2,418	***-426***	**-33,981**
Historical Average		**0**	**293**	**335**	**286**	**7.64**	***0***	***937***	***153***	***1,384***	***2,011***	***5***	***2,443***	***0***	***0***	***0***	***0***	***64***	***179***	***243***	***0***	***2,691***	**-680**	
Critically Dry Wate Year Avg		0	520	223	245	7	*0*	*1,005*	*144*	*1,401*	*2,143*	*0*	*2,613*	*0*	*0*	*0*	*0*	*113*	*186*	*299*	*0*	*2,912*	*-768*	
Dry Water Year Avg		0	369	294	281	7	*0*	*977*	*154*	*1,419*	*2,082*	*0*	*2,450*	*0*	*0*	*0*	*0*	*73*	*184*	*256*	*0*	*2,706*	*-624*	
Below Normal Water Year Avg		0	221	254	289	8	*0*	*948*	*154*	*1,397*	*1,872*	*2*	*2,445*	*0*	*0*	*0*	*0*	*55*	*180*	*235*	*0*	*2,681*	*-809*	
Normal Water Year Avg		0	167	183	297	9	*0*	*827*	*130*	*1,263*	*1,613*	*1*	*2,497*	*0*	*0*	*0*	*0*	*55*	*169*	*224*	*0*	*2,722*	*-1,109*	
Above Normal Water Year Avg		0	283	309	291	8	*0*	*939*	*145*	*1,382*	*1,975*	*8*	*2,427*	*0*	*0*	*0*	*0*	*56*	*176*	*233*	*0*	*2,668*	*-693*	
Wet Water Year Avg		1	289	602	288	8	*0*	*920*	*175*	*1,391*	*2,283*	*14*	*2,381*	*0*	*0*	*0*	*0*	*63*	*178*	*241*	*0*	*2,636*	*-354*	

Table 2C-19: Historical Water Budget for the North Bench Management Area

Water Year	Water Year Type	Inflows to Principal Aquifer													Outflows from Principal Aquifer												Change in Groundwater in Storage	
						Subsurface Inflows													Subsurface Outflows										
		Stream Leakage	Return Flows	Precipitation Recharge	Surface Water Spreading	From San Bernardino Mtns	From Crafton Hills	From Yucaipa Hills	From SBBA near Mill Creek	From San Timoteo Subbasin	From Calimesa	From Western Heights	Subtotal	Total Inflows	ET	GW Production	Surface Water Diversions	GW Discharge to Streams	To San Bernardino Mtns	To Crafton Hills	To Yucaipa Hills	To SBB near Mill Creek	To San Timoteo Subbasin	To Calimesa	To Western Heights	Subtotal	GW Discharge to Surface	Total Outflows	Annual	Cumulative
1965	Normal	1,829	1,992	1,253	0	1,455	36	2,510	263	436	14	0	4,714	9,787	1,092	2,477	0	2,006	13	0	1,910	238	12	2,088	335	4,598	5	10,178	***-391***	**-391**
1966	Above Normal	2,400	1,992	3,456	0	1,596	35	2,568	242	429	17	0	4,885	12,733	1,377	3,049	31	2,371	14	0	1,940	272	14	2,101	343	4,685	6	11,518	***1,215***	**823**
1967	Wet	2,533	1,992	3,160	0	1,705	34	2,603	228	433	14	0	5,017	12,702	1,145	2,845	36	2,512	13	0	1,937	296	13	2,167	332	4,757	6	11,301	***1,401***	**2,225**
1968	Normal	2,045	1,997	1,695	0	1,837	34	2,610	223	434	14	0	5,151	10,889	1,294	3,026	16	2,242	13	0	1,927	307	13	2,210	332	4,802	5	11,385	***-496***	**1,729**
1969	Wet	3,943	1,992	7,782	0	2,374	33	2,745	203	426	14	0	5,795	19,511	1,450	3,048	127	3,564	15	0	2,047	337	15	2,247	341	5,001	8	13,197	***6,314***	**8,043**
1970	Dry	2,480	1,992	2,294	0	2,298	32	2,848	180	464	13	0	5,836	12,602	1,459	2,905	111	2,820	17	0	2,051	373	9	2,260	333	5,044	7	12,346	***256***	**8,299**
1971	elow Norm	2,629	1,991	2,122	0	2,453	32	2,727	168	456	14	0	5,851	12,592	1,375	2,544	142	2,826	18	0	2,037	389	11	2,292	334	5,082	7	11,975	***617***	**8,916**
1972	Dry	2,391	1,996	1,574	0	2,295	32	2,702	163	452	15	0	5,658	11,620	1,543	2,597	156	2,602	21	0	2,000	403	12	2,361	338	5,135	5	12,038	***-418***	**8,498**
1973	bove Norm	3,131	1,991	3,300	0	2,241	32	2,660	159	433	18	0	5,543	13,964	1,265	3,133	217	3,117	20	0	1,999	414	15	2,392	338	5,177	6	12,914	***1,049***	**9,547**
1974	elow Norm	2,755	1,991	2,425	0	2,070	31	2,754	155	434	14	0	5,457	12,628	1,466	4,030	206	2,851	20	0	1,987	429	15	2,387	316	5,155	6	13,715	***-1,086***	**8,461**
1975	Normal	2,380	2,008	1,501	0	2,021	31	2,731	151	439	14	0	5,386	11,276	1,220	3,326	133	2,523	19	0	1,959	440	14	2,339	294	5,065	6	12,273	***-997***	**7,463**
1976	Normal	2,546	2,020	2,031	0	2,077	31	2,678	150	436	15	0	5,387	11,984	1,282	3,257	88	2,490	18	0	1,942	442	15	2,295	289	5,001	5	12,123	***-138***	**7,325**
1977	elow Norm	2,436	2,015	2,199	0	2,093	31	2,659	154	434	15	0	5,385	12,035	1,269	3,075	100	2,505	19	0	1,936	427	16	2,266	299	4,963	6	11,918	***118***	**7,443**
1978	Wet	4,728	2,015	10,722	0	2,517	30	3,024	152	454	13	1	6,191	23,656	1,676	2,739	220	4,464	19	0	2,173	433	13	2,370	296	5,304	10	14,413	***9,243***	**16,686**
1979	bove Norm	4,251	2,015	5,736	0	2,618	27	3,267	133	502	14	0	6,561	18,562	1,606	2,621	267	4,350	23	0	2,268	485	6	2,494	289	5,565	12	14,421	***4,142***	**20,828**
1980	Wet	6,368	1,096	9,452	0	3,033	25	3,558	121	540	15	0	7,293	24,209	1,946	2,985	332	6,004	25	0	2,445	517	6	2,626	286	5,905	13	17,184	***7,025***	**27,853**
1981	Dry	4,625	783	2,421	0	2,842	24	3,571	113	574	20	0	7,145	14,975	1,980	3,148	286	4,537	27	0	2,383	529	7	2,639	284	5,869	11	15,832	***-858***	**26,995**
1982	bove Norm	5,447	783	4,215	0	2,987	25	3,395	113	561	19	0	7,099	17,544	1,570	2,579	299	5,135	30	0	2,334	527	8	2,637	286	5,822	11	15,416	***2,128***	**29,123**
1983	Wet	5,952	783	6,453	0	2,913	24	3,475	110	604	21	0	7,147	20,336	1,491	2,178	332	5,790	29	0	2,388	545	8	2,729	277	5,976	13	15,781	***4,555***	**33,679**
1984	Dry	3,832	786	2,961	0	2,581	22	3,589	102	603	23	0	6,919	14,498	1,964	2,287	279	4,004	27	0	2,392	575	8	2,858	276	6,137	10	14,680	***-182***	**33,496**
1985	elow Norm	4,068	1,102	2,597	0	2,555	22	3,480	96	583	24	0	6,761	14,528	1,852	2,233	268	4,014	27	0	2,362	583	9	2,913	284	6,179	9	14,554	***-27***	**33,470**
1986	Normal	3,841	1,209	2,007	0	2,505	22	3,393	91	581	25	0	6,617	13,674	1,754	2,337	257	3,815	26	0	2,306	592	9	2,864	290	6,087	8	14,258	***-584***	**32,885**
1987	Dry	3,192	1,209	1,376	0	2,385	22	3,308	90	576	24	0	6,406	12,182	1,637	2,255	230	3,287	24	0	2,263	596	8	2,817	294	6,003	7	13,419	***-1,237***	**31,649**
1988	elow Norm	3,007	1,212	1,387	0	2,304	23	3,223	93	572	25	0	6,240	11,846	1,499	2,366	218	3,132	23	0	2,224	590	8	2,817	294	5,957	6	13,178	***-1,333***	**30,316**
1989	elow Norm	2,612	1,209	1,289	0	2,122	23	3,137	100	558	24	0	5,964	11,074	1,576	2,653	194	2,831	22	0	2,180	569	8	2,781	296	5,856	5	13,116	***-2,042***	**28,274**
1990	Dry	2,390	852	760	0	1,953	23	3,065	108	553	22	0	5,724	9,726	1,429	2,926	172	2,607	21	0	2,140	549	7	2,773	298	5,789	5	12,928	***-3,202***	**25,072**
1991	bove Norm	3,110	732	3,831	0	1,959	24	3,066	118	539	22	0	5,726	13,400	1,533	3,343	198	3,032	19	0	2,158	524	9	2,783	297	5,790	5	13,902	***-502***	**24,569**
1992	bove Norm	3,166	734	3,882	0	1,986	24	3,174	121	546	20	0	5,870	13,652	1,613	3,575	235	3,268	18	0	2,216	518	7	2,770	290	5,820	7	14,518	***-866***	**23,704**
1993	Wet	5,274	733	11,331	0	2,434	22	3,597	122	585	18	1	6,780	24,119	1,935	3,095	302	5,152	22	0	2,451	514	6	2,796	283	6,072	11	16,567	***7,552***	**31,255**
1994	elow Norm	3,709	733	2,711	0	2,454	20	3,651	103	610	20	0	6,859	14,012	1,724	3,164	279	3,953	19	0	2,458	544	6	2,801	293	6,121	10	15,252	***-1,239***	**30,016**
1995	Wet	6,562	895	8,087	0	2,873	20	3,685	105	597	21	1	7,301	22,845	1,948	2,793	354	6,340	22	0	2,533	544	7	2,882	299	6,287	12	17,732	***5,113***	**35,129**
1996	Dry	4,661	952	2,519	0	2,530	19	3,733	91	614	23	0	7,009	15,141	2,191	3,056	330	4,825	21	0	2,503	591	7	3,000	290	6,412	9	16,822	***-1,680***	**33,449**
1997	bove Norm	4,618	950	3,170	0	2,470	19	3,601	82	587	24	0	6,781	15,518	2,103	3,322	305	4,609	22	0	2,460	611	7	3,037	289	6,426	8	16,773	***-1,255***	**32,194**
1998	Wet	6,527	950	8,059	0	2,743	18	3,692	79	614	22	0	7,169	22,704	1,762	3,279	347	6,395	23	0	2,532	633	7	3,063	279	6,537	12	18,331	***4,373***	**36,567**
1999	Dry	4,078	950	1,928	0	2,404	18	3,756	73	623	22	0	6,895	13,850	1,918	4,203	315	4,450	21	0	2,511	663	7	3,072	277	6,552	10	17,447	***-3,597***	**32,971**
2000	Dry	3,974	1,193	1,696	0	2,425	19	3,620	73	599	23	0	6,759	13,622	2,062	5,509	299	4,026	21	0	2,474	650	7	3,002	283	6,438	8	18,341	***-4,718***	**28,252**
2001	Dry	3,940	1,271	1,731	0	2,417	20	3,475	78	580	24	0	6,594	13,536	1,804	5,252	297	4,050	20	0	2,411	620	7	2,838	258	6,155	8	17,566	***-4,030***	**24,223**
2002	Critically Dr	2,801	1,271	747	36	2,206	22	3,412	83	567	22	0	6,312	11,168	1,817	5,560	235	3,178	21	0	2,349	601	7	2,704	249	5,930	6	16,727	***-5,560***	**18,663**
2003	bove Norm	3,302	1,271	2,166	691	2,133	23	3,298	92	558	23	0	6,128	13,558	1,633	5,117	242	3,423	20	0	2,319	576	7	2,563	245	5,730	13	16,158	***-2,600***	**16,063**
2004	Dry	2,802	1,274	1,562	624	1,988	24	3,285	100	552	21	0	5,970	12,232	1,774	5,443	215	3,072	17	0	2,299	559	6	2,441	243	5,565	15	16,083	***-3,851***	**12,211**
2005	Wet	4,813	2,339	8,047	135	2,257	23	3,471	100	560	19	0	6,430	21,765	1,819	5,426	276	4,773	19	0	2,408	566	6	2,367	237	5,605	12	17,912	***3,853***	**16,064**
2006	elow Norm	2,942	2,700	2,113	17	2,152	22	3,555	84	582	18	0	6,413	14,184	1,795	5,187	239	3,373	17	0	2,411	611	6	2,347	236	5,628	8	16,230	***-2,046***	**14,019**
2007	Critically Dr	2,484	2,700	1,115	4	2,284	22	3,393	77	568	22	0	6,366	12,669	1,866	4,999	199	2,918	17	0	2,359	620	7	2,303	242	5,548	6	15,535	***-2,866***	**11,153**
2008	Normal	3,082	2,707	2,101	551	2,292	23	3,250	79	558	22	0	6,223	14,664	1,886	3,967	218	3,289	17	0	2,319	615	7	2,285	245	5,488	12	14,859	***-195***	**10,958**
2009	elow Norm	2,989	2,700	2,290	1,337	2,096	22	3,178	78	546	17	0	5,937	15,252	1,957	3,679	215	3,252	17	0	2,262	625	6	2,273	245	5,430	33	14,566	***686***	**11,644**
2010	bove Norm	4,099	3,347	4,485	3,549	1,985	22	3,187	73	526	16	0	5,809	21,289	1,954	3,956	236	4,187	18	0	2,253	666	8	2,291	245	5,482	107	15,921	***5,367***	**17,011**
2011	Wet	4,414	3,565	5,436	3,071	2,000	21	3,254	60	536	14	0	5,885	22,371	2,041	3,737	254	4,513	17	0	2,282	738	6	2,472	246	5,761	122	16,428	***5,943***	**22,954**
2012	Dry	3,216	3,575	2,564	2,936	1,886	20	3,291	45	544	13	0	5,799	18,091	2,154	3,806	209	3,622	16	0	2,280	809	6	2,683	250	6,045	93	15,929	***2,161***	**25,115**
2013	Dry	2,988	3,565	2,188	2,170	2,030	19	3,191	38	537	17	0	5,831	16,741	2,041	3,530	182	3,312	16	0	2,242	847	6	2,828	255	6,195	75	15,334	***1,407***	**26,522**
2014	Dry	2,634	3,565	1,541	521	2,005	18	3,100	35	529	16	0	5,703	13,964	1,933	4,560	176	2,899	16	0	2,204	867	6	2,996	259	6,348	25	15,941	***-1,977***	**24,545**
Historical Average		**3,600**	**1,714**	**3,429**	**313**	**2,277**	**25**	**3,204**	**117**	**533**	**19**	**0**	**6,174**	**15,230**	**1,690**	**3,444**	**217**	**3,686**	**20**	**0**	**2,244**	**539**	**9**	**2,586**	**286**	**5,685**	**16**	**14,739**	**491**	
ically Dry Wate Year A		2,643	1,985	931	20	2,245	22	3,402	80	568	22	0	6,339	11,919	1,841	5,280	217	3,048	19	0	2,354	610	7	2,503	245	5,739	6	16,131	**-4,213**	
Dry Water Year Avg		3,372	1,712	1,937	447	2,289	22	3,324	92	557	20	0	6,303	13,770	1,849	3,677	233	3,579	20	0	2,297	616	8	2,755	281	5,978	20	15,336	**-1,566**	
w Normal Water Year		3,016	1,739	2,126	150	2,255	25	3,152	115	531	19	0	6,096	13,128	1,612	3,215	207	3,193	20	0	2,206	530	9	2,542	289	5,597	10	13,834	**-706**	
lormal Water Year Av		2,621	1,989	1,765	92	2,031	29	2,862	159	481	17	0	5,580	12,046	1,421	3,065	119	2,727	18	0	2,061	439	12	2,347	297	5,173	7	12,513	**-467**	
ve Normal Water Year		3,725	1,535	3,804	471	2,219	25	3,135	126	520	19	0	6,045	15,580	1,628	3,411	226	3,721	20	0	2,216	510	9	2,563	291	5,611	19	14,616	**964**	
Wet Water Year Avg		5,111	1,636	7,853	321	2,485	25	3,310	128	535	17	0	6,501	21,422	1,721	3,212	258	4,951	20	0	2,319	512	9	2,572	288	5,720	22	15,885	**5,537**	

Table 2C-20: Historical Water Budget for the Calimesa Management Area

Water Year	Water Year Type	Inflows to Principal Aquifer										Outflows from Principal Aquifer										Change in Groundwater in Storage	
					Subsurface Inflows										Subsurface Outflows								
		Stream Leakage	Return Flows	Precipitation Recharge	From Yucaipa Hills	From North Bench	From Western Heights	From Beaumont Basin	From San Timoteo MA	From San Timoteo subbasin	Subtotal	Total Inflows	ET	GW Production	GW Discharge to Streams	To Yucaipa Hills	To North Bench	To Western Heigths	To Beaumont Basin	To San Timoteo Subbasin	To San Timoteo MA	Subtotal	GW Discharge to Surface	Total Outflows	Annual	Cumulative
1965	Normal	419	36	798	222	2,088	60	1,660	11	322	4,363	5,616	132	3,814	30	15	14	733	565	34	524	1,885	1	5,862	***-246***	**-246**
1966	Above Normal	427	36	1,157	223	2,101	45	1,754	16	313	4,451	6,071	146	4,915	31	18	17	731	568	42	525	1,901	1	6,994	***-923***	**-1,170**
1967	Wet	441	36	1,193	230	2,167	45	1,855	17	268	4,581	6,251	143	5,326	35	17	14	708	588	46	522	1,896	1	7,401	***-1,151***	**-2,320**
1968	Normal	422	36	1,095	251	2,210	46	1,878	14	256	4,655	6,208	153	5,173	33	18	14	685	604	47	505	1,874	1	7,234	***-1,026***	**-3,346**
1969	Wet	442	36	2,328	271	2,247	43	1,915	28	247	4,751	7,556	161	4,341	40	25	14	690	601	56	515	1,902	1	6,445	***1,111***	**-2,235**
1970	Dry	456	199	1,589	339	2,260	38	1,822	15	224	4,698	6,941	184	4,574	39	21	13	710	578	56	497	1,875	2	6,674	***267***	**-1,969**
1971	elow Norm	441	244	1,494	348	2,292	29	1,875	12	250	4,806	6,984	175	4,866	38	21	14	716	576	54	482	1,863	2	6,943	***40***	**-1,928**
1972	Dry	396	244	1,368	315	2,361	24	1,896	11	261	4,867	6,877	179	5,207	33	20	15	706	589	53	473	1,855	2	7,275	***-399***	**-2,327**
1973	bove Norm	420	244	1,492	292	2,392	20	1,875	11	267	4,856	7,012	152	4,705	38	20	18	686	588	47	461	1,820	2	6,717	***295***	**-2,032**
1974	elow Norm	416	197	1,525	282	2,387	19	1,812	12	262	4,774	6,912	169	4,794	36	20	14	718	578	51	460	1,842	1	6,842	***70***	**-1,963**
1975	Normal	397	354	1,452	275	2,339	27	1,660	12	258	4,571	6,774	152	4,659	36	17	14	737	559	48	459	1,835	1	6,684	***90***	**-1,872**
1976	Normal	368	410	1,511	281	2,295	30	1,506	11	276	4,399	6,688	157	4,572	34	19	15	753	542	48	457	1,834	1	6,598	***90***	**-1,782**
1977	elow Norm	388	409	1,644	270	2,266	27	1,410	11	274	4,257	6,698	163	4,427	36	20	15	768	527	50	456	1,835	1	6,463	***236***	**-1,546**
1978	Wet	425	409	3,497	288	2,370	38	1,591	79	215	4,581	8,912	186	4,660	45	33	13	786	535	64	454	1,886	2	6,778	***2,134***	**588**
1979	bove Norm	454	409	2,754	375	2,494	43	1,540	34	195	4,681	8,298	200	4,519	54	29	14	828	541	61	458	1,930	3	6,706	***1,592***	**2,180**
1980	Wet	459	2,085	4,319	400	2,626	48	1,292	24	184	4,574	11,437	248	4,500	61	40	15	866	501	70	506	1,999	4	6,811	***4,626***	**6,806**
1981	Dry	458	2,640	3,492	458	2,639	50	908	12	173	4,240	10,830	291	4,544	53	36	20	900	459	62	512	1,990	5	6,882	***3,948***	**10,754**
1982	bove Norm	454	2,640	3,493	428	2,637	41	646	9	194	3,954	10,541	262	3,952	55	36	19	926	435	59	521	1,997	5	6,271	***4,270***	**15,024**
1983	Wet	450	2,640	3,759	382	2,729	39	521	8	165	3,843	10,693	322	4,025	63	39	21	938	433	64	538	2,034	6	6,451	***4,242***	**19,266**
1984	Dry	456	2,648	2,943	389	2,858	45	426	8	158	3,885	9,931	498	5,413	52	37	23	982	423	63	557	2,084	6	8,053	***1,878***	**21,144**
1985	elow Norm	450	4,128	3,089	381	2,913	45	398	7	176	3,919	11,587	519	5,645	50	40	24	1,010	418	60	577	2,129	7	8,350	***3,237***	**24,381**
1986	Normal	449	4,630	3,071	349	2,864	39	269	6	167	3,694	11,844	561	4,740	69	37	25	1,056	493	58	607	2,274	9	7,653	***4,191***	**28,572**
1987	Dry	449	4,630	2,354	332	2,817	32	206	5	156	3,549	10,981	693	5,172	94	36	24	1,086	494	56	636	2,332	10	8,301	***2,681***	**31,252**
1988	elow Norm	446	4,642	1,937	310	2,817	29	175	5	152	3,488	10,513	736	5,764	106	36	25	1,105	547	51	664	2,427	12	9,045	***1,467***	**32,720**
1989	elow Norm	433	4,630	1,694	296	2,781	28	162	4	153	3,425	10,182	790	5,811	104	35	24	1,122	594	54	681	2,509	13	9,226	***955***	**33,675**
1990	Dry	417	1,180	933	284	2,773	33	222	5	181	3,497	6,028	734	5,601	92	29	22	1,146	591	46	681	2,516	12	8,955	***-2,927***	**30,748**
1991	bove Norm	433	17	1,074	268	2,783	32	428	6	231	3,748	5,272	632	5,512	72	27	22	1,131	448	45	656	2,330	8	8,554	***-3,281***	**27,467**
1992	bove Norm	446	17	1,291	257	2,770	37	604	7	246	3,920	5,674	592	5,536	57	27	20	1,109	423	50	641	2,270	6	8,461	***-2,787***	**24,679**
1993	Wet	452	27	3,138	281	2,796	53	752	31	225	4,138	7,756	582	5,611	72	36	18	1,097	456	57	672	2,336	7	8,608	***-853***	**23,827**
1994	elow Norm	455	28	2,025	372	2,801	68	746	10	266	4,264	6,771	525	5,834	43	33	20	1,132	477	51	615	2,329	7	8,738	***-1,967***	**21,860**
1995	Wet	453	31	2,676	361	2,882	58	708	15	283	4,307	7,468	461	6,186	49	33	21	1,114	512	61	600	2,342	7	9,045	***-1,577***	**20,283**
1996	Dry	458	32	1,725	381	3,000	60	742	10	308	4,502	6,718	448	6,770	27	28	23	1,088	495	58	570	2,262	6	9,513	***-2,795***	**17,488**
1997	bove Norm	455	32	1,561	365	3,037	64	837	9	350	4,661	6,709	383	6,831	22	29	24	1,070	509	53	547	2,232	5	9,473	***-2,763***	**14,724**
1998	Wet	453	32	2,779	344	3,063	71	980	16	334	4,808	8,073	330	5,854	32	36	22	1,066	501	58	544	2,228	5	8,450	***-377***	**14,347**
1999	Dry	459	32	2,017	375	3,072	85	1,026	11	331	4,901	7,409	352	6,871	29	26	22	1,073	510	55	518	2,205	5	9,462	***-2,053***	**12,294**
2000	Dry	457	33	1,742	391	3,002	77	1,145	9	378	5,003	7,236	358	6,830	21	31	23	1,051	541	54	501	2,201	4	9,415	***-2,179***	**10,115**
2001	Dry	455	34	1,391	361	2,838	91	972	9	380	4,650	6,530	312	6,578	21	26	24	1,037	618	51	485	2,242	4	9,156	***-2,626***	**7,489**
2002	ritically Dr	455	34	1,044	335	2,704	100	863	9	408	4,419	5,951	293	7,175	19	24	22	1,023	776	47	476	2,367	3	9,857	***-3,906***	**3,584**
2003	bove Norm	454	34	902	308	2,563	106	941	10	431	4,358	5,747	258	6,910	22	25	23	1,003	770	45	464	2,331	2	9,523	***-3,777***	**-193**
2004	Dry	453	34	911	296	2,441	108	929	10	432	4,217	5,615	236	6,242	19	24	21	988	1,053	48	452	2,586	2	9,085	***-3,470***	**-3,663**
2005	Wet	451	35	2,106	286	2,367	116	936	22	412	4,139	6,730	217	5,711	29	34	19	988	1,010	58	456	2,564	2	8,522	***-1,792***	**-5,454**
2006	elow Norm	457	35	1,628	339	2,347	123	920	15	406	4,150	6,271	203	5,751	23	25	18	979	1,135	53	430	2,639	3	8,619	***-2,348***	**-7,802**
2007	ritically Dr	455	35	1,153	348	2,303	125	932	12	451	4,172	5,815	193	5,407	19	24	22	986	1,455	54	411	2,952	2	8,573	***-2,758***	**-10,560**
2008	Normal	455	35	1,513	330	2,285	129	944	12	458	4,157	6,160	185	4,972	22	24	22	997	1,002	51	400	2,495	2	7,676	***-1,516***	**-12,076**
2009	elow Norm	453	35	1,268	304	2,273	123	959	12	445	4,117	5,873	186	4,532	25	22	17	980	689	49	392	2,147	2	6,892	***-1,019***	**-13,095**
2010	bove Norm	453	39	1,439	278	2,291	120	933	16	424	4,062	5,993	163	4,574	27	22	16	963	669	52	392	2,115	2	6,882	***-889***	**-13,984**
2011	Wet	454	41	1,866	270	2,472	118	884	21	398	4,162	6,522	171	4,159	30	22	14	949	652	54	395	2,086	2	6,447	***74***	**-13,910**
2012	Dry	458	41	1,620	293	2,683	122	823	16	383	4,319	6,437	187	4,279	29	20	13	958	674	49	385	2,101	2	6,598	***-161***	**-14,070**
2013	Dry	450	41	1,469	301	2,828	126	763	15	391	4,423	6,383	173	4,734	27	21	17	978	763	50	380	2,208	2	7,143	***-761***	**-14,831**
2014	Dry	434	41	1,567	298	2,996	125	721	15	399	4,554	6,596	169	5,227	24	19	16	974	931	51	375	2,365	1	7,786	***-1,191***	**-16,021**
Historical Average		**442**	**812**	**1,918**	**320**	**2,586**	***64***	***1,035***	***14***	***290***	***4,310***	***7,481***	***314***	***5,276***	***42***	***27***	***19***	***937***	***620***	***53***	***510***	***2,165***	***4***	***7,802***	***-320***	
ically Dry Wate Year		455	34	1,098	341	2,503	*113*	*897*	*11*	*429*	*4,295*	*5,883*	*243*	*6,291*	*19*	*24*	*22*	*1,005*	*1,116*	*50*	*444*	*2,659*	*3*	*9,215*	*-3,332*	
Dry Water Year Avg		447	845	1,794	344	2,755	*73*	*900*	*11*	*297*	*4,379*	*7,465*	*344*	*5,574*	*40*	*27*	*20*	*977*	*623*	*54*	*501*	*2,201*	*4*	*8,164*	*-699*	
w Normal Water Year		438	1,594	1,812	322	2,542	*55*	*940*	*10*	*265*	*4,133*	*7,977*	*385*	*5,269*	*51*	*28*	*19*	*948*	*616*	*53*	*529*	*2,191*	*5*	*7,902*	*75*	
lormal Water Year Av		418	917	1,573	285	2,347	*55*	*1,319*	*11*	*290*	*4,307*	*7,215*	*223*	*4,655*	*37*	*22*	*17*	*827*	*628*	*48*	*492*	*2,033*	*3*	*6,951*	*264*	
ve Normal Water Yea		444	385	1,685	310	2,563	*56*	*1,062*	*13*	*295*	*4,299*	*6,813*	*310*	*5,273*	*42*	*26*	*19*	*939*	*550*	*51*	*518*	*2,103*	*4*	*7,731*	*-918*	
Wet Water Year Avg		448	537	2,766	311	2,572	*63*	*1,143*	*26*	*273*	*4,389*	*8,140*	*282*	*5,037*	*46*	*32*	*17*	*920*	*579*	*59*	*520*	*2,127*	*4*	*7,496*	*644*	

Table 2C-21: Historical Water Budget for the San Timoteo Management Area

Water Year	Water Year Type	Inflows to Principal Aquifer									Outflows from Principal Aquifer										Change in Storage	
					Subsurface Inflows									Subsurface Outflows								
		Stream Leakage	Return Flows	Precipitation Recharge	From Beaumont Basin	From San Timoteo Subbasin	From SBBA	From Western Heights	From Calimesa	Total Subsurface Inflows	Total Inflows	ET	GW Production	GW Discharge to Streams	To Beaumont Basin	To San Timoteo Subbasin	To SBBA	To Western Heights	To Calimesa	To Subsurface Outflows	GW Discharge to Surface	Total Outflows	Annual	Cumulative
1965	Normal	7,169	1	77	363	5,753	6	148	524	6,794	14,041	1,115	962	163	175	8,933	3,042	73	11	12,236	2	14,477	***-436***	**-436**
1966	Above Normal	7,614	1	289	361	5,708	6	148	525	6,748	14,652	1,166	904	228	173	8,898	3,192	96	16	12,376	2	14,675	***-23***	**-459**
1967	Wet	7,681	1	344	356	5,681	6	151	522	6,717	14,742	1,101	571	246	172	8,886	3,220	119	17	12,414	2	14,334	***408***	**-51**
1968	Normal	7,220	1	176	354	5,689	6	156	505	6,710	14,107	1,164	327	147	170	8,914	3,049	141	14	12,288	1	13,928	***179***	**129**
1969	Wet	8,035	1	1,076	336	5,627	6	162	515	6,647	15,759	1,193	283	363	164	8,801	3,313	176	28	12,483	2	14,324	***1,434***	**1,563**
1970	Dry	7,405	3	315	326	5,624	6	169	497	6,622	14,345	1,280	195	159	159	8,893	3,117	172	15	12,356	2	13,992	***352***	**1,915**
1971	elow Norm	7,313	3	237	330	5,621	6	171	482	6,609	14,161	1,222	181	175	157	8,916	3,123	150	12	12,358	2	13,938	***223***	**2,139**
1972	Dry	7,215	3	191	327	5,643	6	171	473	6,620	14,029	1,281	185	148	158	8,952	3,091	139	11	12,351	2	13,966	***63***	**2,201**
1973	bove Norm	7,361	3	196	321	5,586	6	170	461	6,544	14,104	1,058	191	237	158	8,941	3,251	135	11	12,495	3	13,984	***120***	**2,322**
1974	elow Norm	7,491	3	288	316	5,571	6	170	460	6,523	14,306	1,246	187	221	158	8,935	3,259	136	12	12,501	2	14,157	***149***	**2,470**
1975	Normal	7,281	4	184	314	5,565	6	170	459	6,515	13,984	1,173	189	189	158	8,947	3,200	135	12	12,452	2	14,005	***-21***	**2,450**
1976	Normal	7,616	5	304	314	5,569	6	171	457	6,517	14,442	1,219	187	223	160	8,958	3,267	135	11	12,530	2	14,161	***281***	**2,731**
1977	elow Norm	7,273	5	205	311	5,539	6	171	456	6,483	13,966	1,315	190	176	160	8,954	3,205	135	11	12,465	2	14,148	***-182***	**2,548**
1978	Wet	8,141	5	1,137	292	5,540	6	172	454	6,465	15,748	1,257	222	400	160	8,854	3,463	169	79	12,725	3	14,606	***1,142***	**3,690**
1979	bove Norm	7,949	5	445	305	5,554	6	178	458	6,500	14,898	1,251	214	271	157	8,950	3,482	178	34	12,801	3	14,540	***358***	**4,048**
1980	Wet	8,348	21	1,167	288	5,626	6	181	506	6,606	16,142	1,340	323	384	153	8,933	3,500	188	24	12,799	3	14,848	***1,294***	**5,342**
1981	Dry	7,850	26	443	280	5,666	6	184	512	6,647	14,966	1,588	269	184	153	9,014	3,323	173	12	12,675	2	14,718	***248***	**5,590**
1982	bove Norm	8,086	26	454	281	5,697	6	182	521	6,687	15,254	1,308	228	300	157	9,013	3,577	159	9	12,914	3	14,753	***501***	**6,091**
1983	Wet	8,281	26	481	268	5,688	6	183	538	6,684	15,472	1,281	192	331	165	9,028	3,703	178	8	13,082	4	14,889	***582***	**6,673**
1984	Dry	7,892	27	325	257	5,715	6	186	557	6,722	14,965	1,655	149	201	174	9,113	3,430	173	8	12,898	2	14,906	***59***	**6,733**
1985	elow Norm	7,817	57	309	255	5,708	6	185	577	6,730	14,913	1,503	122	233	183	9,093	3,498	155	7	12,936	3	14,797	***115***	**6,848**
1986	Normal	7,733	67	274	245	5,711	6	183	607	6,751	14,825	1,542	120	222	192	9,109	3,450	150	6	12,907	3	14,793	***31***	**6,879**
1987	Dry	7,648	67	250	232	5,698	6	181	636	6,753	14,717	1,547	100	212	204	9,115	3,441	147	5	12,911	3	14,773	***-56***	**6,823**
1988	elow Norm	7,656	67	233	224	5,688	6	181	664	6,763	14,720	1,503	135	221	215	9,138	3,468	146	5	12,972	3	14,833	***-114***	**6,709**
1989	elow Norm	7,556	67	218	220	5,664	6	179	681	6,750	14,590	1,519	161	208	224	9,104	3,435	137	4	12,905	2	14,795	***-204***	**6,505**
1990	Dry	7,478	17	201	220	5,658	6	177	681	6,742	14,438	1,525	173	193	232	9,102	3,364	133	5	12,835	2	14,728	***-290***	**6,215**
1991	bove Norm	7,731	1	499	226	5,660	6	176	656	6,725	14,955	1,457	179	299	234	9,030	3,507	141	6	12,918	3	14,856	***99***	**6,314**
1992	bove Norm	7,777	1	398	228	5,673	6	178	641	6,726	14,902	1,446	156	270	233	9,074	3,564	151	7	13,029	3	14,903	***-1***	**6,313**
1993	Wet	8,406	2	1,584	202	5,672	6	182	672	6,734	16,726	1,454	158	482	227	8,974	3,612	207	31	13,051	4	15,150	***1,576***	**7,889**
1994	elow Norm	8,037	2	398	218	5,685	6	190	615	6,715	15,151	1,567	154	237	219	9,090	3,601	195	10	13,115	3	15,075	***76***	**7,966**
1995	Wet	8,299	2	924	228	5,739	6	191	600	6,764	15,988	1,450	158	425	212	9,020	3,683	185	15	13,115	4	15,152	***836***	**8,802**
1996	Dry	7,943	2	371	233	5,800	6	193	570	6,802	15,117	1,713	152	217	206	9,145	3,604	172	10	13,137	3	15,222	***-106***	**8,696**
1997	bove Norm	7,823	2	361	250	5,831	6	189	547	6,823	15,009	1,645	155	264	200	9,123	3,619	147	9	13,097	3	15,164	***-155***	**8,541**
1998	Wet	8,374	2	888	246	5,828	6	188	544	6,813	16,076	1,358	150	443	195	9,072	3,831	175	16	13,288	4	15,244	***832***	**9,373**
1999	Dry	8,003	2	382	248	5,830	6	192	518	6,795	15,182	1,707	149	240	189	9,165	3,675	179	11	13,220	3	15,319	***-137***	**9,236**
2000	Dry	7,872	2	307	264	5,890	6	190	501	6,852	15,033	1,756	146	232	186	9,199	3,627	148	9	13,168	3	15,304	***-271***	**8,965**
2001	Dry	7,851	2	277	269	5,880	6	186	485	6,827	14,957	1,582	141	268	182	9,163	3,738	141	9	13,232	3	15,227	***-270***	**8,695**
2002	ritically Dr	7,640	2	228	273	5,889	6	184	476	6,828	14,697	1,754	144	203	179	9,180	3,526	135	9	13,029	3	15,133	***-436***	**8,259**
2003	bove Norm	7,834	2	297	278	5,857	6	182	464	6,787	14,920	1,540	146	277	176	9,154	3,717	138	10	13,195	3	15,161	***-241***	**8,018**
2004	Dry	7,683	2	248	283	5,864	6	182	452	6,788	14,721	1,639	145	226	171	9,178	3,596	140	10	13,096	3	15,109	***-388***	**7,630**
2005	Wet	8,296	1	967	269	5,823	6	183	456	6,738	16,002	1,433	44	447	163	9,048	3,846	180	22	13,259	4	15,188	***814***	**8,444**
2006	elow Norm	7,910	1	368	272	5,819	6	189	430	6,716	14,995	1,687	4	232	155	9,144	3,637	182	15	13,133	3	15,059	***-64***	**8,380**
2007	ritically Dr	7,641	1	258	286	5,846	6	188	411	6,737	14,637	1,764	0	195	149	9,160	3,482	153	12	12,956	2	14,918	***-281***	**8,099**
2008	Normal	7,747	1	266	290	5,861	6	186	400	6,744	14,757	1,594	0	244	146	9,168	3,661	148	12	13,134	3	14,975	***-217***	**7,882**
2009	elow Norm	7,670	1	237	292	5,835	6	184	392	6,708	14,617	1,625	0	226	143	9,145	3,589	146	12	13,035	3	14,888	***-272***	**7,610**
2010	bove Norm	7,863	1	447	289	5,803	6	184	392	6,674	14,986	1,514	0	314	141	9,105	3,657	156	16	13,074	3	14,905	***81***	**7,691**
2011	Wet	8,056	1	663	277	5,774	6	186	395	6,638	15,358	1,523	0	349	139	9,085	3,744	174	21	13,163	4	15,039	***319***	**8,010**
2012	Dry	7,729	1	309	278	5,794	6	188	385	6,651	14,690	1,725	0	212	138	9,172	3,547	158	16	13,030	3	14,970	***-280***	**7,730**
2013	Dry	7,652	1	246	288	5,797	6	185	380	6,656	14,555	1,593	0	224	136	9,134	3,594	144	15	13,022	3	14,842	***-287***	**7,444**
2014	Dry	7,565	1	224	292	5,803	6	183	375	6,659	14,450	1,666	0	203	136	9,142	3,474	138	15	12,905	2	14,776	***-326***	**7,117**
Historical Average		**7,770**	**11**	**419**	**280**	**5,721**	**6**	**179**	**510**	**6,695**	**14,895**	**1,451**	**183**	**255**	**175**	**9,047**	**3,472**	**153**	**14**	**12,861**	**3**	**14,753**	**142**	
ically Dry Wate Year A		7,640	1	243	279	5,868	6	186	444	6,783	14,667	1,759	72	199	164	9,170	3,504	144	11	12,993	2	15,026	-358	
Dry Water Year Avg		7,699	11	292	271	5,761	6	184	501	6,724	14,726	1,590	129	209	173	9,106	3,473	154	11	12,917	2	14,847	-121	
w Normal Water Year		7,636	23	277	271	5,681	6	180	529	6,666	14,602	1,465	126	214	179	9,058	3,424	154	10	12,824	2	14,632	-30	
Normal Water Year Av		7,461	13	213	313	5,691	6	169	492	6,672	14,359	1,301	297	198	167	9,005	3,278	130	11	12,591	2	14,390	-30	
ve Normal Water Year		7,782	5	376	282	5,708	6	176	518	6,690	14,853	1,376	241	273	181	9,032	3,508	145	13	12,878	3	14,771	82	
Wet Water Year Avg		8,192	6	923	276	5,700	6	178	520	6,680	15,801	1,339	210	387	175	8,970	3,592	175	26	12,938	3	14,877	924	

Table 2C-22
Comparison of average annual water budget components for each Management Area in the Yucaipa Subbasin

Water Budget Component		Historical Simulation Period: WY 1965-2014				
			Management Area			
		Yucaipa Subbasin	Western Heights	North Bench	Calimesa	San Timoteo
Stream Leakage		11,812	0	3,600	442	7,770
Return Flows		2,829	293	1,714	812	11
Precipitation Recharge		6,101	335	3,429	1,918	419
Subsurface Inflows	From Beaumont Basin	1,315	--	--	1,035	280
	From San Timoteo Basin	6,544	--	533	290	5,721
	From SBBA	123	0	117	--	6
	From Crafton Hills	32	8	25	--	--
	From Yucaipa Hills	3,524	--	3,204	320	--
	From San Bernardino Mountains	2,277	--	2,277	--	--
	From Western Heights MA	--	--	0	64	179
	From North Bench MA	--	286	--	2,586	--
	From Calimesa MA	--	937	19	--	510
	From San Timoteo MA	--	153	--	14	--
	Total Subsurface Inflows	13,815	1,384	6,174	4,310	6,696
Surface Water Spreading		313	--	313	--	--
Average Annual Inflows		*34,870*	*2,012*	*15,231*	*7,481*	*14,896*
ET		3,460	5	1,690	314	1,451
Subsurface Outflows	To Beaumont Basin	795	--	--	620	175
	To San Timoteo Basin	9,109	--	9	53	9,047
	To SBBA	4,011	0	539	--	3,472
	To Crafton Hills	0	0	0	--	--
	To Yucaipa Hills	2,272	--	2,244	27	--
	To San Bernardino Mountains	20	--	20	--	--
	To Western Heights MA	--	--	286	937	153
	To North Bench MA	--	0	--	19	--
	To Calimesa MA	--	64	2,586	--	14
	To San Timoteo MA	--	179	--	510	--
	Total Subsurface Outflows	16,207	243	5,685	2,166	12,861
GW Discharges to Streams		3,984	0	3,686	42	255
Surface Water Diversions		217	--	217	--	--
GW Extractions		11,346	2,443	3,444	5,276	183
GW Discharge to Surface		23	0	16	4	3
Average Annual Outflows		*35,237*	*2,691*	14,737	7,802	14,753
Average Annual Change in Storage		**-367**	**-679**	**494**	**-321**	**143**

Surface Water Diversions represent extractions from YVWD Well 25
"--" represents categories that are not applicable to specific management area, or Subbasin, water budget

DRAFT

Appendix 2-D

Chapter B: YIHM, Yucaipa Subbasin, San Bernardino and Riverside Counties, California

TO BE PROVIDED UPON COMPLETION

Appendix 3-A

Drilling Logs and Well Completion Reports

8423

QUADRUPLICATE
Use to comply with local requirements

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
WATER WELL DRILLERS REPORT

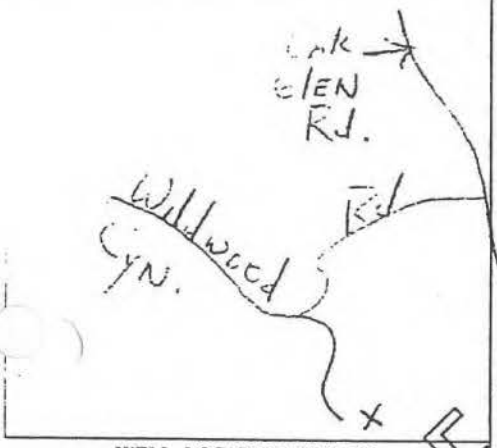
Do not fill in
No. 051199

Notice of Intent No.
Local Permit No. or Date 8423 ASP Corporation

State Well No. 2S/1W-16B1
Other Well No.

(1) OWNER: Name [redacted]
Address [redacted]
City [redacted] Zip 92399

(2) LOCATION OF WELL (See instructions):
County Riverside Owner's Well Number Wildwood Canyon
Well address if different from above
Township 2S Range 1W Section 16
Distance from cities, roads, railroads, fences, etc.



WELL LOCATION SKETCH

(3) TYPE OF WORK:
New Well XX Deepening ☐
Reconstruction ☐
Reconditioning ☐
Horizontal Well ☐
Destruction ☐ (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:
Domestic ☐
Irrigation ☐
Industrial ☐
Test Well ☐
Stock ☐
Municipal ☐
Other XX

(5) EQUIPMENT:
Rotary ☐ Reverse X
Cable ☐ Air ☐
Other ☐ Bucket ☐

(6) GRAVEL PACK:
Yes XX No ☐ Size birdseye
Diameter of bore 24"
Packed from bottom to 50

(7) CASING INSTALLED:
Steel X Plastic ☐ Concrete ☐

(8) PERFORATIONS:
Type of perforation or size of screen

From ft.	To ft.	Dia. in.	Gage or Wall	From ft.	To ft.	Slot size
0	506	12	¼"	206	506	3/32
				12 rows 3 inch apart		

(9) WELL SEAL:
Was surface sanitary seal provided? Yes XX No ☐ If yes, to depth 50 ft.
Were strata sealed against pollution? Yes ☐ No XX Interval ft.
Method of sealing Steel/Concrete

(10) WATER LEVELS:
Depth of first water, if known - ft.
Standing level after well completion - ft.

(11) WELL TESTS:
Was well test made? Yes XX No ☐ If yes, by whom?
Type of test Pump X Bailer ☐ Air lift ☐
Depth to water at start of test ft. At end of test ft
50 gal/min after hours Water temperature
Chemical analysis made? Yes ☐ No XX If yes, by whom?
Was electric log made? Yes ☐ No X If yes, attach copy to this report

(12) WELL LOG: Total depth 506 ft. Depth of completed well 506 ft.
from ft. to ft. Formation (Describe by color, character, size or material)

0 506
0 - 48 Sandy gravel
48 - 60 Clay
60 - 80 Gravel & rock
80 - 185 Clay
185 - 200 Sand
200 - 250 Gravel & sand
250 - 305 Sand
305 - 340 Clay
340 - 500 Gravel, sand & clay
500 - 506 Sandy clay

Work started 1-23 19 79 Completed 2-16 19 79

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
SIGNED Joseph W. Crammer (Well Driller)
NAME Jack Jones Wells & Pumps (Person, firm, or corporation) (Typed or printed)
Address P.O. Box 2031
City Hemet, California Zip 92343
License No. 281601 Date of this report 3-16-79

DWR 188 (REV. 7-76) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

GSSI
411

NOT FOR PUBLIC USE
WATER CODE SEC. 13752

Mail Two Copies to:
DEPARTMENT OF PUBLIC HEALTH
Court House
Riverside, California

WATER WELL DRILLERS REPORT

(County Ordinances No. 340 and 340A)
COUNTY OF RIVERSIDE
DEPARTMENT OF PUBLIC HEALTH

Do Not Fill In 451
State Well No 2S/1W-18L1
Other Well No.
Region

(1) OWNER:

Name [redacted]
Address

(2) LOCATION OF WELL:

County Riverside Owner's number, if any— 3
1110 So. FREMONT - YUCAIPA

(3) TYPE OF WORK (check):

New well ☑ Deepening ☐ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in Item 11.

(4) PROPOSED USE (check):

Domestic ☐ Industrial ☐ Municipal ☐
Irrigation ☑ Test Well ☐ Other ☐

(5) EQUIPMENT:

Rotary ☐
Cable ☑
Dug Well ☐

(6) CASING INSTALLED:

SINGLE ☐ DOUBLE ☐

From ft.	to ft.	Diam.	Gage or Wall
0	340	12"	1/4"
339	415	10"	1/4"

Type and size of shoe or well ring 10"x3/4"x12"

Describe joint ALL JOINTS butt welded

If gravel packed

Diameter of Bore	from ft.	to ft.

Size of gravel:

(7) PERFORATIONS:

Type of perforator used Mills
Size of perforations 3/4 in., length, by 3/8 in.

From ft.	to ft.	Perf. per row	Rows per ft.
100	335	5 holes on 12" centers	

(8) CONSTRUCTION:

Was a surface sanitary seal provided? ☐ Yes ☑ No To what depth ft.
Were any strata sealed against pollution? ☐ Yes ☑ No If yes, note depth of strata
From ft. to ft.
Method of Sealing

(9) WATER LEVELS:

Depth at which water was first found 100 ft.
ing level before perforating 100 ft.
ing level after perforating 100 ft.

(10) WELL TESTS:

Was a pump test made? ☐ Yes ☑ No If yes, by whom?
Yield: gal./min. with ft. draw down after hrs.

(11) WELL LOG:

Total depth 415 ft. Depth of completed well 415 ft.
Formation: *Describe by color, character, size of material, and structure.*

ft. to	ft.	
0	80	BROWN SANDY CLAY
80	275	FRACTURED ROCK WITH CLAY STREAKS
275	412	DECOMPOSED GRANITE
412	415	HARD BLUE GRANITE

12" CASING WAS STUCK AT 340 REDUCTION TO 10" CASING 339' TO 415' WITH 10"x12" ADAPTER AT 339'

10" CASING TORCH PERFORATED

BAILER TEST SHOWING RECOVERY OF 4½ GPM BASED ON 12" 10" CASING AREA.

Work started OCT. 10 19 63. Completed DEC. 9 19 63

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME KIRKLAND WELL SERVICE
(Person, firm, or corporation) (Typed or printed)
Address 32291 DUNLAP
YUCAIPA, CALIF.
[SIGNED] K. Kirkland
Well Driller

Mail Two Copies to:
DEPARTMENT OF PUBLIC HEALTH
Court House
Riverside, California

WATER WELL DRILLERS REPORT

(County Ordinances No. 340 and 340A)
COUNTY OF RIVERSIDE
DEPARTMENT OF PUBLIC HEALTH

Do Not Fill In
State Well No. 2S/1W-18P1
Other Well No.
Region

(1) OWNER:

Name [redacted]
Address [redacted]
Los Angeles, Calif.

(2) LOCATION OF WELL:

County Riverside Owner's number, if any—
36300 1/2 Singleton Rd.
Calimesa, Calif.

(3) TYPE OF WORK (check):

New well ☑ Deepening ☐ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in Item 11.

(4) PROPOSED USE (check):

Domestic ☑ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

(5) EQUIPMENT:

Rotary ☐
Cable ☑
Dug Well ☐

(6) CASING INSTALLED:

SINGLE ☑ DOUBLE ☐

From	ft. to	ft.	Diam.	Gage or Wall
0	288	8"	3/16"	
288	300	8"	1/4"	

Type and size of shoe or well ring 8x8x1/4"
Describe joint ALL JOINTS CIRCUMFERENTIALLY Welded

If gravel packed

Diameter of Bore	from ft.	to ft.

Size of gravel:

(7) PERFORATIONS:

Type of perforator used Mills
Size of perforations 2 in., length, by 1/4 in.
From 130 ft. to 298 ft. 4 Perf. per row 1 Rows per ft.

(8) CONSTRUCTION:

Was a surface sanitary seal provided? ☑ Yes ☐ No To what depth 20 ft.
Were any strata sealed against pollution? ☐ Yes ☑ No If yes, note depth of strata
From 0 ft. to 20 ft.
Method of Sealing Clay Jel mixture

(9) WATER LEVELS:

Depth at which water was first found 132 ft.
Standing level before perforating 132 ft.
Standing level after perforating 132 ft.

(10) WELL TESTS:

Was a pump test made? ☐ Yes ☑ No If yes, by whom?
Yield: gal./min. with ft. draw down after hrs.

(11) WELL LOG:

Total depth 300 ft. Depth of completed well 300 ft.
Formation: *Describe by color, character, size of material, and structure.*

ft. to	ft.	
0	25	Brown Sandy Soil
"	"	Clay, small gravel
25	51	Brown gravel & Boulder
51	68	Brown clay & gravel
68	105	Hard Brown Sandy Cla
105	300	Brown Sandy clay
"	"	some gravel embedde.

Work started Dec. 29 1962. Completed JAN. 22 1963

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Kirkland Well Service
(Person, firm, or corporation) (Typed or printed)
Address 32291 Dunlap Blvd.
Yucaipa, Calif.
[SIGNED] K. Kirkland
Well Driller

7551
409

QUADRUPLICATE
Use to comply with local requirements

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES

WATER WELL DRILLERS REPORT

Do not fill in
No. 277307
State Well No. 2S/1W-19C
Other Well No.

of Intent No.
Local Permit No. or Date

(1) OWNER: Name [redacted]
Address [redacted]
City Redlands, CA ZIP 92374

(2) LOCATION OF WELL (See instructions):
County Riverside Owner's Well Number
Well address if different from above
Township 2-South Range 1-West Section 19
Distance from cities, roads, railroads, fences, etc.

WELL LOCATION SKETCH

(3) TYPE OF WORK:
New Well [X] Deepening [ ]
Reconstruction [ ]
Reconditioning [ ]
Horizontal Well [ ]
Destruction [ ] (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:
Domestic [X]
Irrigation [ ]
Industrial [ ]
Test Well [ ]
Municipal [ ]
Other [ ]
(Describe)

(5) EQUIPMENT:
Rotary [X] Reverse [ ]
Cable [ ] Air [ ]
Other [ ] Bucket [ ]

(6) GRAVEL PACK:
Yes [X] No [ ] Size 3/8 Spl
Diameter of bore 15
Packed from 0 ft. to 435 ft.

(7) CASING INSTALLED:
Steel [X] Plastic [ ] Concrete [ ]

From ft.	To ft.	Dia. in.	Gage or Wall
0	435	3/16	8-5/8

(8) PERFORATIONS:
Type of perforation or size of screen: Vert. Mill Slot

From ft.	To ft.	Slot size
195	275	.093
295	435	.093

(9) WELL SEAL:
Was surface sanitary seal provided? Yes [X] No [ ] If yes, to depth 50 ft
Were strata sealed against pollution? Yes [ ] No [X] Interval ft
Method of sealing Cement in Place

(10) WATER LEVELS:
Depth of first water, if known ft
Standing level after well completion 90 ft

(11) WELL TESTS:
Well test made? Yes [X] No [ ] If yes, by whom?
Type test Pump [ ] Bailer [ ] Air lift [X]
Depth to water at start of test ft At end of test ft
Discharge X gal/min after hours Water temperature
Chemical analysis made? Yes [ ] No [X] If yes, by whom?
Was electric log made Yes [ ] No [X] If yes, attach copy to this report

(12) WELL LOG: Total depth 435 ft. Completed depth 435 ft.

from ft	to ft	Formation (Describe by color, character, size or material)
0	4	Top Soil
4	54	Small Gravel
54	59	Loose Gravel
59	91	Gravel with Some Brown Clay
91	94	Loose Gravel
94	168	Sand and Gravel
168	192	Gravel and Brown Clay
192	200	Boulder Zone
200	211	Sand and Gravel
211	213	Boulder Zone
213	273	Gravel
273	275	Rock Very Hard
275	281	Hard Brown Clay
281	294	Gray Clay with Some Rock
294	321	Gravel 1" - 2"
321	334	Brown Clay and Gravel
334	342	Gravel
342	351	Brown Clay and Gravel
351	355	Gravel
355	373	Gravel
373	377	Brown Clay
377	435	Boulder Zone

Work started 10-4 19 88 Completed 10-24 19 88

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
Signed (WellDriller)
NAME McCalla Brothers - Division of Layne We (Person, firm, or corporation) (Typed or printed)
Address 3132 W. 17th St.
City Santa Ana ZIP 92703
License No. 510011 Date of this report 10-31-88

DWR 188 (REV. 12-86) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM 86 96355

COPY
VOID
WATER WELL DRILLERS REPORT

[redacted]

LOG OF WELL NO. 8
S.R. No. 36-01856

1S/2W-20A #8
1S/2W-20Z = USGS NOT #8

LOCATION: Hill Ranch
NW¼ of SW¼, sect. 25, T1S, R2W, SBB&M
DRILLED BY: E. J. Brockman
R. 1, Box 150
Colton, Calif.
YEAR: March 3, 1951 completed

Ig from YLWD = in folder for well 08

Depth From	Depth To		Material
0	4'	sand/gravel	Top Soil
4'	50'		Sand and rock 2329'
50'	85'		Sandy clay
85'	105'	sandy clay & gravel	Sand and small gravel
105'	178'		Sandy clay
178'	222'		Sand and coarse gravel 2152'
222'	260'	CL	Hard clay — 2119
260'	274'	sandy clay gravel	Sand and small gravel
274'	300'		Sandy clay
300'	306'		Sand — 2058'
306'	340'	clay/rock	Clay and rock 2034'
340'	354'		Rock and Sand
354'	415'	sand w/ clay	Sandy clay
415'	425'		Sand
425'	478'		Sand with streaks of clay 1896'
478'	506'	CL	Hard clay

Hole was reamed to 16" to 363' and 10" x 3/16" casing installed. 10" casing was perforated with 3/16" x 4" slots 4 to the round every foot.

Hole was reamed to 10" from 363' to 506' and 6" x 1/8" casing installed. 6" casing was perforated all the way with 3/16" x 4" slots 4 to the round, one round every foot.

Hole was gravel packed with 3/8" gravel all the way.

Static water level 115'

Well on the pump test pumped the following capacities:

from 143' - 162 GPM
" 166' - 279 GPM
" 178' - 342 GPM

Rotary Rig

2S/2W-2P1 Well 8

WELL RECORD

Rec. #36 01997

SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT

Company_____

Location 8th Street South of Washington Drive Elevation = 2360'

NE 1/4 NE 1/4 Township 2 S Range 2 W Section 3

PIT

Date drilled 1959 By_____

Depth 750' Diameter_____ Packed 500'

CASING

Diameter 16" Length 500' Gauge 10 ga.

" " " " " "

Perforated interval_____

COLUMN

Diameter 8" Length 400 Gauge STD

" " " " " "

Tube diameter_____ Shaft diameter_____

BOWLS

Date installed March 18, 1963 By Turley Pump Company

Make_____ Model 10 LA Serial no. R 58225

Size 10" Stages 11 Length_____ Suction 10'

DESIGN PERFORMANCE

GPM 450	RPM 1760	TDH 400	HP 55
GPM_____	RPM_____	TDH_____	HP_____
GPM_____	RPM_____	TDH_____	HP_____

ENGINE

Date installed 3-63 (from #3 well) By_____

Type Elect. Make U.S. Model HU Serial no. 1251837

Cu. in._____ B & S_____ HP 60 RPM 1800

GEAR

Date installed_____ By_____

Make_____ Model_____ Serial no._____ HP_____

Shaft_____ Universals_____

Notes: Pump test July 25, 1966

Pump Head Jacuzzi - Pump as shown

FORM 115

INVESTIGATION

South Coastal Basin

DIVISION OF WATER RESOURCES
DEPARTMENT OF PUBLIC WORKS
STATE OF CALIFORNIA

25/2W-13E2

SHEET 1

NUMBER E-138e-

WELL LOG

LOCAL DESIGNATION Owner #4

Hicks Y-4

LOCATION 300' S. of Ave. "L," 30' E. of W. line of Lot 225, Sub. 9, Yucaipa Valley, Yucaipa. Sec. 13.

Loc. #18249A

OWNER [redacted]

SKETCH

DATE COMPLETED 1913

DIAMETER OF CASING 16"

DRILLED BY W. D. Anderson

SOURCE OF INFORMATION P. E. Hicks

INSPECTED WHILE DRILLING SEE FILE NO.

SURFACE ELEVATION 2453. Hicks

DEPTH	ELEVATION OF BOTTOM OF STRATUM	MATERIAL	THICKNESS FEET	% VOIDS	ABSOLUTE VOIDS FEET	TOTAL VOIDS FEET
0-20	2433	Packed soil	20			
44	2409	Cement gravel	24			
94	2359	Cement clay	50			
108	2345	Cement and gravel	14			
120	2333	Red clay	12			
168	2285	Gravel	48			
178	2275	Red clay	10			
182	2271	Gravel	4			
188	2265	Red clay, struck water	6			
206	2247	Water gravel	18			
208	2245	Red clay	2			
218	2235	Water gravel	10			
220	2233	Clay	2			
222	2231	Water gravel	2			
270	2183	Cement clay	48			
276	2177	Cement gravel	6			
310	2143	Red clay	34			
316	2137	Water gravel	6			
338	2115	Red clay	22			
360	2093	Water gravel	22			
362	2091	Red clay	2			
368	2085	Water gravel	6			
370	2083	Red clay	2			
372	2081	Cement gravel	36			
408	2045	Red clay	18			
426	2027	Cement gravel	18			
436	2017	Cement clay	4			
440	2013	Cement gravel	36			
476	1977	Cement clay	21			
497	1956	Cement gravel				
		Pumps 40" - Drawdown 100'.				

MICROFILMED

FOR FIELD COPIES USE ALTERNATE LINES

LOG OBTAINED BY DATE

50612 6-51 15M CALIFORNIA STATE PRINTING OFFICE

GSST 343 12

FORM 115
INVESTIGATION

2S/2W-14 F1

SHEET 1

DIVISION OF WATER RESOURCES
DEPARTMENT OF PUBLIC WORKS
STATE OF CALIFORNIA

South Coastal Basin

NUMBER E-136j-

WELL LOG

LOCAL DESIGNATION Owner #15

LOCATION 60' N. of Ave. L, 1700' W. of State Highway, Lot 213, Sub. 9, Yucaipa.

Loc. #182393

OWNER [redacted]

SKETCH

DATE COMPLETED About 1928

DIAMETER OF CASING 16"

DRILLED BY Clark McEuen

SOURCE OF INFORMATION Redlands-Yucaipa Water Co.

INSPECTED WHILE DRILLING SEE FILE NO.

SURFACE ELEVATION

DEPTH	ELEVATION OF BOTTOM OF STRATUM	MATERIAL	THICKNESS FEET	% VOIDS	ABSOLUTE VOIDS FEET	TOTAL VOIDS FEET
1-152		Top soil and clay	152			
330		Water gravel - good	178			
342		Clay and red sandstone	12			
346		Rocks, square gravel	4			
350		Clay	4			
352		Red formation - rock and gravel	2			
356		Clay	4			
358		Red rocks and gravel	2			
360		Clay	2			
		At 300' some streaks of brown sandstone were found. Very thin.				
		Pumps 100"; 100' drawdown.				

MICROFILMED

FOR FIELD COPIES USE ALTERNATE LINES

GSSI 347

LOG OBTAINED BY DATE

FORM 115

INVESTIGATION

South Coastal Basin

2S/2W-15R1

SHEET 1

DIVISION OF WATER RESOURCES
DEPARTMENT OF PUBLIC WORKS
STATE OF CALIFORNIA

NUMBER E-829-

WELL LOG

LOCAL DESIGNATION

Hicks #Y-74

LOCATION 2000' N. and 200' E. from S.W. corner Sec. 14, T.2S., R.2W., Yucaipa.

Loc. #17330-

OWNER [redacted]

DATE COMPLETED 1926

DIAMETER OF CASING 12"

DRILLED BY

SOURCE OF INFORMATION P.E.Hicks

INSPECTED WHILE DRILLING SEE FILE NO.

SURFACE ELEVATION

SKETCH

DEPTH	ELEVATION OF TOP OF STRATUM	MATERIAL	THICKNESS FEET	% VOIDS	ABSOLUTE VOIDS FEET	TOTAL VOIDS FEET
0-79		Soil				
109		Gravel				
114		Clay and gravel mixed				
125		Clay				

MICROFILMED

FOR FIELD COPIES USE ALTERNATE LINES

GSSI 210

QUADRUPLICATE
Use to comply with
cal requirements

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
WATER WELL DRILLERS REPORT

RECEIVED
MAY 17 1990

Do not fill in

Ans'd No. 294181

Notice of Intent No. _____
Local Permit No. or Date _____

State Well No. 2S/2W-16A1
Other Well No. _____

(1) OWNER: Name [redacted]
Address [redacted]
City La Quinta, CA ZIP 92253

(2) LOCATION OF WELL (See instructions):
County Riverside Owner's Well Number 1
Well address if different from above _____
Township 2S Range 2W Section 16
Distance from cities, roads, railroads, fences, etc.
3000' W. of County Line Rd.
1000' So. of San Bernardino County Line

(3) TYPE OF WORK:
New Well [X] Deepening [ ]
Reconstruction [ ]
Reconditioning [ ]
Horizontal Well [ ]
Destruction [ ] (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:
Domestic [X]
Irrigation [ ]
Industrial [ ]
Test Well [ ]
Municipal [ ]
Other [ ]
(Describe)

WELL LOCATION SKETCH

(5) EQUIPMENT:
Rotary [ ] Reverse [X]
Cable [ ] Air [ ]
Other [ ] Bucket [ ]

(6) GRAVEL PACK:
Yes [X] No [ ] Size
Diameter of bore
Packed from ft. to ft.

(7) CASING INSTALLED:
Steel [X] Plastic [ ] Concrete [ ]

From ft.	To ft.	Dia. in.	Gage or Wall
0	760	16	5/16
760	1070	12	5/16

(8) PERFORATIONS:
Type of perforation or size of screen

From ft.	To ft.	Slot size
210	760	3/32
760	1060	3/32

(9) WELL SEAL:
Was surface sanitary seal provided? Yes [X] No [ ] If yes, to depth 100 ft.
Were strata sealed against pollution? Yes [ ] No [X] Interval _____ ft.
Method of sealing _____

(10) WATER LEVELS:
Depth of first water, if known _____ ft.
Standing level after well completion 230' ft.

(11) WELL TESTS:
Was well test made? Yes [X] No [ ] If yes, by whom? McCalla Bros.
Type of test Pump [X] Bailer [ ] Air lift [ ]
Depth to water at start of test 221 ft. At end of test 230 ft.
Discharge 1050 gal/min after 56 hours Water temperature _____
Chemical analysis made? Yes [ ] No [X] If yes, by whom? _____
Was electric log made Yes [X] No [ ] If yes, attach copy to this report

(12) WELL LOG: Total depth 1320 ft. Completed depth 1070 ft.

from ft.	to ft.	Formation (Describe by color, character, size or material)
0	30	Sandy Clay
30	80	Sand, Gravel & Clay
80	110	Sand & Gravel
110	280	Sand, Gravel, Streaks of Clay
280	460	Sand, Gravel & Rock
460	550	Brown Clay & Sandy Gravel
550	750	Rocks, Sand & Spots of Clay
750	885	Hard Granite Formation, Spots
885	975	Fine & Coarse Sand, Clay Strea
975	1087	Sandy Brown Clay
1087	1200	Granite Boulders, Spots of Cla
1200	1320	Sand, Gravel, Granite Boulders

Work started 7-19 19 89 Completed 9-20 19 89

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
Signed _____ (Well Driller)
NAME McCalla Bros., Div. of Layne-Western Co (Person, firm, or corporation) (Typed or printed)
Address 3132 W. 17th St.
City Santa Ana, CA ZIP 92703
License No 510011 Date of this report 9-22-89

COPY NOT FOR PUBLIC USE
WATER CODE SEC. 13752
CONFIDENTIAL

FSI
165

2S/2W-17K1

2S/2W-11-R1

DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WATER RESOURCES DIVISION

No. 2S/2-11[illegible]

Other No.

WELL LOG

State Calif. County Riverside Subarea Calimesa

Owner [redacted]

Location

Drilled by Brewer and Son Address

Date March 1, 1956 Casing diam. 16 Land-surf. alt. 2335 topo.

Source of data

(Enter type of well, perforations, yield, and drawdown at end of log)

Correlation	Ft.	Material	Thickness (feet)	Depth (feet)
		Top soil	3	3
		Sand with some clay	27	30
		Brown clay	70	100
		Brown clay	32	132
		Reddish-brown clay with sand	16	148
		Yellowish clay with sand	37	185
		Sand and gravel with streaks of rock	215	400
		Mainly sand from 390-400.		
		Rotary to 400, cable tool to 500.		
		SW/L - 130-130 ft.		

GSSI 350

NOT IN FILES

WELL-34 Plotted on DFG Map

25/2W -24E3 Well 34

WATER WELL DRILLERS REPORT

DUPLICATE

THIS HAS TO BE W-35

Permit No. 3703
T. 2S., R. 2W Sec. 24
State Well No.
R.C.F.C.D. No. 025/02W-24(E#2) -24E3

(1) OWNER:
Name [redacted] Phone: 797-3329
Address [redacted]
Calimesa, California

(2) LOCATION OF WELL:
County Riverside Owner's Well No. No. 2
Sec. 24-T2S R2W 880 North of Chandler Road
[illegible] Ftte East of Highway 99

(3) TYPE OF WORK (check):
New well ☒ Deepening ☐ Reconditioning ☐ Abandoned ☐
If abandoned, describe material and procedure in Item 11.

(4) PROPOSED USE (check):
Domestic ☐ Industrial ☐ Municipal ☐
Irrigation ☒ Test Well ☐ Other ☐

(5) EQUIPMENT:
Rotary ☒
Cable ☐
Dug Well ☐

(6) CASING INSTALLED:
Threaded ☒ Welded ☐

From	To	Diameter	Gauge or Wall
0	800	16	3/16

If gravel packed:

Diameter of Hole	From	To
21	0	800

Type and size of perforations: none
Size of gravel: Pea
Description: Butt weld

(7) PERFORATIONS:
Type of perforation: Torch
Size of perforations: 1/4 by 1 inch
Perforated from: 170 to 800
Number of rows per casing: 1
Number of perforations per row: 6

(8) CONSTRUCTION:
Was well gravel packed? Yes
Was a surface seal provided? Yes
Depths: From ft. to ft.
Material used in seal: Cement

(9) WATER LEVELS:
Depth at which water was first found: 168 ft.
Standing level before pumping: 168 ft.
Pumping level and yield after pumping: 168 ft.

(10) WELL TESTS:
Was well test made? Yes No If yes, by whom?
Type: Bailer Jetted Pumped Other
Depth to water: Before test ft. After test ft.
Temperature of water: Was a chemical analysis made? Yes No

(11) WELL LOG:
Total depth: 800 ft. Depth of completed well: 800 ft.
Formation: Describe by color, character, size of material, and structure.

From	To	Formation
0	4	Top soil
4	75	Gravel sand and clay
75	155	Gravel and sand
155	220	Sand and clay
220	260	Rock and sand
260	360	Sandy clay & gravel
360	380	Clay
380	394	Sand
394	410	Rock and sand
410	440	Gravel
440	475	Hard sand & clay
475	510	Rock and sand
510	618	Sand & gravel
618	650	Rock
650	800	Hard sand and clay

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GS 2370

MAR 1960
RECEIVED
YUCAIPA VALLEY WATER DIST.

Driller:
Name: R. L. Trosier
Address: 165 E. Mabeshe
San Bernardino, California

TRIPLICATE
File Original, Duplicate and Triplicate with the
REGIONAL WATER POLLUTION
CONTROL BOARD No.
(insert appropriate number)

WATER WELL DRILLERS REPORT

(Sections 7076, 7077, 7078, Water Code)

STATE OF CALIFORNIA

Do Not Fill In
No. 54064
State Well No.
Other Well No.

(1) OWNER:

Name [redacted]
Address
Calimesa, Calif.

(2) LOCATION OF WELL:

County Riverside Owner's number, if any No. 2
R. F. D. or Street No. Sec. 24-t2s 2-W 800 North
of chandle road 400 ft.
East of Highway 99

Permit No! 3703

(3) TYPE OF WORK (check):

New well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in Item 11.

(4) PROPOSED USE (check):

Domestic ☐ Industrial ☐ Municipal ☐
Irrigation ☒ Test Well ☐ Other ☐

(5) EQUIPMENT:

Rotary ☒
Cable ☐
Dug Well ☐

(6) CASING INSTALLED:

SINGLE ☒ DOUBLE ☐

From ft.	to ft.	Diam.	Gage or Wall
0	800	14	3/16

Type and size of shoe or well ring none
Describe joint but weld

If gravel packed

Diameter of Bore	from ft.	to ft.
21	0	800

Size of gravel: Pea

(7) PERFORATIONS:

Type of perforator used torach
Size of perforations 4 1/2 in., length, by 3/16 in.

From ft.	to ft.	Perf. per row	Rows per ft.
170	800	1	6

(8) CONSTRUCTION:

Was a surface sanitary seal provided? ☒ Yes ☐ No To what depth 90 ft.
Were any strata sealed against pollution? ☐ Yes ☒ No If yes, note depth of strata

From ft.	to ft.

Method of Sealing Cement

(9) WATER LEVELS:

Depth at which water was first found 168 ft.
Standing level before perforating 168 ft.
Standing level after perforating 168 ft.

(10) WELL TESTS:

Was a pump test made? ☐ Yes ☐ No If yes, by whom?
Yield: gal./min. with ft. draw down after hrs.
Temperature of water Was a chemical analysis made? ☐ Yes ☐ No
Was electric log made of well? ☐ Yes ☐ No

(11) WELL LOG:

Total depth 800 ft. Depth of completed well 800 ft.
Formations: Describe by color, character, size of material, and structure.

ft.	to ft.	
0	4	Top Soil.
4	75	Gravel sand and clay
75	155	gravel and sand.
155	220	sand and clay
220	260	rock and sand
260	360	sandy clay& gravel
360	380	Clay
380	394	sand
394	410	rock and sand
410	440	gravel
440	475	Hard sand & clay
475	510	rock and sand
510	648	sand & gravel
648	650	rock
650	800	Hard sand and clay

Work started 19 , Completed 19

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME R. L. Trower
(Person, firm, or corporation) (Typed or printed)
Address 445 E. Wabash
San Bernardino, Calif.

[SIGNED]
Well Driller
License No. 189826 Dated , 19

57028 8-57 80M QUIN △ SPO DWR 188 (REV. 3-54)

Well #35

14E2

WELL LOG

2S/2W - 24E3

Well No. _____

Well Owner [redacted] Well No. 1

Location Approximately 2200 feet south of north line of Section 24

; SW ¼, NW ¼, Section 24, T 2 S, R 2 W

Drilled by Trower & Son Date completed October 1959

Drilling method rotary

Total depth _____ Size of casing and depth 14" Gauge 3/16" (Double) (Single)

Type of well _____

Truck water at _____, SWL before perforating 120 after perforating _____ (ft.)

Completion test data: SWL _____ PWL _____ Discharge _____ Hours run _____

Surface elev. 2320 Source of information _____

Perforations _____

Depth	Elev. Bot. of Stratum	Material	Thickness	
3 - 3		Top soil	3	
3 - 90		Red clay and decomposed granite	87	
90 - 134		Gravel and sand	44	
134 - 178		Clay and sand	44	
178 - 200		Gravel rock and sand	22	
200 - 210		Sand	10	
210 - 225		Gravel and sand	15	
225 - 247		Clay	22	
247 - 282		Gravel	35	
282 - 310		Clay and sand	28	
310 - 365		Gravel and sand	55	
365 - 491		Fine sand and clay	126	
491 - 560		Alternate layers of sand and rock	69	
560 - 790		Hard cemented gravel rock and sand	230	

Remarks: 21-inch hole to 530 feet
18-inch hole to 790 feet

SHEET _____ of _____ Sheets

2S/2W-24E2

SAN BERNARDINO VALLEY WATER CONSERVATION DISTRICT
10½ West Citrus Avenue - Redlands, California

WELL LOG

Well No. 35

Well Owner [redacted] WELL NO 1
Location apprx 2200 ft S. of North line of Sec 24

; ¼, ¼, Section 24, T 2S, R 2W

Drilled by TROWER & SON Date completed Oct 1959
Drilling method Rotary
Total depth Size of casing and depth 14-inch Gauge 3/16" (Double) (Single)
Type of well
Struck water at , SWL before perforating 120 after perforating (ft.)
Completion test data: SWL PWL Discharge Hours run
Surface elev. 2320 Source of information
Perforations

Depth	Elev. Bot. of Stratum	Material	Thickness	
0-3		Top Soil		
3-90		Red clay & Decomposed GRANITE		
90-134		Gravel & Sand		
134-178		Clay & Sand		
178-200		GRAVEL Rock & Sand		
200-210		SAND		
210-225		GRAVEL & SAND		
225-247		Clay		
247-282		GRAVEL		
282-310		Clay & SAND		
310-365		GRAVEL & SAND		
365-491		FINE SAND & Clay		
491-560		alternate layers of Sand & rock		
560-790		Hard cemented Gravel Rock & Sand		

Remarks:
21-inch hole to 530 feet
18-inch hole to 790

SHEET of Sheets

Well 103

*The free Adobe Reader may be used to view and complete this form. However, software must be purchased to complete, save, and reuse a saved form.

File Original with DWR

State of California

Well Completion Report

Refer to Instruction Pamphlet

No. e0106895

Page 1 of 1

Owner's Well Number MW-3

Date Work Began 11/17/2009 Date Work Ended 11/20/2009

Local Permit Agency County of San Bernardino Environmental Health

Permit Number 2009110688 Permit Date 11/10/09

DWR Use Only – Do Not Fill In

State Well Number/Site Number

Latitude N Longitude W

APN/TRS/Other

Geologic Log

Orientation ◉ Vertical ○ Horizontal ○ Angle Specify

Drilling Method Hollow Stem Auger Drilling Fluid Air

Depth from Surface Feet	to Feet	Description (Describe material, grain size, color, etc)
0	2	Asphalt on silty sand (fill)
2	4	Silty sand, brown
4	12	Sandy clay, fine, dark brown
12	40	Silty sand, fine to coarse, dark brown
40	50	Silt with sand, fine, gray brown
50	60	Sand, fine to coarse, dark gray
60	70	Gravelly sand, fine to coarse, dark gray

Total Depth of Boring 70 Feet

Total Depth of Completed Well 60 Feet

Well Owner

Name [redacted]

Mailing Address [redacted]

City Yucaipa State CA Zip 92399

Well Location

Address San Timoteo Canyon Road

City Redlands County San Bernardino

Latitude 34 Deg. 1 Min. 23 Sec. N Longitude 117 Deg. 11 Min. 48 Sec. W

Datum NAD83 Decimal Lat. 34.023 Decimal Long. 116.197

APN Book Page Parcel

Township 2S Range 3W Section 4

Location Sketch

(Sketch must be drawn by hand after form is printed.)

North



Illustrate or describe distance of well from roads, buildings, fences, rivers, etc. and attach a map. Use additional paper if necessary. **Please be accurate and complete.**

Activity

◉ New Well
○ Modification/Repair
○ Deepen
○ Other
○ Destroy
Describe procedures and materials under "GEOLOGIC LOG"

Planned Uses

○ Water Supply
☐ Domestic ☐ Public
☐ Irrigation ☐ Industrial
○ Cathodic Protection
○ Dewatering
○ Heat Exchange
○ Injection
◉ Monitoring
○ Remediation
○ Sparging
○ Test Well
○ Vapor Extraction
○ Other

Water Level and Yield of Completed Well

Depth to first water 19 (Feet below surface)

Depth to Static Water Level (Feet) Date Measured

Estimated Yield * (GPM) Test Type

Test Length (Hours) Total Drawdown (Feet)

*May not be representative of a well's long term yield.

Casings

Depth from Surface Feet	to Feet	Borehole Diameter (Inches)	Type	Material	Wall Thickness (Inches)	Outside Diameter (Inches)	Screen Type	Slot Size if Any (Inches)
0	45	10	Blank	PVC Sch. 40		4		
45	60	10	Screen	PVC Sch. 40		4	Milled Slots	0.020

Annular Material

Depth from Surface Feet	to Feet	Fill	Description
0	39	Cement	seal
39	42	Bentonite	seal
42	60	Filter Pack	sand

Attachments

☐ Geologic Log
☐ Well Construction Diagram
☐ Geophysical Log(s)
☐ Soil/Water Chemical Analyses
☐ Other

Attach additional information, if it exists.

Certification Statement

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief

Name Jay J. Martin for C.H.J., Incorporated, Vice President, CEG 1529
Person, Firm or Corporation

1355 E. Cooley Drive Colton CA 92324
Address City State Zip

Signed [signature] 3/4/2010 766402
C-57 Licensed Water Well Contractor Date Signed C-57 License Number

DWR 188 REV. 1/2006

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

MONITORING WELL NO. MW-3

Date Drilled: 11/18/09 Client: [redacted]

Equipment: B-61 Hollow-Stem Auger Driving Weight / Drop: 140 lbs./30 in.

Coordinates: 34.023°-116.197° Logged by: VJR Groundwater First Encountered (ft): 19.2

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	SAMPLE NO.	SAMPLES: DRIVE	SAMPLES: BULK	BLOWS/FOOT (Equiv. SPT)	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
		8" Asphalt Concrete, No Aggregate Base							
		(SM) Silty Sand, fine with medium, light brown	Fill	X		5 2 2			SPT
		(SM) Silty Sand, fine with clay, dark brown	Native						
5		(CL) Sandy Clay, fine, dark brown							
10				X		3 10 10			SPT
		(SM) Silty Sand, fine to coarse with gravel, dark brown							
15									
			Groundwater						
20		(SM) Silty Sand, fine to coarse with gravel, dark brown		X		4 7 12			SPT
25									
30				X		3 6 7			SPT

MONITORING_WELL 09631-8.GPJ CHJ.GDT 11/24/09

C.H.J.

WELLS - SAN TIMOTEO & LIVE OAK CANYONS
RIVERSIDE COUNTY, CALIFORNIA

Job No. 09631-8

Enclosure B-3a

MONITORING WELL NO. MW-3

Date Drilled: 11/18/09 Client: [redacted]

Equipment: B-61 Hollow-Stem Auger Driving Weight / Drop: 140 lbs./30 in.

Coordinates: 34.023°-116.197° Logged by: VJR Groundwater First Encountered (ft): 19.2

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	SAMPLE NO.	SAMPLES: DRIVE	SAMPLES: BULK	BLOWS/FOOT (Equiv. SPT)	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
40		(ML) Silt with Sand, fine, gray brown		X		3 4 7			SPT
45									
50		(SP-SM) Sand, fine to coarse with silt and gravel, dark gray		X		21 50/5"			SPT
55									
60		(SP-SM) Gravelly Sand, fine to coarse with silt, gravel, dark gray		X		24 38 50/5"			SPT
65									

MONITORING_WELL 09631-8.GPJ CHJ.GDT 11/24/09

C.H.J.

WELLS - SAN TIMOTEO & LIVE OAK CANYONS
RIVERSIDE COUNTY, CALIFORNIA

Job No. 09631-8

Enclosure B-3b

MONITORING WELL NO. MW-3

Date Drilled: 11/18/09 Client: [redacted]

Equipment: B-61 Hollow-Stem Auger Driving Weight / Drop: 140 lbs./30 in.

Coordinates: 34.023°-116.197° Logged by: VJR Groundwater First Encountered (ft): 19.2

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	SAMPLE NO.	SAMPLES DRIVE	SAMPLES BULK	BLOWS/FOOT (Equiv. SPT)	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
		(ML) Silt with sand, fine and clay, dark gray to red brown		X		15 16 24			SPT
		END OF BORING							
		BORING TERMINATED AT 70.0' - REDRILLED TO 60.0' FILL TO 2.0', SLIGHT CAVING GROUNDWATER AT 18.8'							
75									
80									
85									
90									
95									
100									

MONITORING_WELL 09631-8.GPJ CHJ.GDT 11/24/09

C.H.J.

WELLS - SAN TIMOTEO & LIVE OAK CANYONS
RIVERSIDE COUNTY, CALIFORNIA

Job No. 09631-8

Enclosure B-3c

MW 104

*The free Adobe Reader may be used to view and complete this form. However, software must be purchased to complete, save, and reuse a saved form.

File Original with DWR

State of California

Well Completion Report

Refer to Instruction Pamphlet

No. e0106893

Page 1 of 1

Owner's Well Number MW-2

Date Work Began 11/16/2009 Date Work Ended 11/20/2009

Local Permit Agency County of San Bernardino Environmental Health

Permit Number 2009110689 Permit Date 11/10/09

DWR Use Only – Do Not Fill In

State Well Number/Site Number

Latitude N Longitude W

APN/TRS/Other

Geologic Log

Orientation ◉ Vertical ○ Horizontal ○ Angle Specify

Drilling Method Hollow Stem Auger Drilling Fluid Air

Depth from Surface Feet	to Feet	Description Describe material, grain size, color, etc
0	3	Asphalt concrete on sand (fill)
3	20	Silty sand, fine to medium, brown
20	30	Silty sand,fine to coarse w/clay,dark brown
30	40	Clayey sand, fine w/medium and silt, yellow brown
40	50	Silty sand,fine w/medium & clay,brown
50	60	sand,fine to coarse w/silt, gray
60	71	Silty sand, fine w/medium & clay,brown

Total Depth of Boring 71 Feet

Total Depth of Completed Well 70 Feet

Well Owner

Name [redacted]

Mailing Address [redacted]

City Yucaipa State CA Zip 92399

Well Location

Address Alessandro Road

City Redlands County San Bernardino

Latitude 34 Deg. 0 Min. 51 Sec. N Longitude 117 Deg. 10 Min. 46 Sec. W

Datum NAD83 Decimal Lat. 34.014 Decimal Long. 117.179

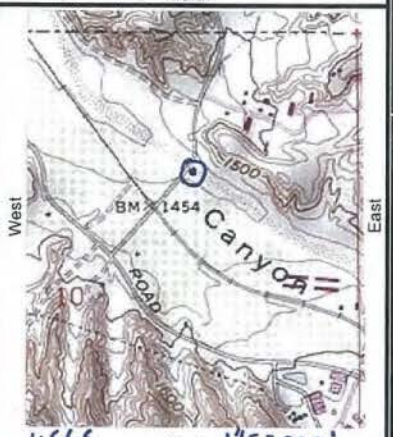
APN Book Page Parcel

Township 2S Range 3W Section 10

Location Sketch

(Sketch must be drawn by hand after form is printed.)

North



Illustrate or describe distance of well from roads, buildings, fences, rivers, etc. and attach a map. Use additional paper if necessary. Please be accurate and complete.

Activity

◉ New Well
○ Modification/Repair
○ Deepen
○ Other
○ Destroy
Describe procedures and materials under "GEOLOGIC LOG"

Planned Uses

○ Water Supply
☐ Domestic ☐ Public
☐ Irrigation ☐ Industrial
○ Cathodic Protection
○ Dewatering
○ Heat Exchange
○ Injection
◉ Monitoring
○ Remediation
○ Sparging
○ Test Well
○ Vapor Extraction
○ Other

Water Level and Yield of Completed Well

Depth to first water 17 (Feet below surface)

Depth to Static Water Level (Feet) Date Measured

Estimated Yield * (GPM) Test Type

Test Length (Hours) Total Drawdown (Feet)

*May not be representative of a well's long term yield.

Casings

Depth from Surface Feet	to Feet	Borehole Diameter (Inches)	Type	Material	Wall Thickness (Inches)	Outside Diameter (Inches)	Screen Type	Slot Size if Any (Inches)
0	55	10	Blank	PVC Sch. 40		4		
55	70	10	Screen	PVC Sch. 40		4	Milled Slots	0.020

Annular Material

Depth from Surface Feet	to Feet	Fill	Description
0	46	Cement	seal
46	49	Bentonite	seal
49	70	Filter Pack	sand

Attachments

☐ Geologic Log
☐ Well Construction Diagram
☐ Geophysical Log(s)
☐ Soil/Water Chemical Analyses
☐ Other

Attach additional information, if it exists.

Certification Statement

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief

Name Jay J. Martin for C.H.J., Incorporated, Vice President, CEG 1529 (Person, Firm or Corporation)

1355 E. Cooley Drive (Address) Colton (City) CA (State) 92324 (Zip)

Signed [signature] (C-57 Licensed Water Well Contractor) 3/4/2010 (Date Signed) 766402 (C-57 License Number)

DWR 188 REV. 1/2006

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

MONITORING WELL NO. MW-2

Date Drilled: 11/18/09 Client: [redacted]

Equipment: B-61 Hollow-Stem Auger Driving Weight / Drop: 140 lbs./30 in.

Coordinates: 34.014°-117.179° Logged by: VJR Groundwater First Encountered (ft): 16.5

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	SAMPLE NO.	SAMPLES: DRIVE	SAMPLES: BULK	BLOWS/FOOT (Equiv. SPT)	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
		7-1/2" Asphalt Concrete	Asphalt						
		(SP-SM) Sand, fine to medium with coarse, silt and gravel, brown	Fill	X		7 6 7			SPT
		(SM) Silty Sand, fine to medium, brown	Native						
5									
10				X		4 5 7			SPT
15			▼ Groundwater						
20		(SM) Silty Sand, fine to coarse with clay, dark brown		X		7 11 11			SPT
25									
30		(SC) Clayey Sand, fine with medium and silt, yellow brown		X		2 2 4			SPT

MONITORING_WELL 09631-8.GPJ CHJ.GDT 11/24/09

C.H.J.

WELLS - SAN TIMOTEO & LIVE OAK CANYONS
RIVERSIDE COUNTY, CALIFORNIA

Job No. 09631-8

Enclosure B-2a

MONITORING WELL NO. MW-2

Date Drilled: 11/18/09 Client: [redacted]

Equipment: B-61 Hollow-Stem Auger Driving Weight / Drop: 140 lbs./30 in.

Coordinates: 34.014°-117.179° Logged by: VJR Groundwater First Encountered (ft): 16.5

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	SAMPLE NO.	SAMPLES DRIVE	SAMPLES BULK	BLOWS/FOOT (Equiv. SPT)	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
40		(SM) Silty Sand, fine with medium and clay, brown		X		8 10 15			SPT
45									
50		(SP) Sand, fine to coarse with silt, gray		X		4 15 25			SPT
55									
60		(SM) Silty Sand, fine with medium and clay, brown		X		5 9 16			SPT
65									

MONITORING_WELL_09631-8.GPJ CHJ.GDT 11/24/09

C.H.J.

WELLS - SAN TIMOTEO & LIVE OAK CANYONS
RIVERSIDE COUNTY, CALIFORNIA

Job No. 09631-8

Enclosure B-2b

MONITORING WELL NO. MW-2

Date Drilled: 11/18/09 Client: [redacted]

Equipment: B-61 Hollow-Stem Auger Driving Weight / Drop: 140 lbs./30 in.

Coordinates: 34.014°-117.179° Logged by: VJR Groundwater First Encountered (ft): 16.5

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	SAMPLE NO.	SAMPLES: DRIVE	SAMPLES: BULK	BLOWS/FOOT (Equiv. SPT)	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
				X		30 50/5"			SPT
		END OF BORING	Refusal						
		REFUSAL AT 71.0', NO BEDROCK FILL TO 3.0', SLIGHT CAVING GROUNDWATER AT 16.5'							
75									
80									
85									
90									
95									
100									

MONITORING_WELL 09631-8.GPJ CHJ.GDT 11/24/09

C.H.J.

WELLS - SAN TIMOTEO & LIVE OAK CANYONS
RIVERSIDE COUNTY, CALIFORNIA

Job No. 09631-8

Enclosure B-2c

Well 105

*The free Adobe Reader may be used to view and complete this form. However, software must be purchased to complete, save, and reuse a saved form.

File Original with DWR

State of California

Well Completion Report

Refer to Instruction Pamphlet

No. e0107582

Page 1 of 1

Owner's Well Number MW-1

Date Work Began 11/18/2009 Date Work Ended 11/18/2009

Local Permit Agency Riverside County Department of Environmental Health

Permit Number WP 20440 Permit Date 11/10/09

DWR Use Only – Do Not Fill In

State Well Number/Site Number

N Latitude Longitude W

APN/TRS/Other

Geologic Log

Orientation ◉ Vertical ○ Horizontal ○ Angle Specify

Drilling Method Hollow Stem Auger Drilling Fluid Air

Depth from Surface Feet	to Feet	Description Describe material, grain size, color, etc
0	1	Asphalt concrete and aggregate on sand (fill)
1	10	Silty sand, fine with clay, brown
10	20	Sand,fine to medium w/coarse, brown
20	30	Silty sand, fine to medium w/clay, gray brown
30	40	Silty sand,fine to coarse w/gravel, brown
40	50	Sand,fine to medium w/coarse, silt & gravel,gray
50	72	Silty sand, fine to medium w/clay, gray brown

Total Depth of Boring 72 Feet

Total Depth of Completed Well 60 Feet

Well Owner

Name [redacted]

Mailing Address [redacted]

City Yucaipa State CA Zip 92399

Well Location

Address Live Oak Canyon Road

City Calimesa County Riverside

Latitude 34 Deg. 0 Min. 10 Sec. N Longitude 117 Deg. 9 Min. 52 Sec. W

Datum NAD83 Decimal Lat. 34.003 Decimal Long. 117.165

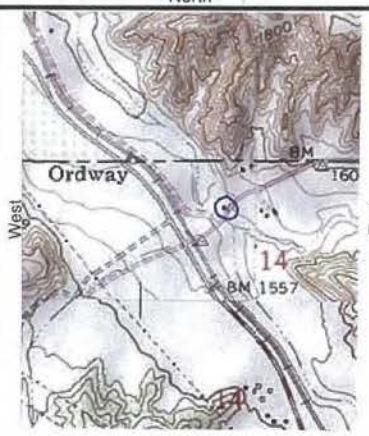
APN Book 473 Page 320 Parcel 012

Township 2S Range 3W Section 14

Location Sketch

(Sketch must be drawn by hand after form is printed.)

North



South

Illustrate or describe distance of well from roads, buildings, fences, rivers, etc. and attach a map. Use additional paper if necessary. **Please be accurate and complete.**

Activity

◉ New Well
○ Modification/Repair
○ Deepen
○ Other
○ Destroy
Describe procedures and materials under "GEOLOGIC LOG"

Planned Uses

○ Water Supply
☐ Domestic ☐ Public
☐ Irrigation ☐ Industrial
○ Cathodic Protection
○ Dewatering
○ Heat Exchange
○ Injection
◉ Monitoring
○ Remediation
○ Sparging
○ Test Well
○ Vapor Extraction
○ Other

Water Level and Yield of Completed Well

Depth to first water 19 (Feet below surface)

Depth to Static Water Level (Feet) Date Measured

Estimated Yield * (GPM) Test Type

Test Length (Hours) Total Drawdown (Feet)

*May not be representative of a well's long term yield.

Casings

Depth from Surface Feet	to Feet	Borehole Diameter (Inches)	Type	Material	Wall Thickness (Inches)	Outside Diameter (Inches)	Screen Type	Slot Size if Any (Inches)
0	45	10	Blank	PVC Sch. 40		4		
45	60	10	Screen	PVC Sch. 40		4	Milled Slots	0.020

Annular Material

Depth from Surface Feet	to Feet	Fill	Description
0	36	Cement	seal
36	39	Bentonite	seal
39	60	Filter Pack	sand

Attachments

☐ Geologic Log
☐ Well Construction Diagram
☐ Geophysical Log(s)
☐ Soil/Water Chemical Analyses
☐ Other

Attach additional information, if it exists.

Certification Statement

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief

Name Jay J. Martin for C.H.J., Incorporated, Vice President, CEG 1529
Person, Firm or Corporation

1355 E. Cooley Drive Colton CA 92324
Address City State Zip

Signed [signature] 3/18/2010 766402
C-57 Licensed Water Well Contractor Date Signed C-57 License Number

DWR 188 REV. 1/2006

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

Y VWD

MONITORING WELL NO. MW-1

Date Drilled: 11/18/09 Client: [redacted]

Equipment: B-61 Hollow-Stem Auger Driving Weight / Drop: 140 lbs./30 in.

Coordinates: 34.003°-117.164° Logged by: VJR Groundwater First Encountered (ft): 19.0

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	SAMPLE NO.	SAMPLES: DRIVE	SAMPLES: BULK	BLOWS/FOOT (Equiv. SPT)	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
0		5" Asphalt Concrete, 4" Aggregate Base	Asphalt						
		(SP-SM) Sand, fine with silt, gray brown	Base						
		(SM) Silty Sand, fine with clay, brown	Fill / Native	X		2 3 2			SPT
5									
10		(SP-SM) Sand, fine to medium with coarse, brown		X		4 6 7			SPT
15									
20			▼ Groundwater						
		(SM) Silty Sand, fine to medium with clay, gray brown		X		3 4 4			SPT
25									
30		(SM) Silty Sand, fine to coarse with gravel, brown		X		11 17 21			SPT

MONITORING_WELL_09631-8.GPJ CHJ.GDT 11/24/09

C.H.J.

WELLS - SAN TIMOTEO & LIVE OAK CANYONS
RIVERSIDE COUNTY, CALIFORNIA

Job No. 09631-8

Enclosure B-1a

MONITORING WELL NO. MW-1

Date Drilled: 11/18/09 Client: [redacted]

Equipment: B-61 Hollow-Stem Auger Driving Weight / Drop: 140 lbs./30 in.

Coordinates: 34.003°-117.164° Logged by: VJR Groundwater First Encountered (ft): 19.0

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	SAMPLE NO.	SAMPLES DRIVE	SAMPLES BULK	BLOWS/FOOT (Equiv. SPT)	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
40		(SP-SM) Sand, fine to medium with coarse, silt and gravel, gray		X		4 6 14			SPT
45									
50		(SM) Silty Sand, fine to medium with clay, gray brown		X		14 22 23			SPT
55									
60				X		9 17 30			SPT
65									

MONITORING_WELL 09631-8.GPJ CHJ.GDT 11/24/09

C.H.J.

WELLS - SAN TIMOTEO & LIVE OAK CANYONS
RIVERSIDE COUNTY, CALIFORNIA

Job No. 09631-8

Enclosure B-1b

MONITORING WELL NO. MW-1

Date Drilled: 11/18/09 Client: [redacted]

Equipment: B-61 Hollow-Stem Auger Driving Weight / Drop: 140 lbs./30 in.

Coordinates: 34.003°-117.164° Logged by: VJR Groundwater First Encountered (ft): 19.0

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	SAMPLE NO.	SAMPLES: DRIVE	SAMPLES: BULK	BLOWS/FOOT (Equiv. SPT)	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
				X		22 35 50			SPT
		END OF BORING	Refusal						
		REFUSAL AT 71.5', NO BEDROCK FILL TO 1.0', SLIGHT CAVING GROUNDWATER AT 19.0'							
75									
80									
85									
90									
95									
100									

MONITORING_WELL 09631-8.GPJ CHJ.GDT 11/24/09

C.H.J.

WELLS - SAN TIMOTEO & LIVE OAK CANYONS
RIVERSIDE COUNTY, CALIFORNIA

Job No. 09631-8

Enclosure B-1c

Appendix 3-A

Drilling Logs and Well Completion Reports

R E

FORM 115
INVESTIGATION

25/2W-13E1

DIVISION OF WATER RESOURCES
DEPARTMENT OF PUBLIC WORKS
STATE OF CALIFORNIA

SHEET 1

South Coastal Basin

NUMBER E-138d-

WELL LOG

LOCAL DESIGNATION

Owner #2
Hicks #Y-2
Loc. #18249 -

LOCATION 700' S. of Ave. L; 20' E. of W. line of Lot 225, Sub. 9, Yucaipa Valley, Yucaipa . Sec.13.

OWNER [redacted]

DATE COMPLETED 1913

DIAMETER OF CASING 16"

DRILLED BY W. D. Anderson

SOURCE OF INFORMATION P. E. Hicks

INSPECTED WHILE DRILLING SEE FILE NO.

SURFACE ELEVATION 2453. levels Hicks.

SKETCH

DEPTH	ELEVATION OF BOTTOM OF STRATUM	MATERIAL	THICKNESS FEET	% VOIDS	ABSOLUTE VOIDS FEET	TOTAL VOIDS FEET
0-95	2358	Packed clay	95			
190	2263	Cement gravel	95			
202	2251	Water gravel	12			
204	2249	Clay	2			
208	2245	Water gravel	4			
212	2241	Clay	4			
220	2233	Gravel	8			
226	2227	Clay	6			
230	2223	Gravel	4			
238	2215	Clay	8			
266	2187	Gravel	28			
277	2176	Clay	11			
313	2140	Gravel	36			
316	2137	Red clay	3			
330	2123	Cement gravel	14			
336	2117	Gravel	6			
338	2115	Clay	2			
346	2107	Gravel	8			
350	2103	Cement and quicksand	4			
362	2091	Red clay	12			
375	2078	Granite	13			
383	2070	Concrete	8			

Pumps 40" Drawdown 100'

MICROFILMED

FOR FIELD COPIES USE ALTERNATE LINES

LOG OBTAINED BY DATE

GSSI
11 342

SMWC well 4

-2S/2W-14R3

MAY 3 1 1968

ORIGINAL
File with DWR

WATER WELL DRILLERS REPORT

(Sections 7079, 7080, 7081, 7082, Water Code)

THE RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES

Do Not Fill In

No. 35123

State Well No. 2S/2W-14

Other Well No.

(1) OWNER:

Name [redacted]

Address Calimesa, California.

(2) LOCATION OF WELL:

County Riverside Owner's number, if any No. 4 well

Township, Range, and Section SE-1/4, Sec 14, Twp 2-S

Distance from cities, roads, railroads, etc. R-2-W, Riverside County

(3) TYPE OF WORK (check): Colmesa Well

New Well ☒ Deepening ☐ Reconditioning ☐ Destroying ☐

If destruction, describe material and procedure in Item 11.

(4) PROPOSED USE (check):

Domestic ☐ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☒

(5) EQUIPMENT:

Rotary ☒
Cable ☐
Other ☐

(6) CASING INSTALLED:

STEEL: OTHER:

SINGLE ☒ DOUBLE ☐

From ft.	To ft.	Diam.	Gage or Wall	Diameter of Bore	From ft.	To ft.
100	30" x 1/4" conductor casing					
76'	16" x 5/16" blank casing					
624'	- 16" x 5/16" perforated casing					

If gravel packed

Size of shoe or well ring:

Size of gravel:

Describe joint

(7) PERFORATIONS OR SCREEN:

Type of perforation or name of screen

From ft.	To ft.	Perf. per row	Rows per ft.	Size in. x in.
352	976	10 holes per		2-2/3"

(8) CONSTRUCTION:

Was a surface sanitary seal provided? Yes ☒ No ☐ To what depth 100 ft.

Were any strata sealed against pollution? Yes ☐ No ☐ If yes, note depth of strata

From ft. to ft.

From ft. to ft.

Method of sealing

(9) WATER LEVELS:

Depth at which water was first found, if known ft.

Standing level before perforating, if known ft.

Standing level after perforating and developing ft.

(10) WELL TESTS:

Pump test made? Yes ☒ No ☐ If yes, by whom? Roscoe Moss

Yield: 1720 gal./min. with 335 ft. drawdown after 49 hrs.

Temperature of water Was a chemical analysis made? Yes ☐ No ☐

Was electric log made of well? Yes ☐ No ☐ If yes, attach copy

(11) WELL LOG: 1 - 2247' RCAT

Total depth 1000 ft. Depth of completed well ft.

Formation: Describe by color, character, size of material, and structure

ft. to	ft.	
0	14'	Soil
14	69'	Gravel
69	73'	Clay and gravel
73	92'	Boulders
92	110'	Gravel and clay
110	124'	Sand and gravel
124	135'	Red sandy clay, some gravel
135	195'	Sand and gravel with cemented streaks
195	240'	Sandy clay, some gravel
240	250'	Red clay
250	280'	Hard sand and gravel, some clay
280	348'	Sand, gravel and rocks
348	358'	Sand, gravel and clay
358	365'	Brown clay
365	504'	Hard sand, gravel, boulders and clay
504	535'	Sand, gravel and clay
535	539'	Sand and gravel
539	549'	Sand and clay
549	580'	Sand and gravel
580	635'	Sand and gravel, some clay
635	694'	Sandy clay, some sand and gravel
694	700'	Hard rocks and sand
700	715'	Brown clay
715	758'	Sand and gravel
758	802'	Clay, some sand and gravel
802	808'	Hard rock and sand
808	835'	Brown clay and gravel
835	840'	Sand and gravel, some clay
840	856'	Sandy clay, some sand
856	934'	Sand, gravel and boulders
934	940'	Sand and gravel, some clay
940	982'	Sand gravel and boulders
982	1000'	Brown clay

Work started 3-22-68 Completed 4-19-68

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Roscoe Moss Company
(Person, firm, or corporation) (Typed or printed)

Address 4360 North Street
Los Angeles, California.

[SIGNED] [redacted]
(Well Driller)

License No. 624 C-57 Dated May 17, 1968 19

SKETCH LOCATION OF WELL ON REVERSE SIDE

SMWC well 4

MAY 31 1968

-2S/2W-14R3

ORIGINAL
File with DWR

WATER WELL DRILLERS REPORT
(Sections 7079, 7080, 7081, 7082, Water Code)

THE RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES

Do Not Fill In

No. 35123

State Well No. 2S/2W-14

Other Well No.

(1) OWNER:

Name [redacted]

Address Calimesa, California.

(2) LOCATION OF WELL:

County Riverside Owner's number, if any No. 4 well

Township, Range, and Section SE-1/4, Sec 14, Twp 2-S

Distance from cities, roads, railroads, etc. R-2-W, Riverside County

(3) TYPE OF WORK (check): Calimesa Blvd.

New Well ☒ Deepening ☐ Reconditioning ☐ Destroying ☐

If destruction, describe material and procedure in Item 11.

(4) PROPOSED USE (check):

Domestic ☐ Industrial ☐ Municipal ☐

Irrigation ☐ Test Well ☐ Other ☒

(5) EQUIPMENT:

Rotary ☒

Cable ☐

Other ☐

(6) CASING INSTALLED:

STEEL: OTHER:

SINGLE ☒ DOUBLE ☐

From ft.	To ft.	Diam.	Gage or Wall	Diameter of Bore	From ft.	To ft.
100	30" x 1/4" conductor casing					
76'	16" x 5/16" blank casing					
624'	- 16" x 5/16" perforated casing					

If gravel packed

Size of shoe or well ring: Size of gravel:

Describe joint

(7) PERFORATIONS OR SCREEN:

Type of perforation or name of screen

From ft.	To ft.	Perf. per row	Rows per ft.	Size in. x in.
352	976	10 holes per		2-2/3"

(8) CONSTRUCTION:

Was a surface sanitary seal provided? Yes ☒ No ☐ To what depth 100 ft.

Were any strata sealed against pollution? Yes ☐ No ☐ If yes, note depth of strata

From ft. to ft.

From ft. to ft.

Method of sealing

(9) WATER LEVELS:

Depth at which water was first found, if known ft.

Standing level before perforating, if known ft.

Standing level after perforating and developing ft.

(10) WELL TESTS:

Pump test made? Yes ☒ No ☐ If yes, by whom? Roscoe Moss

Yield: 1720 gal./min. with 335 ft. drawdown after 49 hrs.

Temperature of water Was a chemical analysis made? Yes ☐ No ☐

Was electric log made of well? Yes ☐ No ☐ If yes, attach copy

(11) WELL LOG: 2" Rept.

Total depth 1000 ft. Depth of completed well ft.

Formation: *Describe by color, character, size of material, and structure*

ft. to	ft.
0 to 14'	Soil
14 to 69'	Gravel
69 to 73'	Clay and gravel
73 to 92'	Boulders
92 to 110'	Gravel and clay
110 to 124'	Sand and gravel
124 to 135'	Red sandy clay, some gravel
135 to 195'	Sand and gravel with cemented streaks
195 to 240'	Sandy clay, some gravel
240 to 250'	Red clay
250 to 280'	Hard sand and gravel, some clay
280 to 348'	Sand, gravel and rocks
348 to 358'	Sand, gravel and clay
358 to 365'	Brown clay
365 to 504'	Hard sand, gravel, boulders and clay
504 to 535'	Sand, gravel and clay
535 to 539'	Sand and gravel
539 to 549'	Sand and clay
549 to 580'	Sand and gravel
580 to 635'	Sand and gravel, some clay
635 to 694'	Sandy clay, some sand and gravel
694 to 700'	Hard rocks and sand
700 to 715'	Brown clay
715 to 758'	Sand and gravel
758 to 802'	Clay, some sand and gravel
802 to 808'	Hard rock and sand
808 to 835'	Brown clay and gravel
835 to 840'	Sand and gravel, some clay
840 to 856'	Sandy clay, some sand
856 to 934'	Sand, gravel and boulders
934 to 940'	Sand and gravel, some clay
940 to 982'	Sand gravel and boulders
982 to 1000'	Brown clay

Work started 3-22-68 Completed 4-19-68

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Roscoe Moss Company
(Person, firm, or corporation) (Typed or printed)

Address 4360 North Street
Los Angeles, California.

[SIGNED] [redacted]
(Well Driller)

License No. 624 C-57 Dated May 17, 1968 19

7551
351

QUADRUPLICATE
For Local Requirements

Page ___ of ___

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet

No. 441027

DWR USE ONLY — DO NOT FILL IN
2S/2W-15-H
STATE WELL NO./STATION NO
LATITUDE LONGITUDE
APN/TRS/OTHER

Owner's Well No. Well #5
Date Work Began 09/11/96 Ended ___
Local Permit Agency County of Riverside Environmental Health
Permit No. 21447 Permit Date 09/11/96

GEOLOGIC LOG

ORIENTATION (✓) X VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)
DEPTH TO FIRST WATER ___ (Ft.) BELOW SURFACE

DEPTH FROM SURFACE Ft. to Ft.	DESCRIPTION *Describe material, grain size, color, etc*
	Install 14" liner to depth of 514', Gravel Pack Liner

RECEIVED
OCT 21 1996

TOTAL DEPTH OF BORING ___ (Feet)
TOTAL DEPTH OF COMPLETED WELL ___ (Feet)

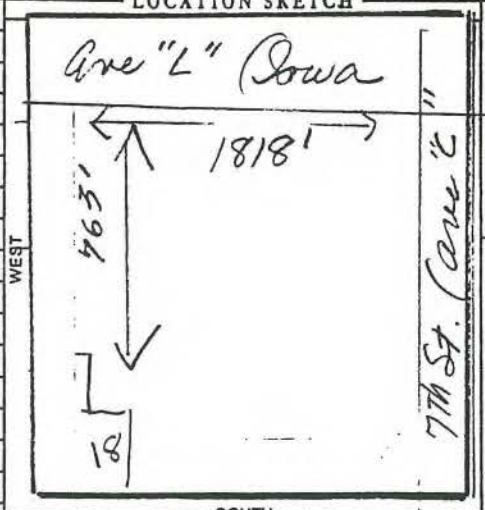
WELL OWNER

Name [redacted]
Mailing Address [redacted]
Calimesa CITY Ca. STATE 92320 ZIP

WELL LOCATION

Address S.of Ave. L, W of 7th St. Behind Mobil
City Home Park, - Calimesa
County Riverside
APN Book ___ Page ___ Parcel 411-200-018-9
Township 2S Range 2W Section 15
Latitude ___ DEG. ___ MIN. ___ SEC. NORTH Longitude ___ DEG. ___ MIN. ___ SEC. WEST

LOCATION SKETCH



SOUTH

Illustrate or Describe Distance of Well from Landmarks such as Roads, Buildings, Fences, Rivers, etc. PLEASE BE ACCURATE & COMPLETE.

ACTIVITY (✓)

___ NEW WELL
MODIFICATION/REPAIR
___ Deepen
X Other (Specify) Annular Seal
___ DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")

PLANNED USE(S) (✓)

___ MONITORING
WATER SUPPLY
___ Domestic
X Public
___ Irrigation
___ Industrial
___ "TEST WELL"
___ CATHODIC PROTECTION
___ OTHER (Specify)

DRILLING METHOD ___ FLUID ___

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH OF STATIC WATER LEVEL ___ (Ft.) & DATE MEASURED ___
ESTIMATED YIELD* ___ (GPM) & TEST TYPE ___
TEST LENGTH ___ (Hrs.) TOTAL DRAWDOWN ___ (Ft.)
* *May not be representative of a well's long-term yield.*

CASING(S)

DEPTH FROM SURFACE Ft. to Ft.	BORE-HOLE DIA. (Inches)	TYPE (✓) BLANK	SCREEN	CONDUCTOR	FILL PIPE	MATERIAL/GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)
0 : 50	22	X				Mild Steel	16"	1/4	
0 : 264		X				Mild Steel	14"	1/4	
264 : 514			X			Mild Steel	14"	1/4	.090

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft. to Ft.	TYPE CEMENT (✓)	BENTONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
0 : 50	X			3"

ATTACHMENTS (✓)

___ Geologic Log
___ Well Construction Diagram
___ Geophysical Log(s)
___ Soil/Water Chemical Analyses
___ Other ___

ATTACH ADDITIONAL INFORMATION IF IT EXISTS.

GSSI
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CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME Layne Western Division of Layne Christensen
(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

900 Nevada Street ADDRESS Redlands CITY Ca. STATE 92373 ZIP

Signed ___ (WELL DRILLER/AUTHORIZED REPRESENTATIVE) 10/18/96 DATE SIGNED 561 0011 C57 LICENSE NUMBER

DWR 188 (1-96) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

February 7, 1949

Log of Test-hole Drilled for the [redacted]
Driller: C. C. Scott
Box 26,
Beaumont, California

#5 #5

Total Depth of Test-Hole- 1, 119 Feet

FROM	TO	DESCRIPTION OF FORMATIONS
0	48	Gravel, and sand imbedded in Clay
48	70	Fine Gravel
70	120	Gravel, and Sand imbedded in Clay
120	132	Sandy Clay
132	170	Gravel imbedded in Clay
170	185	Shale
185	240	Clay
240	248	Fine Gravel
248	260	Clay
260	268	Rock
268	293	Gravel imbedded in Clay
293	305	Coarse Sand (Water)
305	370	Clay
370	375	Rock Ledge
375	400	Clay
400	406	Rock, and Decomposed Granite
406	415	Sand
415	450	Clay
450	480	Sandy Clay
480	490	Rock
490	538	Sandy Clay
538	555	Hard, solid Clay
555	578	Coarse sand (Water)
578	586	Rock
586	615	Clay
615	625	Sand
625	650	Sandy Clay
650	670	Very Hard Clay
670	683	Coarse Water Sand, and Gravel
683	693	Rock
693	730	Clay
730	740	S andy Clay
740	745	S and-Stone
745	750	Sand
750	756	Hard Clay
756	760	Sand
760	770	Sandy Clay
770	782	Clay
782	816	Very Hard Clay
816	830	Sand
830	850	Clay
850	855	Rock, and Sand-Stone

(Log continued on Page 2)

~~2S/2W-14B2~~ form exact log as 2S/2W-14E1

WATER WELL DRILLERS REPORT

DUPLICATE

Permit No. 292
T. 2 S., R. 2 E Sec. 1
State Well No.
R.C.F.C.D. No.

SMWC #5

M 14 E

OWNER:

Name [redacted]

Address

Calimesa, California

(2) LOCATION OF WELL:

County Riverside Owner's number, if any—

Portion of Blk. 251, Subd. 9, of Yucaipa Valley, Riverside Co.

(3) TYPE OF WORK (*check*):

New well ☐ Deepening ☐ Reconditioning ☐ Abandon ☐

If abandonment, describe material and procedure in Item 11.

(4) PROPOSED USE (*check*):

Domestic ☐ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

(5) EQUIPMENT:

Rotary ☐
Cable ☐
Dug Well ☐

(6) CASING INSTALLED:

SINGLE ☐ DOUBLE ☐

From	ft. to	ft.	Diam.	Gage or Wall
"	"	"	"	"
"	"	"	"	"
"	"	"	"	"
"	"	"	"	"
"	"	"	"	"

Type and size of shoe or well ring

Describe joint

If gravel packed

Diameter of Bore	from ft.	to ft.
	"	"
	"	"
	"	"
	"	"
	"	"

Size of gravel:

(7) PERFORATIONS:

Type of perforator used

Size of perforations in., length, by in.

From	ft. to	ft.	Perf. per row	Rows per ft.
"	"	"	" " "	" " "
"	"	"	" " "	" " "
"	"	"	" " "	" " "
"	"	"	" " "	" " "

(8) CONSTRUCTION:

Was a surface sanitary seal provided? ☐ Yes ☐ No To what depth ft.

Were any strata sealed against pollution? ☐ Yes ☐ No If yes, note depth of strata

From	ft. to	ft.
"	"	"

Method of Sealing

(9) WATER LEVELS:

Depth at which water was first found	230 ft.
ding level before perforating	230 ft.
ding level after perforating	180 ft.

(10) WELL TESTS:

Was a pump test made? ☐ Yes ☐ No If yes, by whom?

(11) WELL LOG:

Total depth 1,119 ft. Depth of completed well

Formations *Describe by color, character, size of material, and structure.*

0	ft. to 48	ft.	gravel & sand imbedded in
48	" 70	"	fine gravel
70	" 120	"	gravel & sand imbedded in
120	" 132	"	sandy clay
132	" 170	"	gravel imbedded in clay
170	" 185	"	shale
185	" 240	"	clay
240	" 248	"	fine gravel
248	" 260	"	clay
260	" 268	"	rock
268	" 293	"	gravel imbedded in clay
293	" 305	"	coarse sand (water)
305	" 370	"	clay
370	" 375	"	rock ledge
375	" 400	"	clay
400	" 406	"	rock & decomposed granite
406	" 415	"	sand
415	" 450	"	clay
450	" 480	"	sandy clay
480	" 490	"	rock
490	" 538	"	sandy clay
538	" 555	"	hard, solid clay
555	" 578	"	coarse sand (water)
578	" 586	"	rock
586	" 615	"	clay
615	" 625	"	sand
625	" 650	"	sandy clay
650	" 670	"	very hard clay
670	" 683	"	coarse water sand & gravel
683	" 693	"	rock
693	" 730	"	clay
730	" 740	"	sandy clay
740	" 745	"	sand-stone
745	" 750	"	sand
750	" 756	"	hard clay
756	" 760	"	sand
760	" 770	"	sandy clay
770	" 782	"	clay
782	" 816	"	very hard clay
816	" 830	"	sand
830	" 850	"	clay
850	" 855	"	rock and sandstone
	"	"	cont'd next page

Work started Jan. 6 1949 Completed Feb. 7 19

Driller

Name C. C. Scott

Address Box 26

Beaumont, California

1 of 2

2/5N/2W-14R2

WATER WELL DRILLERS REPORT

DUPLICATE

Permit No. 292 page 15A/14
T. 2 S., R. 2 W. Sec. 1
State Well No.
R.C.F.C.D. No.

2/14R

OWNER:

Name [redacted]

Address

Calimesa, California

(2) LOCATION OF WELL:

County Owner's number, if any—

Portion of Blk. 251, Subd. 9, of Yucaipa Valley, Riverside Co.

(3) TYPE OF WORK (*check*):

New well ☐ Deepening ☐ Reconditioning ☐ Abandon ☐

If abandonment, describe material and procedure in Item 11.

(4) PROPOSED USE (*check*):

Domestic ☐ Industrial ☐ Municipal ☐

Irrigation ☐ Test Well ☐ Other ☐

(5) EQUIPMENT:

Rotary ☐

Cable ☐

Dug Well ☐

(6) CASING INSTALLED:

SINGLE ☐ DOUBLE ☐

From	ft. to	ft.	Diam.	Gage or Wall
"	"	"	"	"
"	"	"	"	"
"	"	"	"	"
"	"	"	"	"
"	"	"	"	"

Type and size of shoe or well ring

Describe joint

If gravel packed

Diameter of Bore	from ft.	to ft.
"	"	"
"	"	"
"	"	"
"	"	"
"	"	"

Size of gravel:

(7) PERFORATIONS:

Type of perforator used

Size of perforations in., length, by in.

From	ft. to	ft.	Perf. per row	Rows per ft.
"	"	"	" " "	" " "
"	"	"	" " "	" " "
"	"	"	" " "	" " "
"	"	"	" " "	" " "

(8) CONSTRUCTION:

Was a surface sanitary seal provided? ☐ Yes ☐ No To what depth ft.

Were any strata sealed against pollution? ☐ Yes ☐ No If yes, note depth of strata

From	ft. to	ft.
"	"	"

Method of Sealing

(9) WATER LEVELS:

at which water was first found ft.

nding level before perforating ft.

evel after perforating ft.

(10) WELL TESTS:

Was a pump test made? ☐ Yes ☐ No If yes, by whom?

Yield: gal./min. with

(11) WELL LOG:

Total depth 1,119 ft. Depth of completed well

Formation: *Describe by color, character, size of material, and structure.*

855	ft. to 863	ft.	fine sand
863	" 890	"	clay
890	" 910	"	coarse sand (water)
910	" 970	"	sandy clay
970	" 978	"	hard clay
978	" 985	"	sandy clay
985	" 1,000	"	sand & fine gravel (water)
1,000	" 1,004	"	hard clay
1,004	" 1,016	"	hard clay
1,016	" 1,020	"	rock
1,020	" 1,050	"	clay
1,050	" 1,070	"	coarse sand (water)
1,070	" 1,085	"	clay
1,085	" 1,090	"	rock ledge
1,090	" 1,119	"	hard clay

NOTE: Water meas. at 410', level 230'
" " " " 650' " 230'
" " " " 1,119' " stood at abprox. 180', on Feb. 7, 1949

Work started Jan. 6 19 49 Completed Feb. 7 19 49

Driller

Name C. C. Scott

Address Box 26

Beaumont, California

Mail Two Copies to:
DEPARTMENT OF PUBLIC HEALTH
Court House
Riverside, California

WATER WELL DRILLERS REPORT

(County Ordinances No. 340 and 340A)
COUNTY OF RIVERSIDE
DEPARTMENT OF PUBLIC HEALTH

Do Not Fill In 431
State Well No.
Other Well No. 2S/4W-15A
Region

(1) OWNER:
Name [redacted]
Address P. O. Box 307
Calimesa, Calif.

(2) LOCATION OF WELL:
County Riverside Owner's number, if any—
NE 1/4 NE 1/4 Sec. 15 T 2-S
R 1-W., S.B.B. & M.

(3) TYPE OF WORK (*check*):
New well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in Item 11.

(4) PROPOSED USE (*check*):
Domestic ☒ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

(5) EQUIPMENT:
Rotary ☒
Cable ☐
Dug Well ☐

(6) CASING INSTALLED:
SINGLE ☒ DOUBLE ☐

From ft.	to ft.	Diam.	Gage or Wall
0	800	16	1/4

If gravel packed

Diameter of Bore	from ft.	to ft.
22	0	800

Type and size of shoe or well ring None
Size of gravel: 1/2
Describe joint Butt weld

(7) PERFORATIONS:
Type of perforator used Tearch
Size of perforations 4 1/2 in., length, by 3/16 in.

From ft.	to ft.	Perf. per row	Rows per ft.
242	800	6	1

(8) CONSTRUCTION:
Was a surface sanitary seal provided? ☒ Yes ☐ No To what depth 50 ft.
Were any strata sealed against pollution? ☐ Yes ☐ No If yes, note depth of strata

From ft.	to ft.

Method of Sealing Cement

(9) WATER LEVELS:
Depth at which water was first found 242 ft.
Static level before perforating 242 ft.
Standing level after perforating 242 ft.

(10) WELL TESTS:
Was a pump test made? ☐ Yes ☐ No If yes, by whom?
Yield: gal./min. with ft. draw down after hrs.

(11) WELL LOG:
Total depth 1200 ft. Depth of completed well 800 ft.
Formation: *Describe by color, character, size of material, and structure.*

ft. to ft.	
0 – 8	Brown Clay.
8 – 11	light Tan Clay.
11 – 94	Brown clay.
94 – 262	Sand, Gravel and Rock.
262 – 311	Sand with some clay.
311 – 400	Decomposed granite.
400 – 472	Hard decomposed.
472 – 500	Sand course.
500 – 528	Sand and clay.
528 – 578	Sand course.
578 – 584	Rock and gravel.
584 – 675	Sand and gravel.
675 – 691	Gravel and D. G.
691 – 705	Sandy clay.
705 – 980	Cemented rock and gravel
980 – 1004	Very hard D. G.
1004 – 1202	Granite Niece.

Work started 19 , Completed Nov. 8 19 62

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
NAME R.L. Trower
(Person, firm, or corporation) (*Typed or printed*)
Address 445 E. Wabash
San Bernarding, Calif
[SIGNED] Robert L. Trower

DUPLICATE
File Original, Duplicate and Triplicate with the
REGIONAL WATER POLLUTION
CONTROL BOARD No.____
(Insert appropriate number)

WATER WELL DRILLERS REPORT

(Sections 7076, 7077, 7078, Water Code)

STATE OF CALIFORNIA

Do Not Fill In
No. 54073
State Well No.____
Other Well No.____

(1) OWNER:

Name [redacted]
Address [redacted]
Calimesa, Calif.

(2) LOCATION OF WELL:

County Riverside Owner's number, if any--
R. F. D. or Street No.
NE. 1/4 NE. 1/4 Sec. 15 T 2-S
R. 1-W., S. B. B. &M.

(3) TYPE OF WORK (check):

New well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in Item 11.

(4) PROPOSED USE (check):

Domestic ☒ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

(5) EQUIPMENT:

Rotary ☒
Cable ☐
Dug Well ☐

(6) CASING INSTALLED:

SINGLE ☒ DOUBLE ☐

From ft.	to ft.	Diam.	Gage or Wall
0	800	16	1/4

Type and size of shoe or well ring none
Describe joint Butt weld

If gravel packed

Diameter of Bore	from ft.	to ft.
22	0	800

Size of gravel: 1/2 in.

(7) PERFORATIONS:

Type of perforator used Torach
Size of perforations 4 1/2 in., length, by 3/16 in.

From ft.	to ft.	Perf. per row	Rows per ft.
242	800	6	1

(8) CONSTRUCTION:

Was a surface sanitary seal provided? ☒ Yes ☐ No To what depth 50 ft.
Were any strata sealed against pollution? ☐ Yes ☒ No If yes, note depth of strata

From ft.	to ft.

Method of Sealing Cement

(9) WATER LEVELS:

Depth at which water was first found 242 ft.
Standing level before perforating 242 ft.
Standing level after perforating 242 ft.

(10) WELL TESTS:

Was a pump test made? ☐ Yes ☐ No If yes, by whom?
Yield: gal./min. with ft. draw down after hrs.
Temperature of water Was a chemical analysis made? ☐ Yes ☐ No
Was electric log made of well? ☐ Yes ☐ No

(11) WELL LOG:

Total depth 1200 ft. Depth of completed well 800 ft.
Formation: *Describe by color, character, size of material, and structure.*

ft. to ft.	
0 – 8	Brown Clay.
8 – 11	Light tan clay.
11 – 94	Brown clay.
94 – 262	Sand, gravel and rock.
262 – 311	Sand with some clay.
311 – 400	Decomposed granite.
400 – 472	Hard decomposed granite
472 – 500	Course sand.
500 – 528	Sand and clay
528 – 578	Course sand.
578 – 584	Rock and gravel.
584 – 675	Sand and gravel.
675 – 691	D.G. and gravel.
691 – 705	Sandy clay.
705 – 980	Cemented rock and gravel
980 – 1004	Very hard DIG!
1004 – 1200	Granite niece.

Work started 19 . Completed Nov. 8 1962

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME R. L. Trower
(Person, firm, or corporation) (Typed or printed)
Address 445 E. Wabash
San Bernardino, Calif.
[SIGNED] Robert L Trower
Well Driller
License No. 189826 Dated Nov. 8 1962

87025 6-57 50M QUIN △ SPO

DWR 188 (REV. 3-54)

DUPLICATE
File Original, Duplicate and Triplicate with the
REGIONAL WATER POLLUTION
CONTROL BOARD No.____
(Insert appropriate number)

WATER WELL DRILLERS REPORT

(Sections 7076, 7077, 7078, Water Code)

STATE OF CALIFORNIA

Do Not Fill In
No. 54073

State Well No.____

Other Well No.____

(1) OWNER:

Name [redacted]

Address [redacted]

Calimesa, Calif.

(2) LOCATION OF WELL:

County Riverside Owner's number, if any--

R. F. D. or Street No.

NE. 1/4 NE. 1/4 Sec. 15 T 2-S
R. 1-W., S. B. B. &M.

(3) TYPE OF WORK (*check*):

New well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐

If abandonment, describe material and procedure in Item 11.

(4) PROPOSED USE (*check*):

Domestic ☒ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

(5) EQUIPMENT:

Rotary ☒
Cable ☐
Dug Well ☐

(6) CASING INSTALLED:

SINGLE ☒ DOUBLE ☐

From ft.	to ft.	Diam.	Gage or Wall
0	800	16 1/4	

Type and size of shoe or well ring none

Describe joint Butt weld

If gravel packed

Diameter of Bore	from ft.	to ft.
22	0	800

Size of gravel: 1/2 in.

(7) PERFORATIONS:

Type of perforator used Torach

Size of perforations 4 1/2 in., length, by 3/16 in.

From ft.	to ft.	Perf. per row	Rows per ft.
242	800	6	1

(8) CONSTRUCTION:

Was a surface sanitary seal provided? ☒ Yes ☐ No To what depth 50 ft.

Were any strata sealed against pollution? ☐ Yes ☒ No If yes, note depth of strata

From ft. to ft.

Method of Sealing Cement

(9) WATER LEVELS:

Depth at which water was first found 242 ft.

Standing level before perforating 242 ft.

Standing level after perforating 242 ft.

(10) WELL TESTS:

Was a pump test made? ☐ Yes ☐ No If yes, by whom?

Yield: gal./min. with ft. draw down after hrs.

Temperature of water Was a chemical analysis made? ☐ Yes ☐ No

Was electric log made of well? ☐ Yes ☐ No

(11) WELL LOG:

Total depth 1200 ft. Depth of completed well 800 ft.

Formation: *Describe by color, character, size of material, and structure.*

ft. to ft.	Formation
0 – 8	Brown Clay.
8 – 11	Light tan clay.
11 – 94	Brown clay.
94 – 262	Sand, gravel and rock.
262 – 311	Sand with some clay.
311 – 400	Decomposed granite.
400 – 472	Hard decomposed granite
472 – 500	Course sand.
500 – 528	Sand and clay
528 – 578	Course sand.
578 – 584	Rock and gravel.
584 – 675	Sand and gravel.
675 – 691	D.G. and gravel.
691 – 705	Sandy clay.
705 – 980	Cemented rock and gravel
980 – 1004	Very hard DIG!
1004 – 1200	Granite niece.

Work started 19 . Completed Nov. 8 1962

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME R. L. Trower
(Person, firm, or corporation) (Typed or printed)

Address 445 E. Wabash
San Bernardino, Calif.

[SIGNED] Robert L Trower
Well Driller

License No. 189826 Dated Nov. 8 1962

87025 6-57 50M QUIN △ SPO

DWR 188 (REV. 3-54)

QUADRUPLICATE
RETAIN THIS COPY

WATER WELL DRILLERS REPORT

(Sections 7076, 7077, 7078, Water Code)

STATE OF CALIFORNIA

#9

1S/2W 15A03 SWC

Do Not Fill In
No 54055
State Well No.
Other Well No.

) OWNER:

ame [redacted]
Address

(2) LOCATION OF WELL:

County Riverside Owner's number, if any #9
R. F. D. or Street No.

(3) TYPE OF WORK (check):

New well ☐ Deepening ☒ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in Item 11.

(4) PROPOSED USE (check):

Domestic ☐ Industrial ☐ Municipal ☒
Irrigation ☐ Test Well ☐ Other ☐

(5) EQUIPMENT:

Rotary ☒
Cable ☐
Dug Well ☐

(6) CASING INSTALLED:

SINGLE ☒ DOUBLE ☐

From ft.	to ft.	Diam.	Gage Will
0	985	16	1/4

Type and size of shoe or well ring none
Describe joint butt weld

If gravel packed

Diameter of Bore	from ft.	to ft.
22	0	985
12	985	1400

Size of gravel: 3/8 pea

(7) PERFORATIONS:

Type of perforator used milling blade
Size of perforations 5/16 in., length, by 3 1/4 in.

From ft.	to ft.		Perf. per row	Rows per ft.
250	760	4	8	
800	985	4	8	

(8) CONSTRUCTION:

Was a surface sanitary seal provided? ☒ Yes ☐ No To what depth 65 ft.
Were any strata sealed against pollution? ☐ Yes ☐ No If yes, note depth of strata

From ft.	to ft.

Method of Sealing 65 ft. of 22in. pipe cemented

(9) WATER LEVELS:

Depth at which water was first found 256 ft.
Standing level before perforating 256 ft.
Standing level after perforating 256 ft.

J) WELL TESTS:

Was a pump test made? ☐ Yes ☐ No If yes, by whom?
Yield: gal./min. with ft. draw down after hrs.
Temperature of water Was a chemical analysis made? ☐ Yes ☐ No
Was electric log made of well? ☐ Yes ☐ No

GKI 3C2

(11) WELL LOG:

Total depth 1400 ft. Depth of completed well 985 ft.
Formation: *Describe by color, character, size of material, and structure.*

ft. to	ft.	
		Top: 1873
		2½ bot: 1672
538	689	packed sand, gravel and rock.
689	745	redish brown clay & sand
745	746	rock.
746	759	sand and rock.
759	820	sandy clay.
820	1005	sand, gravel and rock.
1005	1400	blue clay and gray sand.

Work started 19 Completed JAN 20 19 65

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME R. L. TROWER
(Person, firm or corporation) (Typed or printed)
Address 445 E. Wabash
SAN BERNARDINO, Calif
[SIGNED] Robert L Trower
(Well Driller)
License No. 189826 Dated Jan 26, 19 65

57025 6-57 50M QUIN △ SPO

PWS 188 (REV. 3-54)

QUADRUPLICATE
RETAIN THIS COPY

#9

WATER WELL DRILLERS REPORT

(Sections 7076, 7077, 7078, Water Code)

STATE OF CALIFORNIA

Do Not Fill In
No. 54055
State Well No.
Other Well No.

(1) OWNER:
Name [redacted]
Address

(2) LOCATION OF WELL:
County Riverside Owner's number, if any #9
R. F. D. or Street No.

(3) TYPE OF WORK (*check*):
New well ☐ Deepening ☒ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in Item 11.

(4) PROPOSED USE (*check*):
Domestic ☐ Industrial ☐ Municipal ☒
Irrigation ☐ Test Well ☐ Other ☐

(5) EQUIPMENT:
Rotary ☒
Cable ☐
Dug Well ☐

(6) CASING INSTALLED:
SINGLE ☒ DOUBLE ☐

From ft.	to ft.	Diam.	Gage or Wall
0	985	16	1/4

If gravel packed

Diameter of Bore	from ft.	to ft.
22	0	985
12	985	1400

Type and size of shoe or well ring none
Size of gravel: 3/8 pea
Describe joint butt weld

(7) PERFORATIONS:
Type of perforator used milling blade
Size of perforations 5/16 in., length, by 3 1/4 in.

From ft.	to ft.		Perf. per row	Rows per ft.
250	760	4	8	
800	985	4	8	

(8) CONSTRUCTION:
Was a surface sanitary seal provided? ☒ Yes ☐ No To what depth 65 ft.
Were any strata sealed against pollution? ☐ Yes ☐ No If yes, note depth of strata

From ft.	to ft.

Method of Sealing 65 ft. of 22in. pipe cemented

(9) WATER LEVELS:
Depth at which water was first found 256 ft.
Standing level before perforating 256 ft.
Standing level after perforating 256 ft.

(10) WELL TESTS:
Was a pump test made? ☐ Yes ☐ No If yes, by whom?
Yield: gal./min. with ft. draw down after hrs.
Temperature of water Was a chemical analysis made? ☐ Yes ☐ No
Was electric log made of well? ☐ Yes ☐ No

(11) WELL LOG:
Total depth 1400 ft. Depth of completed well 985 ft.
Formation: *Describe by color, character, size of material, and structure.*

ft. to	ft.	
538	689	packed sand, gravel and gravel rock.
689	745	redish brown clay & sand
745	746	rock.
746	759	sand and rock.
759	820	sandy clay.
820	1005	sand, gravel and rock.
1005	1400	blue clay and gray sand.

Work started 19 Completed JAN 20 19 65

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME R. L. TROWER (Person, firm, or corporation) (Typed or printed)
Address 445 E. WABASH
SAN BERNARDINO, CALIF
[SIGNED] Robert L Trower (Well Driller)
License No. 189826 Dated Jan 26, 19 65

57028 6-57 50M QUIN △ SPO DWR 188 (REV. 3-54)

SMWC well 11

FORM 115

INVESTIGATION

South Coastal Basin

DIVISION OF WATER RESOURCES
DEPARTMENT OF PUBLIC WORKS
STATE OF CALIFORNIA

25/2 W - 14C1

SHEET

NUMBER E-1364

WELL LOG

LOCAL DESIGNATION Owner #
Marliave Red. #51
Hicks Y-11

LOCATION 10' S. of County Line Road, 150' W. of State Highway, Lot 209, Sub. 9. Yucaipa.

~~Loc. #1823C~~

OWNER [redacted]

DATE COMPLETED ~~-16-~~ About 1922

DIAMETER OF CASING 16"

DRILLED BY Henry E. Gansner

SOURCE OF INFORMATION P. E. Hicks

INSPECTED WHILE DRILLING SEE FILE NO.

SURFACE ELEVATION

SKETCH

DEPTH	ELEVATION OF BOTTOM OF STRATUM	MATERIAL	THICKNESS FEET	% VOIDS	ABSOLUTE VOIDS FEET	TOTAL VOIDS FEET
0-135		Clay and some gravel	135			
140		Sand	5			
190		Clay	50			
208		Sand and clay	18			
894		Sand and gravel, greater part cemented.	86			
336		Gravel, some clay				
360		Clay and gravel	24			
369		Clay	9			
430		Hard red clay	61			
431		Clay, little gravel	1			
440		Soft sandy clay	9			
443		Clay	3			
		Perf 205-363				
		Pumps 150" - drawdown [illegible]				

FOR FIELD COPIES USE ALTERNATE LINES

LOG OBTAINED BY DATE

80612 6 31 15M CALIFORNIA STATE PRINTING OFFICE

DUPLICATE
Owner's Copy

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
WATER WELL DRILLERS REPORT

Do not fill in
No. 161398

Notice of Intent No.
Local Permit No. or Date
State Well No.
Other Well No.

(1) OWNER: Name [redacted]
Address [redacted]
City Calimesa, CA Zip 92320

(2) LOCATION OF WELL (See instructions):
County San Bernardino Owner's Well Number 28
Well address if different from above
Township 2S Range 2W Section 11
Distance from cities, roads, railroads, fences, etc. Calimesa
500' East of County Line Rd.
200' South of "H" St.

PER BULLETIN
74
WATER WELL STANDARDS

WELL LOCATION SKETCH

(3) TYPE OF WORK:
New Well [X] Deepening [ ]
Reconstruction [ ]
Reconditioning [ ]
Horizontal Well [ ]
Destruction [ ] (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:
Domestic [ ]
Irrigation [ ]
Industrial [ ]
Test Well [ ]
Stock [ ]
Municipal [X]
Other [ ]

(5) EQUIPMENT:
Rotary [X] Reverse [ ]
Cable [ ] Air [ ]
Other [ ] Bucket [ ]

(6) GRAVEL PACK:
Yes [X] No [ ] Size #5 Gravel
Diameter of bore 24"
Packed from 50' to 770 ft.

(7) CASING INSTALLED:
Steel [X] Plastic [ ] Concrete [ ]

(8) PERFORATIONS:
Type of perforation or size of screen R/M Hirizontal Louvre

From ft.	To ft.	Dia. in.	Gage or Wall	From ft.	To ft.	Slot size
0	770	5/16	5/16	250	770	3/32x2½"

(9) WELL SEAL:
Was surface sanitary seal provided? Yes [X] No [ ] If yes, to depth 50 ft.
Were strata sealed against pollution? Yes [ ] No [ ] Interval ft.
Method of sealing Cement in place

(10) WATER LEVELS:
Depth of first water, if known ft.
Standing level after well completion 183 ft.

(11) WELL TESTS:
Was well test made? Yes [X] No [ ] If yes, by whom? McCalla Bros.
Type of test Pump [X] Bailer [ ] Air lift [ ]
Depth to water at start of test ft. At end of test ft
Charge 2400 gal/min after 26½ hours Water temperature
Chemical analysis made? Yes [ ] No [X] If yes, by whom?
Was electric log made? Yes [X] No [ ] If yes, attach copy to this report N.A.

(12) WELL LOG: Total depth 1000 ft. Depth of completed well 770 ft.

from ft.	to ft.	Formation (Describe by color, character, size or material)
0	16	Top Soil, Clay, Rock & Sand
16	41	Clay, Rock & Gravel
41	103	Samll Gravel & Sand
103	214	Spotted Rock, Sand & Gravel
214	260	Granite Formation, firm
260	327	Small Gravel, Sand & Rock
327	390	Small Gravel, tight
390	506	Gravel
506	540	Gravel & Small Boulders
540	556	Red Clay
556	587	Gravel, w/Clay Streaks
587	611	Gravel & Granite, tight spots
611	620	Sandy Clay, tight
620	637	Sandy Clay, Gravel Streaks
637	744	Gravel & Small Rocks
744	762	Small Gravel, Sandy Clay
762	770	Gravel
770	802	Sandy Clay
802	808	Gravel & Rock
808	865	Sandy Clay
865	952	Gravel w/Clay Streaks
952	1000	Sand & Gravel

Work started 11-20 19 85 Completed 1-9 19 86

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
SIGNED (Well Driller)
NAME McCalla Bros. (Person, firm, or corporation) (Typed or printed)
Address 3132 W. 17th St.
City Santa Ana, CA Zip 92703
License No. 196824 Date of this report 1-27-86

DWR 188 (REV. 7-76) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

FORM 115

INVESTIGATION

South Coastal Basin

DIVISION OF WATER RESOURCES
DEPARTMENT OF PUBLIC WORKS
STATE OF CALIFORNIA

25/2W-14B01 SHEET 1

NUMBER E-136h

WELL LOG

LOCAL DESIGNATION Owner #14
Marliave Red. #53
Hicks Y-14

LOCATION 50' S. of County Line Road, 700' E. of State Highway, Lot 205, Sub. 9, Yucaipa.

Loc. #18239-

OWNER [redacted]

DATE COMPLETED About 1927

DIAMETER OF CASING 16"

DRILLED BY Clark McEuen

SOURCE OF INFORMATION P.E.Hicks

INSPECTED WHILE DRILLING SEE FILE NO.

SURFACE ELEVATION

SKETCH

DEPTH	ELEVATION OF BOTTOM OF STRATUM	MATERIAL	THICKNESS FEET	% VOIDS	ABSOLUTE VOIDS FEET	TOTAL VOIDS FEET
0-130		Clay	130			
150		Tight gravel	20			
160		Clay	15			
175		Tight gravel	15			
210		Coarse gravel, loose	35			
212		Red coarse sand	2			
250		Coarse gray gravel	38			
265		Clay and gravel, hard	15			
310		Coarse gravel, good	45			
317		Sand and clay	7			
325		All clay	8			
348		Wash gravel, coarse	23			
351		Clay	3			
353		Fine sand	2			
395		Clay	42			
		Pumps 10(" Drawdown 100'				

MICROFILMED

FOR FIELD COPIES USE ALTERNATE LINES

LOG OBTAINED BY DATE

66512 6 31 15M CALIFORNIA STATE PRINTING OFFICE

6SST 344 6

FORM 115
INVESTIGATION

2-2-14E01

DIVISION OF WATER RESOURCES
DEPARTMENT OF PUBLIC WORKS
STATE OF CALIFORNIA

2S/2W-14E01

SHEET 1

NUMBER E-136K

WELL LOG

LOCAL DESIGNATION

LOCATION E. side of 7th St. extended S. of N. of Ave. L, 50 south of county line and 100 feet west of Highway 99 14' E. of acc. # 18239 L

Loc. # 18239 C

OWNER [redacted]

DATE COMPLETED drilled 1920

DIAMETER OF CASING

DRILLED BY Ganzer

SOURCE OF INFORMATION San Bernardino Valley Water Conservation District

INSPECTED WHILE DRILLING SEE FILE NO.

SURFACE ELEVATION 2370.0

SKETCH

DEPTH	ELEVATION OF BOTTOM OF STRATUM	MATERIAL	THICKNESS FEET	% VOIDS	ABSOLUTE VOIDS FEET	TOTAL VOIDS FEET
0 - 130		clay				
130 - 135		sand				
135 - 170		clay				
170 - 185		sand and gravel				
185 - 195		clay and gravel				
195 - 200		gravel				
235						

FOR FIELD COPIES USE ALTERNATE LINES

MICROFILMED

LOG OBTAINED BY DATE

GSSI 346

PACIFIC SURVEYS

ELECTRIC LOG
GAMMA-RAY

Job No. 16423

File No.

Company [redacted]

Well CAL MESA WATER 7TH ST. WELL

Field YUCAIPA

County SAN BERNARDINO State CA

Location:

EAST END OF 7TH ST
GPS: N34o 00.769' W117o 04.032'

Sec. Twp. Rge.

Other Services:

SONIV/VDL

Permanent Datum	G.L.	Elevation above perm. datum	Elevation
Log Measured From	G.L.	0'	K.B.
Drilling Measured From	G.L.		D.F.
			G.L.

Date	02-27-2012
Run Number	ONE
Depth Driller	913'
Depth Logger	912'
Bottom Logged Interval	910'
Top Log Interval	50'
Casing Driller	30" @ 50'
Casing Logger	50'
Bit Size	17.5"
Type Fluid in Hole	WATER
Density / Viscosity	N/A
pH / Fluid Loss	N/A
Source of Sample	PIT
Rm @ Meas. Temp	14.2 @ 77F
Rmf @ Meas. Temp	14.2 @ 77F
Rmc @ Meas. Temp	N/A
Source of Rmf / Rmc	MEAS
Rm @ BHT	N/A
Time Circulation Stopped	3 HRS
Time Logger on Bottom	02:10
Max. Recorded Temperature	N/A
Equipment Number	PS-5
Location	L.A.
Recorded By	RIDDER
Witnessed By	--

<<< Fold Here >>>

All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, damages, or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to our general terms and conditions set out in our current Price Schedule.

Comments

Calibration Report

Database File: 16423.db
Dataset Pathname: Elog
Dataset Creation: Mon Feb 27 02:06:10 2012 by Log Open-Cased 100827

Serial:	D1
Model:	DTQ
Shop Calibration Performed:	Fri Sep 02 10:21:35 2011
Before Survey Verification Performed:	Wed May 18 15:44:28 2011
After Survey Verification Performed:	Wed May 18 15:45:08 2011

Shop Calibration

	Readings Zero	Readings Cal		References Zero	References Cal		Results Gain	Results Offset
Short	8.723	99.406		10.200	102.200	Ohm-m	1.015	1.350
Long	7.680	96.048		10.200	102.200	Ohm-m	1.041	-17.600
IEE	52.920	3270.320	counts	0.058	3.579	A		
VSN	49.080	5373.320	counts	0.936	102.490	V		
VLN	204.820	45711.480	counts	3.907	871.891	V		

Before Survey Verification

	Readings Zero	Readings Cal		References Zero	References Cal		Results Gain	Results Offset
Short	80.215	146.194		82.548	146.243	Ohm-m	0.965	5.112
Long	1342.350	4974.190		4976.440	4976.440	Ohm-m	0.991	47.934
IEE	54.260	3251.500	counts	0.059	3.558	A		
VSN	48.900	5340.600	counts	0.933	101.865	V		
VLN	204.580	45427.860	counts	3.902	866.481	V		

After Survey Verification

	Readings Zero	Readings Cal		References Zero	References Cal		Results Gain	Results Offset
Short	79.445	146.186		80.215	146.194	Ohm-m	0.989	1.677
Long	1341.850	4973.840		4974.190	4974.190	Ohm-m	1.000	0.554
IEE	54.360	3249.300	counts	0.059	3.556	A		
VSN	48.520	5336.700	counts	0.925	101.791	V		
VLN	204.880	45393.900	counts	3.908	865.833	V		

After Survey Verification compared to Before Survey Calibration

	Zero Before	Zero After		Cal Before	Cal After	
Short	82.548	80.215	Ohm-m	146.243	146.194	Ohm-m
Long	1377.960	1342.350	Ohm-m	4976.440	4974.190	Ohm-m

Gamma Ray Calibration Report

Serial Number:	D4	
Tool Model:	ELOG	
Performed:	Sat Apr 09 12:21:07 2011	
Calibrator Value:	162.0	GAPI
Background Reading:	212.4	cps
	707.5	cps

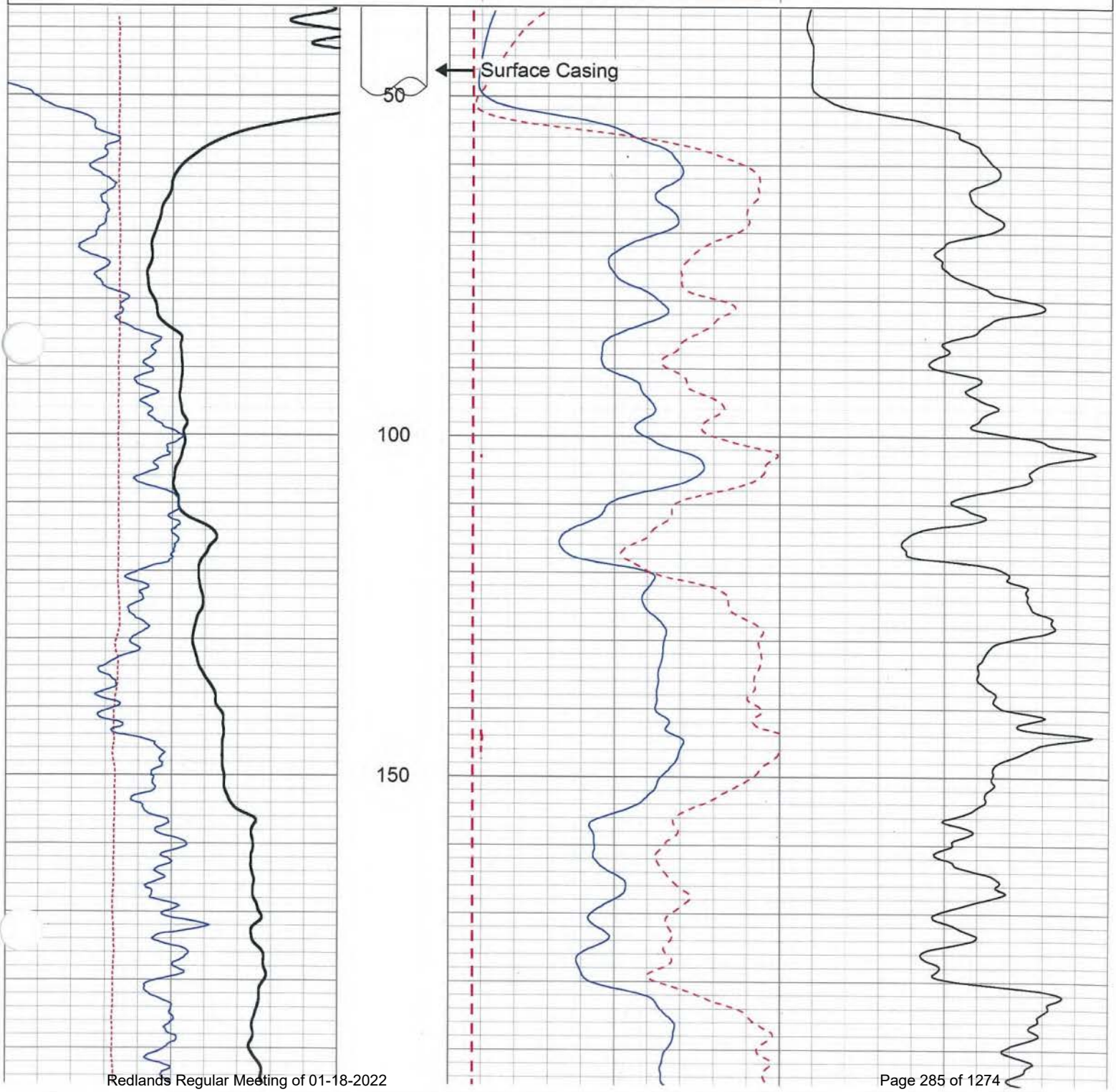
Sensitivity:	0.3272	GAPI/cps

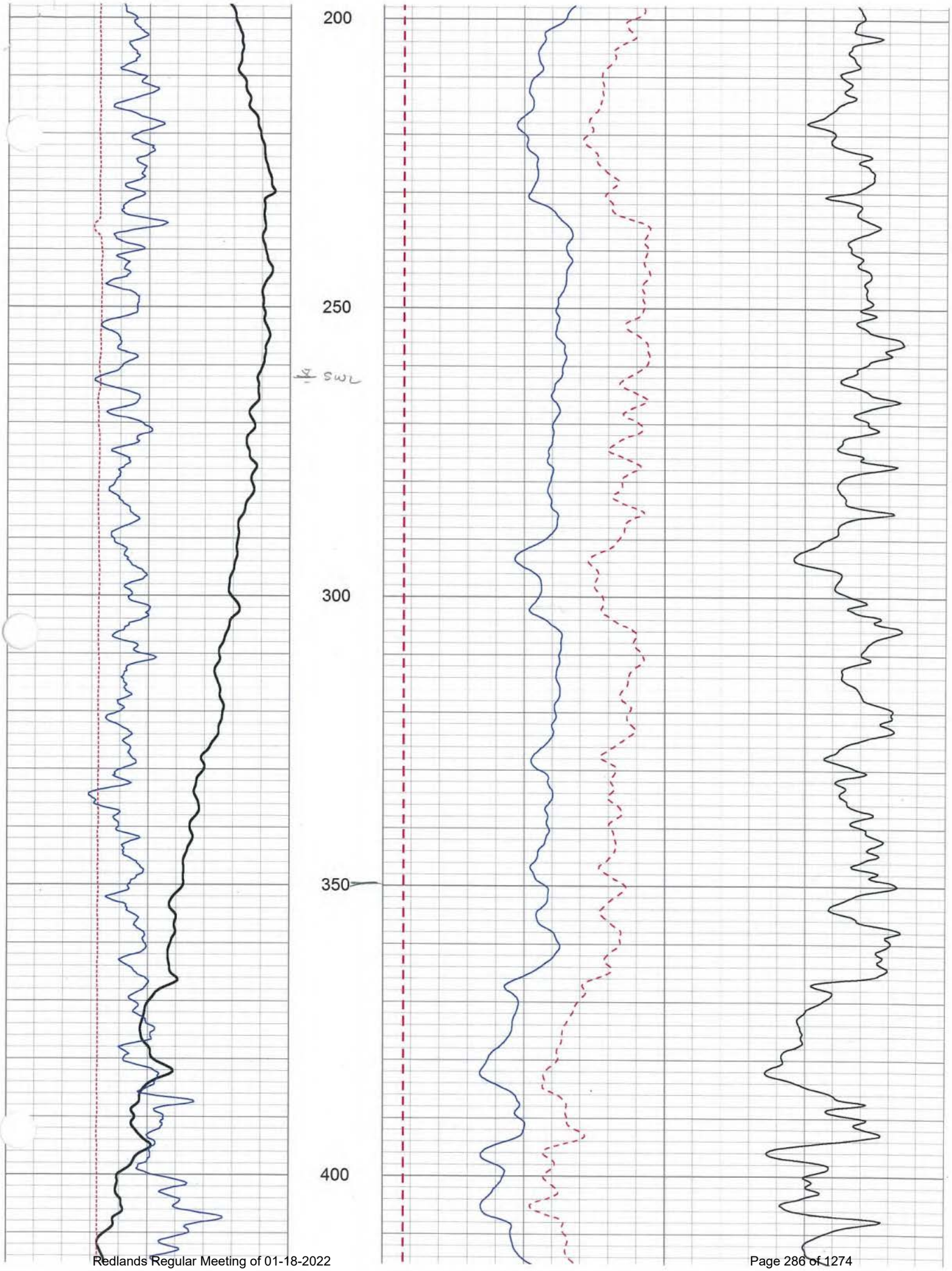
Database File: 16423.db
Dataset Pathname: Elog
Presentation Format: elog
Dataset Creation: Mon Feb 27 02:06:10 2012 by Log Open-Cased 100827
Charted by: Depth in Feet scaled 1:240

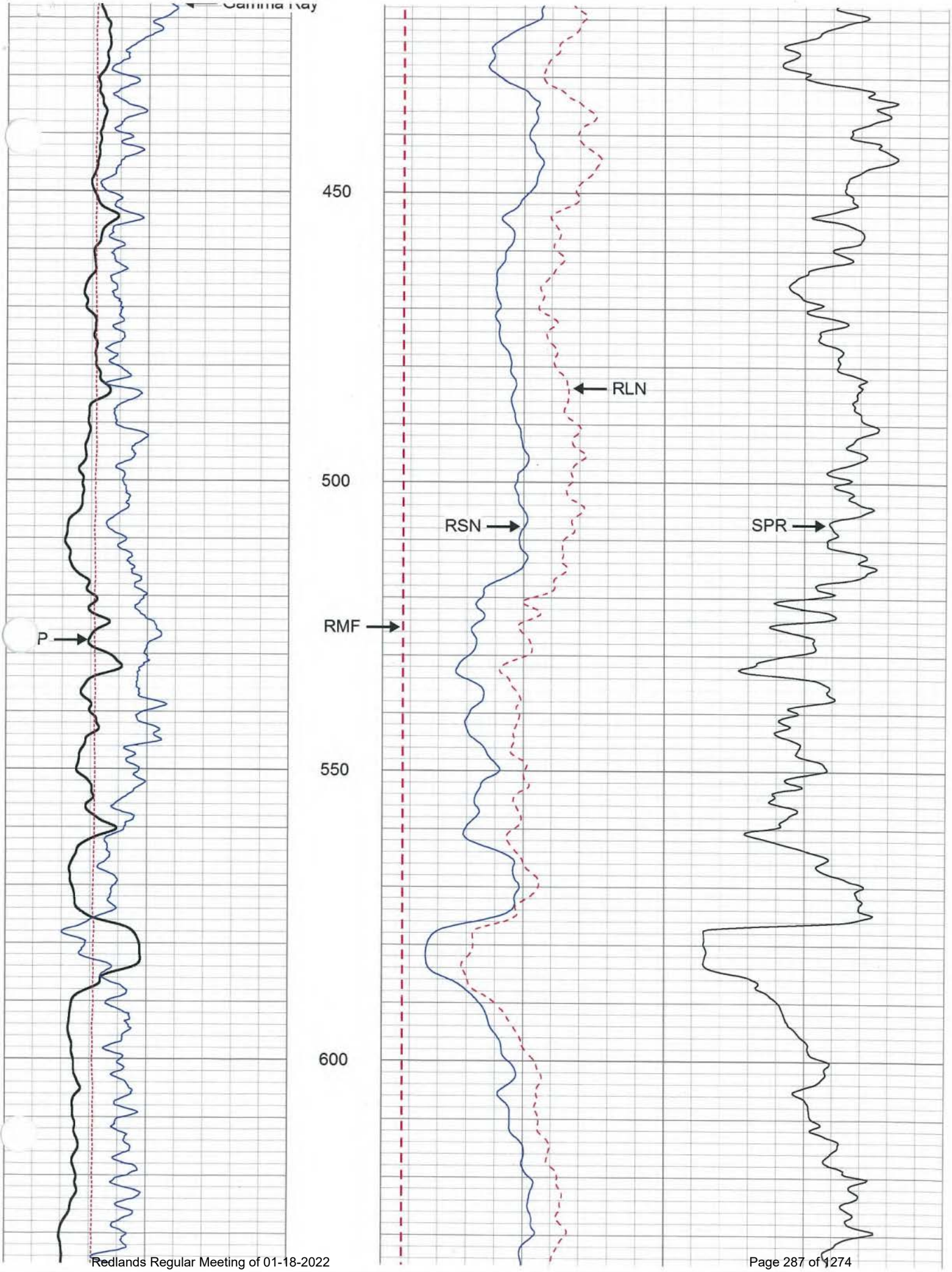
-75	SP (mV)	50
0	Line Speed (ft/min)	-100
30	Gamma Ray (GAPI)	130

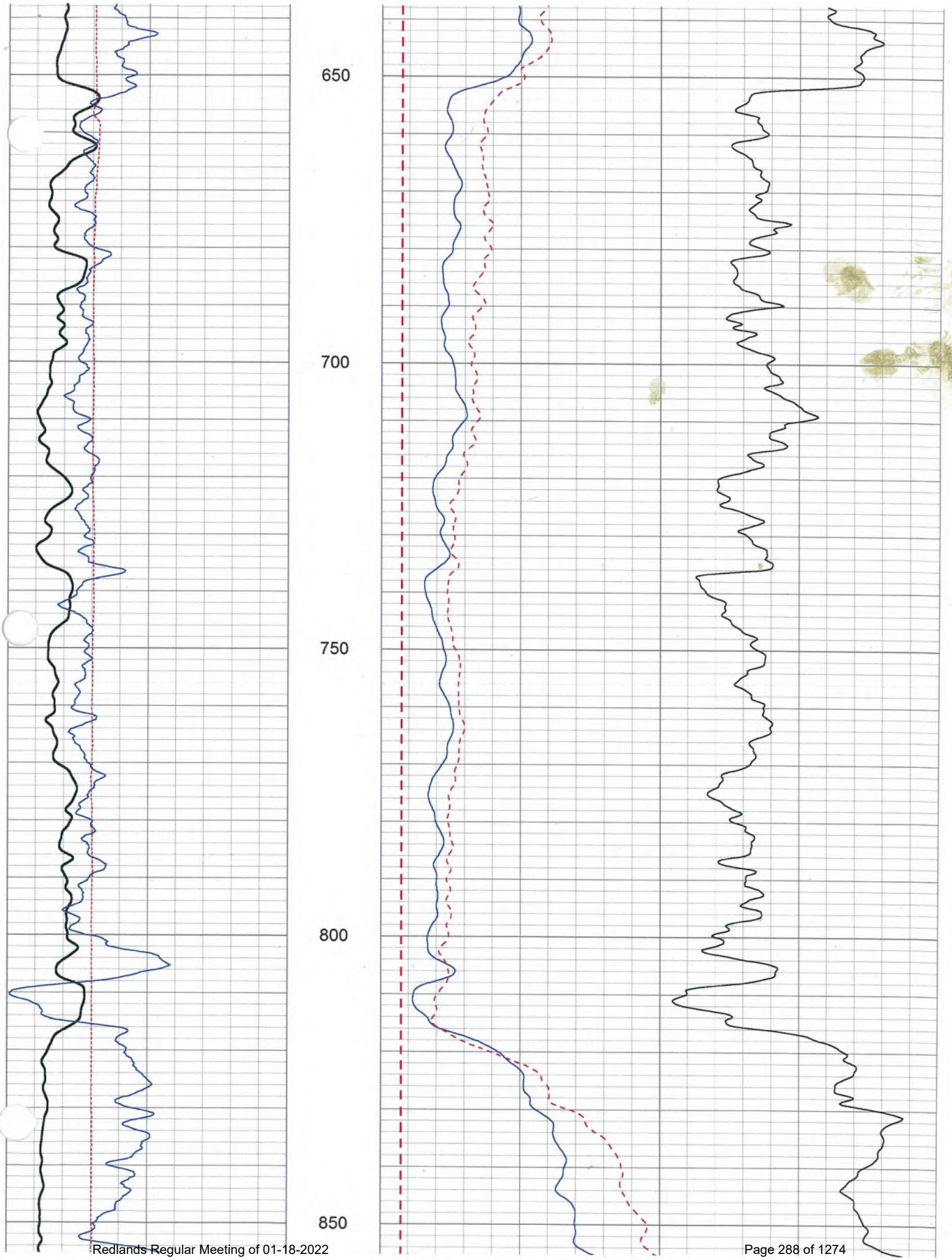
0	RSN (Ohm-m)	200
0	RLN (Ohm-m)	200
0	RMF (Ohm-m)	200
200	RSN x 10 (Ohm-m)	2000
200	RLN x 10 (Ohm-m)	2000

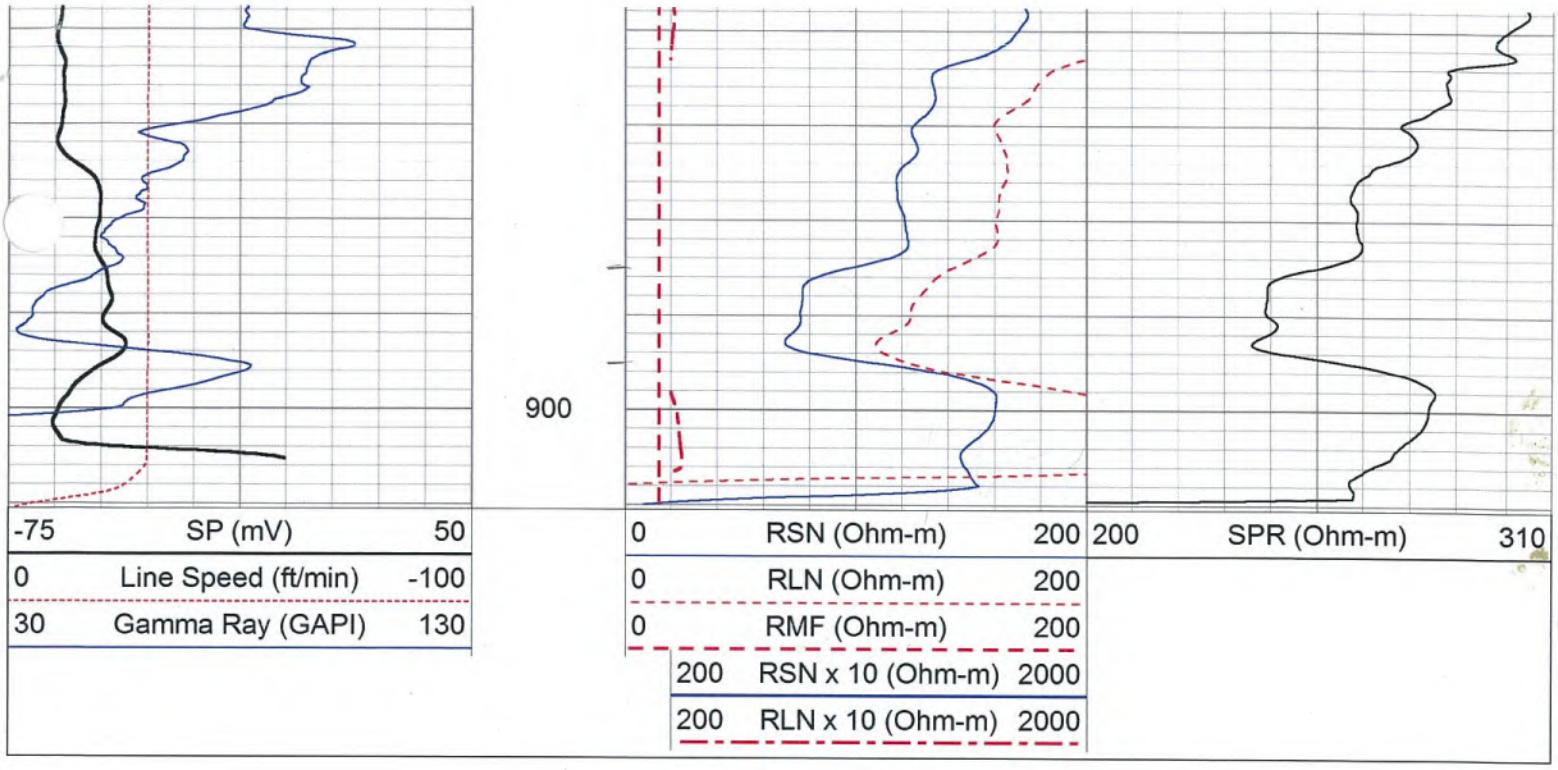
200	SPR (Ohm-m)	310




200
250
300
350
400


Gamma Ray
450
500
550
600
RLN
RSN
SPR
RMF
P


650
700
750
800
850


900
-75 SP (mV) 50
0 Line Speed (ft/min) -100
30 Gamma Ray (GAPI) 130
0 RSN (Ohm-m) 200
0 RLN (Ohm-m) 200
0 RMF (Ohm-m) 200
200 RSN x 10 (Ohm-m) 2000
200 RLN x 10 (Ohm-m) 2000
200 SPR (Ohm-m) 310

*The free Adobe Reader may be used to view and complete this form. However, software must be purchased to complete, save, and reuse a saved form.

File Original with DWR

State of California

Well Completion Report

Refer to Instruction Pamphlet

No. e0115380

Page 1 of 2

Owner's Well Number

Date Work Began 07/29/2010 Date Work Ended 8/4/2010

Local Permit Agency San Bernardino Department of Public Health

Permit Number 7010070342 Permit Date 7/23/10

DWR Use Only – Do Not Fill In

State Well Number/Site Number

N W

Latitude Longitude

APN/TRS/Other

Geologic Log

Orientation ◉ Vertical ○ Horizontal ○ Angle Specify

Drilling Method Reverse Rotary Drilling Fluid Fresh Water

Depth from Surface Feet	to Feet	Description Describe material, grain size, color, etc
35	90	Sand Gravel
90	120	Sand Clay
120	200	Sand Gravel
200	250	Sand Gravel Clay
250	310	Sand Gravel
310	340	Sand Gravel Clay
340	417	Sand Gravel

Total Depth of Boring 417 Feet

Total Depth of Completed Well 415 Feet

Well Owner

Name [redacted]

Mailing Address [redacted]

City Yucaipa State CA. Zip 92399

Well Location

Address San Timoteo Canyon Road

City Yucaipa County San Bernardino

Latitude Deg. Min. Sec. N Longitude Deg. Min. Sec. W

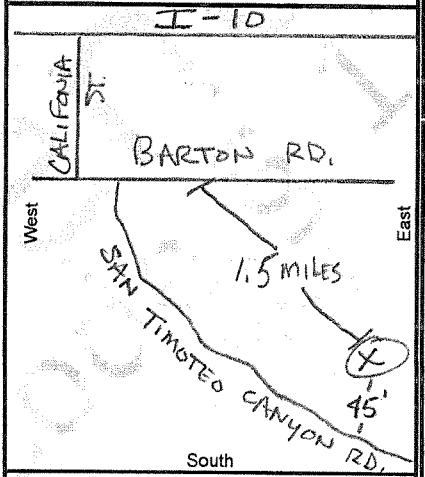
Datum Decimal Lat. Decimal Long.

APN Book 0175 Page 221 Parcel 06

Township 2S Range 3W Section 4

Location Sketch

(Sketch must be drawn by hand after form is printed.)



Illustrate or describe distance of well from roads, buildings, fences, rivers, etc. and attach a map. Use additional paper if necessary. Please be accurate and complete.

Activity

◉ New Well
○ Modification/Repair
○ Deepen
○ Other
○ Destroy
Describe procedures and materials under "GEOLOGIC LOG"

Planned Uses

○ Water Supply
☐ Domestic ☐ Public
☐ Irrigation ☐ Industrial
○ Cathodic Protection
○ Dewatering
○ Heat Exchange
○ Injection
◉ Monitoring
○ Remediation
○ Sparging
○ Test Well
○ Vapor Extraction
○ Other

Water Level and Yield of Completed Well

Depth to first water (Feet below surface)

Depth to Static Water Level (Feet) Date Measured

Estimated Yield * (GPM) Test Type

Test Length (Hours) Total Drawdown (Feet)

*May not be representative of a well's long term yield.

Casings

Depth from Surface Feet	to Feet	Borehole Diameter (Inches)	Type	Material	Wall Thickness (Inches)	Outside Diameter (Inches)	Screen Type	Slot Size if Any (Inches)
0	35	32	Conductor	Low Carbon Steel	.250	20		
0	340	17.5	Blank	PVC Sch. 80	.214	5		
340	360	17.5	Screen	PVC Sch. 80	.214	5		0.050
0	285	17.5	Blank	PVC Sch. 80	.214	5		
285	305	17.5	Screen	PVC Sch. 80	.214	5		0.050
0	120	17.7	Blank	PVC Sch. 80	.214	5		

Annular Material

Depth from Surface Feet	to Feet	Fill	Description
0	225	Filter Pack	8x16 Midcal
225	230	Fill	Sand
230	250	Bentonite	Seal
250	255	Fill	Sand
255	310	Filter Pack	8x16 Gravel
310	315	Fill	Sand

Attachments

☐ Geologic Log
☐ Well Construction Diagram
☐ Geophysical Log(s)
☐ Soil/Water Chemical Analyses
☐ Other

Attach additional information, if it exists.

Certification Statement

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief

Name Bakersfield Well & Pump Co.
Person, Firm or Corporation

7212 Fruitvale Ave Address Bakersfield City CA State 93308 Zip

Signed C-57 Licensed Water Well Contractor 8/20/2010 Date Signed 440537 C-57 License Number

DWR 188 REV. 1/2006

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

*The free Adobe Reader may be used to view and complete this form. However, software must be purchased to complete, save, and reuse a saved form.

File Original with DWR

State of California

Well Completion Report

Refer to Instruction Pamphlet

No. e0115380

Page 2 of 2

Owner's Well Number

Date Work Began 07/29/2010 Date Work Ended 8/4/2010

Local Permit Agency San Bernardino Department of Public Health

Permit Number 7010070342 Permit Date 7/23/10

DWR Use Only – Do Not Fill In

State Well Number/Site Number

Latitude N Longitude W

APN/TRS/Other

Geologic Log

Orientation ◉ Vertical ○ Horizontal ○ Angle Specify

Drilling Method Reverse Rotary Drilling Fluid Fresh Water

Depth from Surface Feet	to Feet	Description Describe material, grain size, color, etc
35	90	Sand Gravel
90	120	Sand Clay
120	200	Sand Gravel
200	250	Sand Gravel Clay
250	310	Sand Gravel
310	340	Sand Gravel Clay
340	417	Sand Gravel

Total Depth of Boring 417 Feet

Total Depth of Completed Well 415 Feet

Well Owner

Name [redacted]

Mailing Address [redacted]

City Yucaipa State CA. Zip 92399

Well Location

Address San Timoteo Canyon Road

City Yucaipa County San Bernardino

Latitude Deg. Min. Sec. N Longitude Deg. Min. Sec. W

Datum Decimal Lat. Decimal Long.

APN Book 0175 Page 221 Parcel 06

Township 2S Range 3W Section 4

Location Sketch

(Sketch must be drawn by hand after form is printed.)

North / West / East / South

Illustrate or describe distance of well from roads, buildings, fences, rivers, etc. and attach a map. Use additional paper if necessary. **Please be accurate and complete.**

Activity

◉ New Well
○ Modification/Repair
○ Deepen
○ Other
○ Destroy
Describe procedures and materials under "GEOLOGIC LOG"

Planned Uses

○ Water Supply
☐ Domestic ☐ Public
☐ Irrigation ☐ Industrial
○ Cathodic Protection
○ Dewatering
○ Heat Exchange
○ Injection
◉ Monitoring
○ Remediation
○ Sparging
○ Test Well
○ Vapor Extraction
○ Other

Water Level and Yield of Completed Well

Depth to first water (Feet below surface)

Depth to Static Water Level (Feet) Date Measured

Estimated Yield * (GPM) Test Type

Test Length (Hours) Total Drawdown (Feet)

*May not be representative of a well's long term yield.

Casings

Depth from Surface Feet	to Feet	Borehole Diameter (Inches)	Type	Material	Wall Thickness (Inches)	Outside Diameter (Inches)	Screen Type	Slot Size if Any (Inches)
120	140	17.5	Screen	PVC Sch. 80	.214	5		0.050

Annular Material

Depth from Surface Feet	to Feet	Fill	Description
315	330	Bentonite	Seal
330	335	Fill	Sand
335	415	Filter Pack	8x16 Midcal

Attachments

☐ Geologic Log
☐ Well Construction Diagram
☐ Geophysical Log(s)
☐ Soil/Water Chemical Analyses
☐ Other

Attach additional information, if it exists.

Certification Statement

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief

Name Bakersfield Well & Pump Co. (Person, Firm or Corporation)

Address 7212 Fruitvale Ave City Bakersfield State CA Zip 93308

Signed [signature] (C-57 Licensed Water Well Contractor) Date Signed 8/20/2010

C-57 License Number 440537

DWR 188 REV. 1/2006

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

ORIGINAL
File with DWR

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES

WATER WELL DRILLERS REPORT

Do Not Fill In
No 105799
State Well No.
Other Well No.

Local Permit # 03098701

(1) OWNER:

Name [redacted]
Address [redacted]
Yucaipa, California 92399

(2) LOCATION OF WELL:

County San Bernardino Owner's number, if any 2A
Township, Range, and Section 2S, 2W, Section 4
Distance from cities, roads, railroads, etc. 1,000 FT. N. of Ave. E., 600' E.of 14th St.

(3) TYPE OF WORK (check):

New Well [X] Deepening [ ] Reconditioning [ ] Destroying [ ]
If destruction, describe material and procedure in Item 11.

(4) PROPOSED USE (check):

Domestic [ ] Industrial [ ] Municipal [X]
Irrigation [ ] Test Well [ ] Other [ ]

(5) EQUIPMENT:

Rotary [X]
Cable [ ]
Other [ ]

(6) CASING INSTALLED:

STEEL: X OTHER:
SINGLE [ ] DOUBLE [ ]

If gravel packed: Yes

From ft.	To ft.	Diam.	Gage or Wall	Diameter of Bore	From ft.	To ft.
0	630	16"	5/16	26"	50	630

Type of shoe or well ring:
Describe joint
Size of gravel: 4 x 7 mix

(7) PERFORATIONS OR SCREEN:

Type of perforation or name of screen

From ft.	To ft.	Perf. per row	Rows per ft.	Size in. x in.
400'	620'			3/32

(8) CONSTRUCTION:

Was a surface sanitary seal provided? Yes [X] No [ ] To what depth 50 ft.
Were any strata sealed against pollution? Yes [ ] No [X] If yes, note depth of strata
From ft. to ft.
From ft. to ft.
Method of sealing Concrete

(9) WATER LEVELS:

Depth at which water was first found, if known ft.
Standing level before perforating, if known ft.
Standing level after perforating and developing 270' ft.

(10) WELL TESTS:

Was pump test made? Yes [X] No [ ] If yes, by whom? McCalla Bros.
Yield: 1500 gal./min. with 86' ft. drawdown after 65½ hrs.
Temperature of water Was a chemical analysis made? Yes [X] No [ ]
Was electric log made of well? Yes [X] No [ ] If yes, attach copy

(11) WELL LOG:

Total depth 673' ft. Depth of completed well 630' ft.
Formation: Describe by color, character, size of material, and structure

ft. to	ft.	
0'-50'		Conductor
50'-80'		Coarse sand, fine gravel
80'-109'		Sand
109'-115'		Gray clay, fine gravel
115'-125'		Brown clay, coarse sand
125'-132'		Sticky brown clay &sand
132'-135'		Coarse sand
135'-173'		Sticky brown clay, sand, gravel
173'-175'		Sand & little clay
175'-180'		Sand & gravel, with clay streaks
180'-183'		Sticky clay & coarse sand
183'-190'		Sticky clay,fine sand & silt
190'-192'		Loose clay, fine & coarse sand
192'-200'		Sticky brown clay,& sand
200'-215'		Coarse sand,loose clay,& gravel
215'-225'		Sticky brown clay,sand& gravel
225'-239'		Coarse sand & loose clay
239'-250'		Sticky clay, sand, & gravel
250'-258'		Coarse sand & loose clay
258'-308'		Coarse sand & gravel
308'-346'		Sticky clay & coarse sand
346'-353'		Sand & small fragmented gravel
353'-547'		Coarse sand, sticky clay, gravel
547'-560'		Coarse sand,gravel, white quartz
560'-590'		Coarse sand & gravel, little cla
590'-673'		Coarse sand, little or no clay gravel very firm

Work started 3-10 19 87 Completed 5-8 19 87

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME McCalla Bros.
(Person, firm, or corporation) (Typed or printed)
Address 802 Nevada Street, Redlands, Ca.
[SIGNED] [signature]
(Well Driller)
License No. C-57196824 Dated July 10, 1987

SKETCH LOCATION OF WELL ON REVERSE SIDE

DWR 188 (REV. 9-68)

87139-790 8-72 30M TRIP ⓘ OSP

[redacted]

Well 2A

0-50'	Conductor
50-80'	Coarse sand and fine gravel
80-109'	Sand no clays
109-115'	Gray clay (loose) and fine gravel
115-125'	Brown clay (loose) coarse sand 70% fine gravel
125-132'	Sticky brown clay and sand
132-135'	Sand (coarse) very loose clay (4')
135-148'	Sticky brown clay sand and gravel (rough drilling)
148-173'	Sticky brown clay some sand and fine gravel, firm spots
173-175'	Sand little clay
175-180'	Sand and gravel with clay streaks
180-183'	Sticky brown clay and coarse sand
183-190'	Very sticky clay and fine sand and silt, some gravel.
190-192'	Loose clay, fine and coarse sand
192-200'	Very sticky brown clay and sand, some small gravel
200-215'	Coarse sand and loose clay, some gravel
215-225'	Sticky brown clay, sand, and gravel
225-239'	Coarse sand and loose clay
239-250'	Sticky clay sand and gravel (fragmented)
250-258'	Coarse sand and loose clay
258-280'	Coarse sand and fine gravel , little clay
280-283'	Coarse sand and gravel, increase in sticky clay
283-308'	Coarse sand and gravel, very loose clay
308-338'	Sticky clay and coarse sand
338-341'	Very sticky clay, some sand and gravel
341-346'	Sticky clay and coarse sand
346-353'	Sand and small fragmented gravel, little clay
353-370'	Coarse sand, very uniform and clay, some gravel.
370-393'	Increase in clay, very sticky
393-409'	Very sticky clay, some sand and gravel (40%)
409-435'	Sticky sand and clay
435-445'	Sticky loose sand, clay, and gravel
445-470'	Loose clay and coarse sand (80%)
470-473'	Sticky clay, sand, and gravel
473-481'	Coarse sand and gravel, loose clay
481-485'	Very tight sticky clay and coarse sand
485-494'	Clay and coarse sand (clay is loose and sticky)
494-545'	Coarse sand fragmented gravel, some clay
545-547'	Coarse sand, gravel, (fragged) sticky clay
547-560'	Coarse sand gravel little loose clay, a lot of very fragged white quartz
560-566'	Coarse sand and gravel, little clay, very rough drilling very tight.
566-578'	Sticky clay coarse sand and fragmented gravel
578-583'	Loose sticky clay coarse sand and gravel
583-587'	Coarse sand, some gravel (fine) loose sticky clay
587-590'	Coarse sand, spotty gravels, tight sticky clay
590-608'	Coarse uniform sand and loose clay (20%) fine fragmented gravels
608-648'	Coarse uniform sand, sticky clay little gravel
648-673'	Coarse sand (uniform) little or no clay, very firm

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JUN 30 1987

[redacted]

ORIGINAL
File with DWR

WMWC WELL 2A

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES

WATER WELL DRILLERS REPORT

25/2W-4G3 Do Not Fill In

No. ~~105799~~

State Well No.

Other Well No.

Local Permit # 03098701

(1) OWNER:

Name [redacted]

Address [redacted]

Yucaipa, California 92399

(2) LOCATION OF WELL:

County San Bernardino Owner's number, if any 2A

Township, Range, and Section 2S, 2W, Section 4

Distance from cities, roads, railroads, etc. 1,000 FT. N. of Ave. E., 600' E. of 14th St.

(3) TYPE OF WORK (check):

New Well ☒ Deepening ☐ Reconditioning ☐ Destroying ☐

If destruction, describe material and procedure in Item 11.

(4) PROPOSED USE (check):

Domestic ☐ Industrial ☐ Municipal ☒

Irrigation ☐ Test Well ☐ Other ☐

(5) EQUIPMENT:

Rotary ☒

Cable ☐

Other ☐

(6) CASING INSTALLED:

STEEL: X OTHER:

SINGLE ☐ DOUBLE ☐

If gravel packed: Yes

From ft.	To ft.	Diam.	Gage or Wall	Diameter of Bore	From ft.	To ft.
0	630	16"	5/16	26"	50	630

Size of shoe or well ring:

Size of gravel: 4 x 7 mix

Describe joint

(7) PERFORATIONS OR SCREEN:

Type of perforation or name of screen

From ft.	To ft.	Perf. per row	Rows per ft.	Size in. x in.
400'	620'			3/32

(8) CONSTRUCTION:

Was a surface sanitary seal provided? Yes ☒ No ☐ To what depth 50 ft.

Were any strata sealed against pollution? Yes ☐ No ☒ If yes, note depth of strata

From ft. to ft.

From ft. to ft.

Method of sealing Concrete

(9) WATER LEVELS:

Depth at which water was first found, if known ft.

Standing level before perforating, if known ft.

Standing level after perforating and developing 270' ft.

(10) WELL TESTS:

Was pump test made? Yes ☒ No ☐ If yes, by whom? McCalla Bros.

Yield: 1500 gal./min. with 81' ft. drawdown after 65½ hrs.

Temperature of water Was a chemical analysis made? Yes ☒ No ☐

Electric log made of well? Yes ☒ No ☐ If yes, attach copy

(11) WELL LOG:

Total depth 673' ft. Depth of completed well 630' ft.

Formation: Describe by color, character, size of material, and structure

ft. to	ft.
0'-50'	Conductor
50'-80'	Coarse sand, fine gravel
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109'-115'	Gray clay, fine gravel
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180'-183'	Sticky clay & coarse sand
183'-190'	Sticky clay, fine sand & silt
190'-192'	Loose clay, fine & coarse sand
192'-200'	Sticky brown clay, & sand
200'-215'	Coarse sand, loose clay, & gravel
215'-225'	Sticky brown clay, sand & gravel
225'-239'	Coarse sand & loose clay
239'-250'	Sticky clay, sand, & gravel
250'-258'	Coarse sand & loose clay
258'-308'	Coarse sand & gravel
308'-346'	Sticky clay & coarse sand
346'-353'	Sand & small fragmented gravel
353'-547'	Coarse sand, sticky clay, gravel
547'-560'	Coarse sand, gravel, white quartz
560'-590'	Coarse sand & gravel, little cla
590'-673'	Coarse sand, little or no clay & gravel very firm

Alw. 330'

Work started 3-10 19 87 Completed 5-8 19 87

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME McCalla Bros.
(Person, firm, or corporation) (Typed or printed)

Address 802 Nevada Street, Redlands, Ca.

[SIGNED] [signature]
(Well Driller)

License No. C-57196824 Dated July 10, 1987

SKETCH LOCATION OF WELL ON REVERSE SIDE

DWR 188 (REV. 9-68) 18954 2A

57139-780 8-72 30M TRIP ⓘT OSP

[redacted]

Well 2A

0-50'	Conductor
50-80'	Coarse sand and fine gravel
80-109'	Sand no clays
109-115'	Gray clay (loose) and fine gravel
115-125'	Brown clay (loose) coarse sand 70% fine gravel
125-132'	Sticky brown clay and sand
132-135'	Sand (coarse) very loose clay (4')
135-148'	Sticky brown clay sand and gravel (rough drilling)
148-173'	Sticky brown clay some sand and fine gravel, firm spots
173-175'	Sand little clay
175-180'	Sand and gravel with clay streaks
180-183'	Sticky brown clay and coarse sand
183-190'	Very sticky clay and fine sand and silt, some gravel.
190-192'	Loose clay, fine and coarse sand
192-200'	Very sticky brown clay and sand, some small gravel
200-215'	Coarse sand and loose clay, some gravel
215-225'	Sticky brown clay, sand, and gravel
225-239'	Coarse sand and loose clay
239-250'	Sticky clay sand and gravel (fragmented)
250-258'	Coarse sand and loose clay
258-280'	Coarse sand and fine gravel , little clay
280-283'	Coarse sand and gravel, increase in sticky clay
283-308'	Coarse sand and gravel, very loose clay
308-338'	Sticky clay and coarse sand
338-341'	Very sticky clay, some sand and gravel
341-346'	Sticky clay and coarse sand
346-353'	Sand and small fragmented gravel, little clay
353-370'	Coarse sand, very uniform and clay, some gravel.
370-393'	Increase in clay, very sticky
393-409'	Very sticky clay, some sand and gravel (40%)
409-435'	Sticky sand and clay
435-445'	Sticky loose sand, clay, and gravel
445-470'	Loose clay and coarse sand (80%)
470-473'	Sticky clay, sand, and gravel
473-481'	Coarse sand and gravel, loose clay
481-485'	Very tight sticky clay and coarse sand
485-494'	Clay and coarse sand (clay is loose and sticky)
494-545'	Coarse sand fragmented gravel, some clay
545-547'	Coarse sand, gravel, (fragged) sticky clay
547-560'	Coarse sand gravel little loose clay, a lot of very fragged white quartz
560-566'	Coarse sand and gravel, little clay, very rough drilling very tight.
566-578'	Sticky clay coarse sand and fragmented gravel
578-583'	Loose sticky clay coarse sand and gravel
583-587'	Coarse sand, some gravel (fine) loose sticky clay
587-590'	Coarse sand, spotty gravels, tight sticky clay
590-608'	Coarse uniform sand and loose clay (20%) fine fragmented gravels
608-648'	Coarse uniform sand, sticky clay little gravel
648-673'	Coarse sand (uniform) little or no clay, very firm

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JUN 23 1987

2A

[redacted]

County of San Bernardino — Environmental Public Works Agency
ENVIRONMENTAL HEALTH SERVICES DEPARTMENT
385 North Arrowhead Avenue · San Bernardino, CA 924[illegible] 160

WELL PERMIT

Do Not Fill In
Permit No. 03098701
Expiration
FF
FA
SN

PLEASE PRINT:

1. OWNER: Name [redacted]
Mailing Address [redacted]
City YUCAIPA CA Zip 92399
Phone No. 790-1901

2. DATE OF WORK *(approximate)*:
Start _____ Complete _____

3. WELL DRILLER *(Check One)*:
☐ Owner ☒ Contractor _____ *Name*

4. WELL USE *(check)*:
☒ Community ☐ Industrial
☐ Individual ☐ Test
☐ Agricultural ☐ Other
☐ Dairy ☐ Horizontal

5. TYPE OF WORK *(check)*:
☑ New ☐ Reconstruction ☐ Destruction

Items 6 through 10 to be estimated for new wells, and exact for all other wells.

6. ANNULAR SEAL: Depth 50 ft.
Furnished by: ☐ Owner ☑ Contractor
☐ Driven Conductor Dia. _____ in., Wall (Gage) _____
☑ Sealing Material Concrete, Thickness _____ in.

7. DEPTH OF WELL *(feet)*:
Proposed 650 Existing _____
DIAMETER OF BORE *(in.)*: 24 to 26

8. CASING INSTALLED:
☑ Steel ☐ Plastic ☐ Other

From (ft.)	To (ft.)	Dia. (in.)	Wall (Gage)
0	650	16"	1/4

GRAVEL PACK: ☑ Yes ☐ No
From 50' to 650 ft.

9. PERFORATIONS *(if applicable)*:
From 400 to 650 ft.

10. SEALED ZONES *(if applicable)*:
From ? to _____ ft.

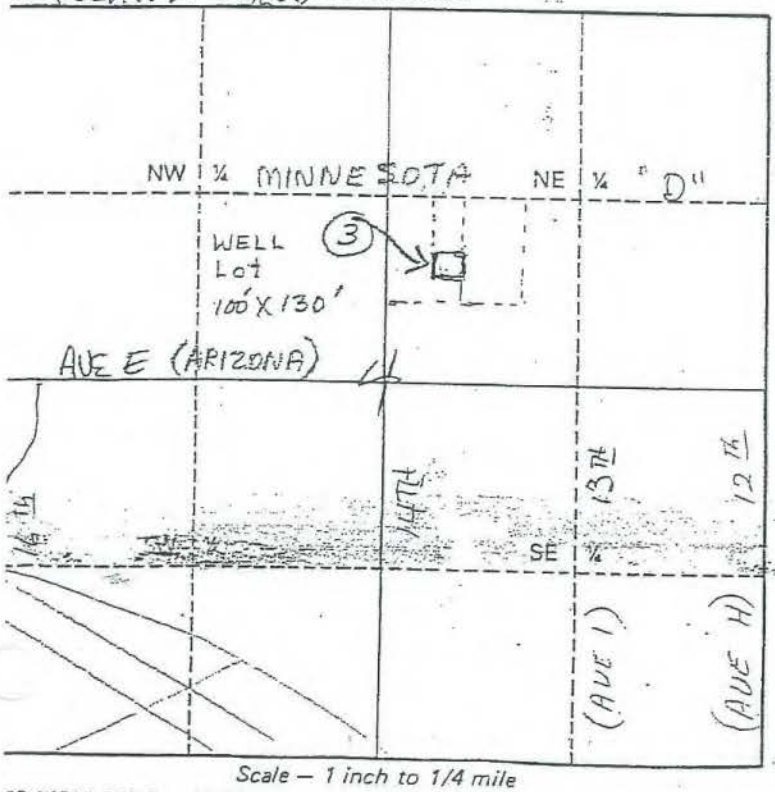
11. GENERAL LOCATION MAP: PG 30-6E
DUNLAP RANCH SUBDV
(a) Sketch location of well, name(s) and location of road(s) on section map.

(b) Township 2S N/S Range 2W E/W
Section 4

(c) Assessor's Parcel No. 301-091-03

(d) Solid or liquid waste disposal site within two miles?
☐ Yes ☐ No
Location: _____

YUCAIPA BLVD SECTION MAP



Scale — 1 inch to 1/4 mile

Do Not Fill In

Fee Stamp	Date Stamp
DATE 030972-2	
AMOUNT 170.00	
RECEIPT NO. 030972-2	
BY: McCulla Bros #5309	
PAID	

03-14785-631 Rev. 11/82

Continue on Reverse Side
NO MAP VIOL

2A

ENVIRONMENTAL HEALTH SERVICES DEPARTMENT
385 North Arrowhead Avenue · San Bernardino, CA 92415-0

WELL PERMIT

Do Not Fill In
Permit No. 03028701
Expiration MAR. 2, 1988
FF
FA
SN

PLEASE PRINT:

1. OWNER: Name [redacted]
Mailing Address [redacted]
WELL #2
City YUCAIPA CA. Zip 92399
Phone No. 714-790-1901

2. DATE OF WORK *(approximate)*:
Start 2 MAR 87 Complete 2 APRIL 87

3. WELL DRILLER *(Check One)*:
☐ Owner ☐ Contractor NOT KNOWN
Name

4. WELL USE *(check)*:
☑ Community ☐ Industrial
☐ Individual ☐ Test
☐ Agricultural ☐ Other
☐ Dairy ☐ Horizontal

5. TYPE OF WORK *(check)*:
☐ New ☐ Reconstruction ☒ Destruction

Items 6 through 10 to be estimated for new wells, and exact for all other wells.

6. ANNULAR SEAL: Depth _____ ft.
Furnished by: ☑ Owner ☐ Contractor
☐ Driven Conductor Dia. 10 in., Wall (Gage) _____
☐ Sealing Material N/A, Thickness N/A in.

7. DEPTH OF WELL *(feet)*:
Proposed _____ Existing 472'
DIAMETER OF BORE *(in.)*: 10'

8. CASING INSTALLED:
☐ Steel ☐ Plastic ☐ Other

From (ft.)	To (ft.)	Dia. (in.)	Wall (Gage)
0	472'	10"	

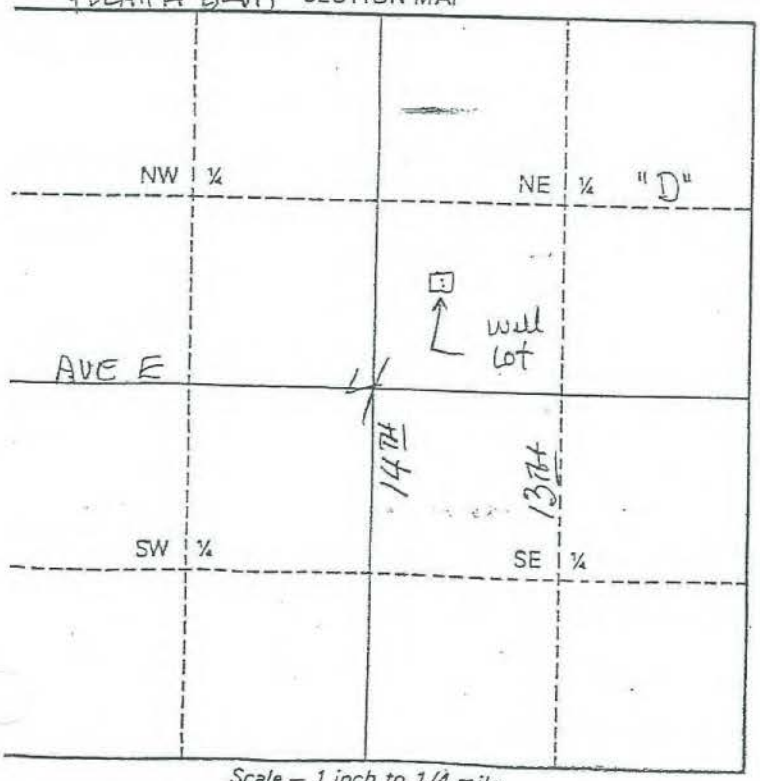
GRAVEL PACK: ☐ Yes ☑ No
From N/A to N/A ft.

9. PERFORATIONS *(if applicable)*:
From N/A to N/A ft.

10. SEALED ZONES *(if applicable)*:
From N/A to N/A ft.

11. GENERAL LOCATION MAP:
(a) Sketch location of well, name(s) and location of road(s) on section map.
(b) Township 2S N/S Range 2W E/W
Section 4
(c) Assessor's Parcel No. 301-091-03
(d) Solid or liquid waste disposal site within two miles?
☐ Yes ☑ No
Location: _____

YUCAIPA BLVD SECTION MAP



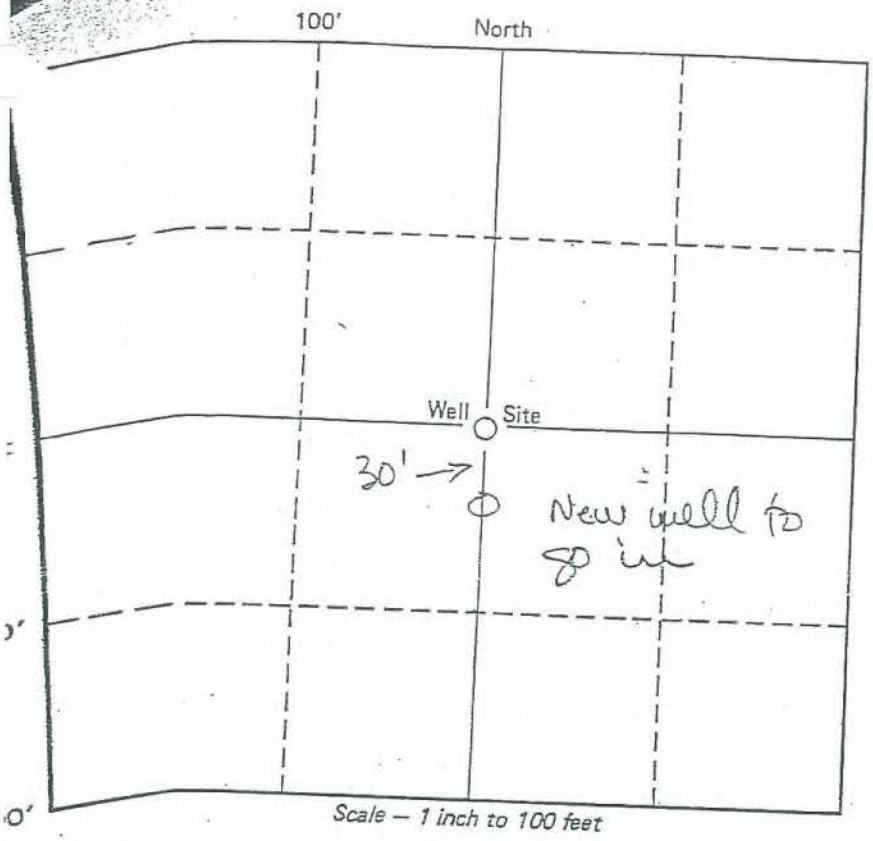
Scale – 1 inch to 1/4 mile

Do Not Fill In
Fee Stamp
Date Stamp
Fee Exempt
Rec'd 3/2/87

03-14785-631 Rev. 11/82

Continue on Reverse Side

2A



12. PLOT PLAN:

(a) In perspective to the well site, sketch and label the following items: well lot property lines, other wells *(include abandoned wells)*, sewage disposal systems *(sewers, septic tanks, leaching fields, seepage pits, cesspools)*, lakes and ponds, water courses and animals or fowl kept.

(b) Indicate the distance in *feet*, of any of the following which are within 200 ft. of the well site:

Other wells	
Sewers	
Septic tanks	
Leaching fields	
Seepage pits	
Cesspools	
Lakes and ponds	
Water courses	
Animals or fowl kept	

I have read this application and agree to comply with all laws regulating the type of work being performed. The California Labor Code requires Workers' Compensation Insurance as a prerequisite to permit issuance unless the applicant signs the following certificate:

☐ I certify that in the performance of the work for which this permit is issued, I shall not employ any person in any manner so as to become subject to the Workers' Compensation laws of California.

Owner's Signature Louis F. Burns Date 2 MAR 87

☐ Contractor's Signature _____ Date _____ Reg. No. _____

DISPOSITION OF PERMIT

(Do Not Fill In)

☑ Approved subject to the following:

A. Notify the Department, STUART LONG 387-4666, twenty-four (24) hours in advance to make an inspection of the following operations:

☐ Prior to sealing of the annular space or filling of the conductor casing.

☐ Verify the depth of the conductor (outer) casing prior to further drilling and installation of the inner casing.

☐ After installation of the surface protective slab and pumping equipment.

☑ During destruction of wells, prior to pouring the sealing material.

B. Submit to the Department within thirty (30) days after completion of work, a copy of:

☑ Water Well Driller's Report ☐ Bacteriological Analysis ☐ Inorganic Chemical Analysis

C. Other _____

☐ DENIED _____



0 - destroyed .10"

12. PLOT PLAN:

(a) In perspective to the well site, sketch and label the following items: well lot property lines, other wells *(include abandoned wells)*, sewage disposal systems *(sewers, septic tanks, leaching fields, seepage pits, cesspools)*, lakes and ponds, water courses and animals or fowl kept.

(b) Indicate the distance in *feet*, of any of the following which are within 200 ft. of the well site:

Other wells 50' - Abandoned per Bill
Sewers
Septic tanks
Leaching fields
Seepage pits
Cesspools
Lakes and ponds
Water courses
Animals or fowl kept

ENVIRONMENTAL HEALTH SERVICES MAR 6 1987 CHECKED

13. I have read this application and agree to comply with all laws regulating the type of work being performed. The California Labor Code requires Workers' Compensation Insurance as a prerequisite to permit issuance unless the applicant signs the following certificate:

☑ I certify that in the performance of the work for which this permit is issued, I shall not employ any person in any manner so as to become subject to the Workers' Compensation laws of California.

Owner's Signature _____ Date _____

☐ Contractor's Signature Bill Provence Date 3/3/87 Reg. No. _____

DISPOSITION OF PERMIT

(Do Not Fill In)

☒ Approved subject to the following:

A. Notify the Department, Stuart Long (714) 387-4666, twenty-four (24) hours in advance to make an inspection of the following operations:

☒ Prior to sealing of the annular space or filling of the conductor casing.

☐ Verify the depth of the conductor (outer) casing prior to further drilling and installation of the inner casing.

☒ After installation of the surface protective slab and pumping equipment.

☐ During destruction of wells, prior to pouring the sealing material.

B. Submit to the Department within thirty (30) days after completion of work, a copy of:

☒ Water Well Driller's Report. ☐ Bacteriological Analysis ☐ Inorganic Chemical Analysis

C. Other _____

DENIED _____

[redacted]

Dly 1.	22'	235-245 very rough.	
DC.	27' 10"	258-270 rough.	
DC	21' 11"		
	71' 9"		
DC	27' 3"	10. 350' 0"	24 630' 1"
	44' 0"	21' 7"	21' 1"
DC	17' 1"	11. 371' 7"	651' 3"
	116' 1"	21' 7"	21' 6"
DC	17' 3"	12. 393' 2"	25 673' 2"
	133' 4"	21' 8"	
D	21' 7"	13. 414' 10"	oil #2
1.	154' 11"	21' 7"	
	21' 8"	14. 436' 5"	static 273
2	176' 7"	21' 7"	
	21' 7"	15. 458' 0"	
3.	198' 2"	21' 8"	
	21' 7"	16. 479' 8"	
4.	219' 7"	21' 8"	
	21' 7"	17. 501' 4"	
5.	241' 4"	21' 7"	
	22' 5"	18. 522' 11"	
6.	263' 7"	21' 6"	
	21' 7"	19. 544' 5"	
7.	285' 4"	21' 5"	
	21' 6"	20. 565' 10"	
8.	306' 10"	21' 7"	
	21' 7"	21. 586' 5"	
9	328' 5"	21' 7"	
	21' 7"	22. 608' 0"	
10	350' 0	22' 1"	

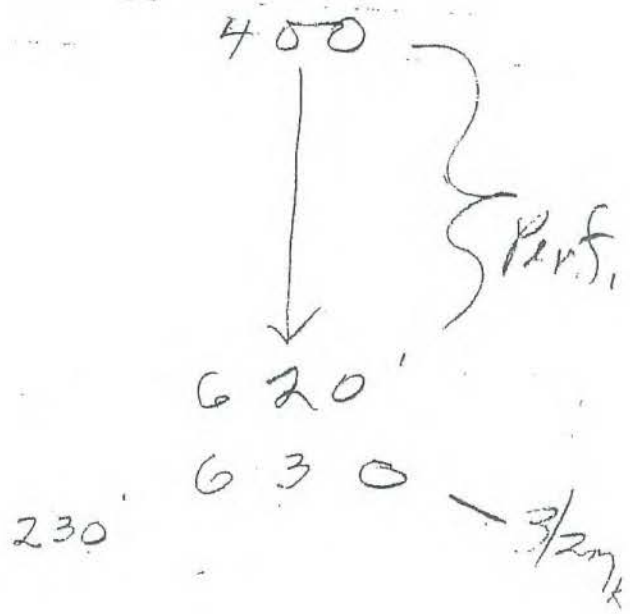
[redacted]

Well # 2A
25/2W-9G3

0-50'	conductor
50'-80'	coarse sand and fine gravel
80'-109'	sand no clays.
109'-115'	gray clay (loose) & fine gravel
115'-125	brown clay (loose) coarse sand 70% fine gu
125'-132'	sticky brown clay & sand
132-135'	sand (coarse) very loose clay 4'
135-148	sticky brown clay sand & gravel (Rough drillin
148-173	sticky brown clay some sand & fine gravel 1 firm spots
173-175	sand & little clay
175-180	sand & gravel with clay streaks.
180-183	sticky brown clay & coarse sand.
183-190	very sticky clay & fine sand & silt some gravel.
190-192	loose clays fine & coarse sand.
192-200	very sticky brown clay & sand some angel grav
200-215	coarse sand & loose clay some gravel.
215-225	sticky brown clay & sand & gravel.
225-239	coarse sand & loose clay.
239-250	sticky clay sand & gravel (fragmented)
250-258	coarse sand & loose clay
258-280	coarse sand & fine gravel little clay
280-283	coarse sand & gravel increase in sticky clay.
283-308	coarse sand & gravel very loose clay.
308-338	sticky clay & coarse sand
338-341	very sticky clay some sand & gravel.
341-346	sticky clay & coarse sand.
346-353	sand & small fragmented gravel, little clay
353-370	coarse sand very uniform & clay. some gravel.
370-393	increase in clay very sticky
393-400	very sticky clay some sand & gravel (40%)

Redlands Regular Meeting of 01-18-2022

[illegible]-445	sticky loose clay sand & gravel
445-470	loose clay & loose sand (80%)
470-473	sticky clay sand & gravel
473-481	coarse sand & gravel loose clay (~~[illegible]~~)
481-485	very tight sticky clay & coarse sand.
485-494	clay & coarse sand (clay is loose & sticky)
494-545	coarse sand fragmented gravel some clay
545-547	coarse sand gravel (jagged) sticky clay
547-560	coarse sand gravel little loose clay. a lot of very jagged white gravels
560-566	coarse sand fine gravel little clay very tough drilling very tight
566-573	sticky clay coarse sand and fragmented gravel.
573-583	loose sticky clay coarse sand & gravel.
583-[illegible]87	coarse sand some gravel (fine) loose sticky clay.
[illegible]87-590	coarse sand spotty gravels tight sticky clay
590-608	coarse uniform sand and loose clay (20%) fine fragmented gravels
608-648	coarse uniform sand sticky clay little gravel
[illegible]3-673	coarse sand uniform little of no clay very firm.



Redlands Regular Meeting of 01-18-2022

FORM 115

INVESTIGATION

South Coastal Basin

DIVISION OF WATER RESOURCES
DEPARTMENT OF PUBLIC WORKS
STATE OF CALIFORNIA

2S/2W-3E1

SHEET 1

NUMBER F-132j-

WELL LOG

LOCAL DESIGNATION Owner #6

LOCATION 40 ~~50'~~ S. of Ave. D, ST on ℄ of 11th St., proj. S., Lot #40, Dunlap Sub. #2, Yucaipa.

Loc.#18216F

OWNER [redacted]

DATE COMPLETED ~~1930~~ 1927

DIAMETER OF CASING 20"

DRILLED BY Clark McEwen S.B.V.W.C.D.

SOURCE OF INFORMATION Redlands-Yucaipa Land Co.

INSPECTED WHILE DRILLING SEE FILE NO.

SURFACE ELEVATION 2160 D.W.R. Map

SKETCH

DEPTH	ELEVATION OF BOTTOM OF STRATUM	MATERIAL	THICKNESS FEET	% VOIDS	ABSOLUTE VOIDS FEET	TOTAL VOIDS FEET
1-122		Dry sand	122			
122-130		Dirty gravel	8			
130-137		Clay	7			
152		Gravel	15			
236		Sandy clay	84			
240		Dirty gravel	4			
252		Fair gravel	12			
328		Sandy clay	74			
340		Gravel - extra good	12			
378		Clay and silt	38			
388		Gravel	10			
395		Dirty gravel	7			
440		Clay and gravel	45			
456		Gravel	16			
466		Clay	10			
472		Fair gravel	6			
478		Clay	6			
500		Gravel	22			
505		Clay	5			
544		Gravel	39			
590		Rocks and muddy gravel	50			
599		Clay	9			
		Perf 135-578				
		Pumps 90" - drawdown 90'				
		PERF. WITH 1/2" KNIFE 6 HOLES TO A ROUND				

MICROFILMED

FOR FIELD COPIES USE ALTERNATE LINES

LOG OBTAINED BY DATE

SOUTHERN CALIFORNIA EDISON COMPANY

APRIL 9, 1979

[redacted]

YUCAIPA, CA 92399

SUBJECT: HYDRAULIC TEST RESULTS - WELL 6
ACCT: 4-26-31-618-3080
LOTH & AVE "D"
DATE OF TEST:FEBRUARY 28,1979

IN ACCORDANCE WITH YOUR REQUEST, A TEST WAS MADE ON YOUR TURBINE WELL PUMP ON THE DATE LISTED ABOVE. IF YOU HAVE ANY QUESTIONS REGARDING THE TEST RESULTS WHICH FOLLOW, PLEASE CONTACT L. E. WILSON, 793-2712.

EQUIPMENT

PUMP: L&B NO: 26896
MOTOR: US 125.0 HP NO: 499075
METER: P229-204

TEST RESULTS

DISCHARGE PRESSURE,PSI	53.5
STANDING WATER LEVEL,FT	321.7
DRAWDOWN,FT	23.8
DISCHARGE HEAD,FT	123.6
PUMPING WATER LEVEL,FT	345.5
TOTAL HEAD,FT	469.1
CAPACITY,GPM	557.
GPM PER FT DRAWDOWN	23.4
ACRE FT PUMPED IN 24 HRS	2.466
KW INPUT TO MOTOR	106.3
HP INPUT TO MOTOR	142.5
MOTOR LOAD(%)	103.8
MEASURED SPEED OF PUMP,RPM	1775.0
KWH PER ACRE FT	1035.
OVERALL PLANT EFFICIENCY(%)	46.4
CUSTOMER'S METER,GPM	553

W. S. FRANKEN
DISTRICT MANAGER

QUADRUPLICATE
RETAIN THIS COPY

WATER WELL DRILLERS REPORT

(Sections 7076, 7077, 7078, Water Code)

8

STATE OF CALIFORNIA

Do Not Fill In
No 100589
State Well No. 2S/2W-5K1
Other Well No.

(1) OWNER:
Name [redacted]
Address [redacted]
Yucaipa, California

(2) LOCATION OF WELL:
County San Bernardino Owner's number, if any— 10
R. F. D. or Street No. Ave. E near the corner of 17th St.

(3) TYPE OF WORK (*check*):
New well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in Item 11.

(4) PROPOSED USE (*check*):
Domestic ☐ Industrial ☐ Municipal ☒
Irrigation ☐ Test Well ☐ Other ☐

(5) EQUIPMENT:
Rotary ☐
Cable ☒
Dug Well ☐

(6) CASING INSTALLED:
SINGLE ☒ DOUBLE ☐
From 0 ft. to 690 ft. 16 Diam. 5/16 Gage or Wall

If gravel packed

Diameter of Bore	from ft.	to ft.

Type and size of shoe or well ring 16"x14"x1/4" Size of gravel:
Describe joint All joints butt welded

(7) PERFORATIONS:
Type of perforator used Mills
Size of perforations 3/8 in., length, by 2 in.

From ft. to	ft.	Perf. per row	Rows per ft.
330	670	7	1 row per ft.

(8) CONSTRUCTION:
Was a surface sanitary seal provided? ☒ Yes ☐ No To what depth By Owners 50 ft.
Were any strata sealed against pollution? ☐ Yes ☒ No If yes, note depth of strata

From ft.	to ft.

Method of Sealing

(9) WATER LEVELS:
Depth at which water was first found 169 ft.
Standing level before perforating 169 ft.
Standing level after perforating 169 ft.

(10) WELL TESTS:
Was a pump test made? ☒ Yes ☐ No If yes, by whom? Owners
Yield: gal./min. with ft. draw down after hrs.
Temperature of water Was a chemical analysis made? ☐ Yes ☐ No
Was electric log made of well? ☐ Yes ☐ No

(11) WELL LOG:
Total depth 690 ft. Depth of completed well 690 ft.
Formation: *Describe by color, character, size of material, and structure.*

ft. to ft.	
0 – 4	Black adobe
4 – 7	White caleche
7 – 55	Brown clay
55 – 133	Brown sandy clay and gravel
133 – 151	Sand and gravel
151 – 165	Brown sandy clay
165 – 175	Gravel
175 – 242	Brown sandy clay with gravel streaks
242 – 248	Brown sandy clay
248 – 282	Brown clay with gravel streaks
282 – 330	Clay and embedded gravel
330 – 335	Loose sand and gravel
335 – 360	50% cemented gravel & 50% loose gravel with clay streaks
360 – 548	Clean coarse sand and gravel with streaks of cemented gravel
548 – 570	Brown clay with large gravel embedded
570 – 600	Brown gravel- clay-and conglomerate
600 – 618	Loose coarse sand-gravel and boulders
618 – 622	Tight clay-gravel and boulders
622 – 667	Clean coarse sand-gravel and boulders
667 – 690	Brown tight clay-gravel and boulders

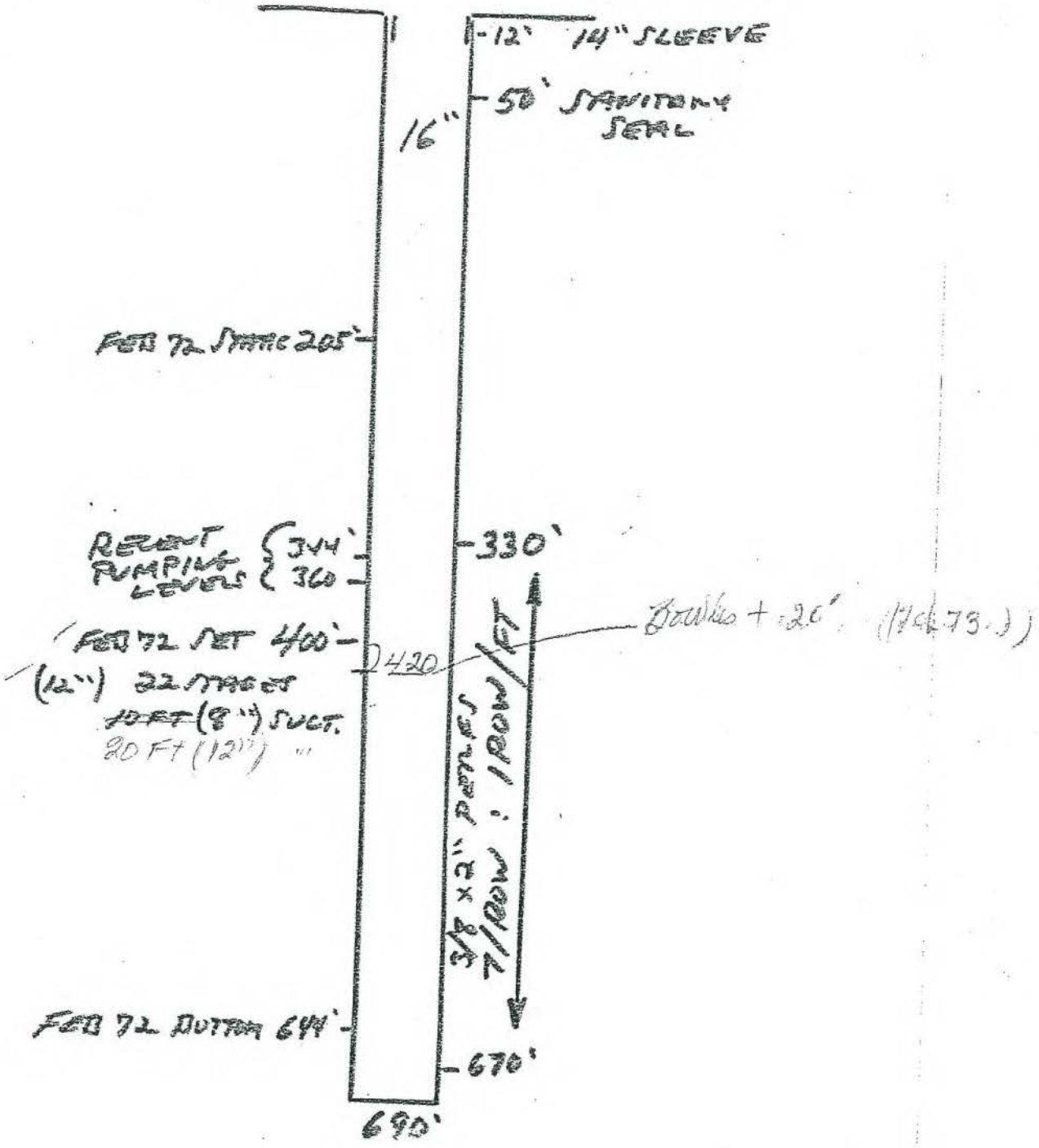
Work started Jan. 16 19 64 Completed Mar. 31 19 64

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
NAME KIRKLAND WELL SERVICE (Person, firm, or corporation) (Typed or printed)
Address 32291 Dunlap Blvd.
Yucaipa, California
[SIGNED] K. Kirkland Well Driller
License No. 168847 Dated April 5, 19 64

2102 7-59 600 QUIN △ SPO

#10 Well

This is Harold's Note.
Can't find bill that
it was done
Bernice



TRIPLICATE
Owner's Copy

Page 1 of 1

Owner's Well No. 11

Date Work Began 4/23/97 Ended 7/3/97

Local Permit Agency san bernardino environmental health

Permit No. 04219701 Permit Date 4/21/97

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet

No. 469733

DWR USE ONLY — DO NOT FILL IN
STATE WELL NO./STATION NO.
LATITUDE LONGITUDE
APN/TRS/OTHER

GEOLOGIC LOG

ORIENTATION (✓) X VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)

DEPTH TO FIRST WATER 347 (Ft.) BELOW SURFACE

DEPTH FROM SURFACE Ft.	to Ft.	DESCRIPTION *Describe material, grain size, color, etc.*
0	50	SAND & CLAY
50	180	course sand & clay
180	210	COARSE SAND & CLAY
210	350	CLAY
350	940	COARSE GRAVEL, SAND & SOME CLAY
940	960	SAND, GRAVEL & SMALL ROCKS
960	1720	CLAY

RECEIVED
DEC - 3 1997
[redacted]

TOTAL DEPTH OF BORING 1720 (Feet)
TOTAL DEPTH OF COMPLETED WELL 1710 (Feet)

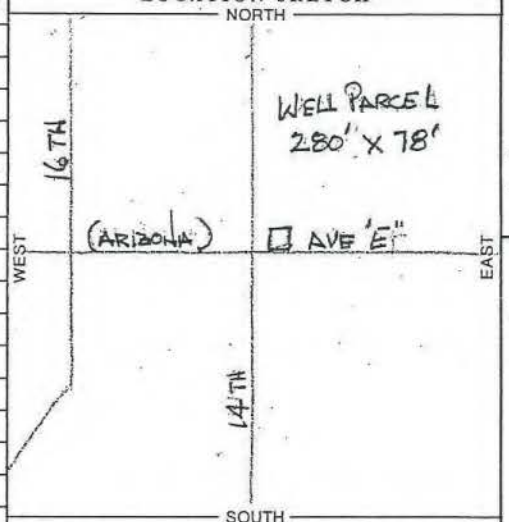
WELL OWNER

Name [redacted]
Mailing Address [redacted]
YUCAIPA CA 92399
CITY STATE ZIP

WELL LOCATION

Address
City YUCAIPA
County SAN BERNARDINO
APN Book ___ Page ___ Parcel ___
Township 2S Range 2W Section 4
Latitude ___ NORTH Longitude ___ WEST
DEG. MIN. SEC. DEG. MIN. SEC.

LOCATION SKETCH



Illustrate or Describe Distance of Well from Landmarks such as Roads, Buildings, Fences, Rivers, etc.
PLEASE BE ACCURATE & COMPLETE.

ACTIVITY (✓)

X NEW WELL
MODIFICATION/REPAIR
___ Deepen
___ Other (Specify)
___ DESTROY *(Describe Procedures and Materials Under "GEOLOGIC LOG")*

PLANNED USE(S) (✓)

___ MONITORING
WATER SUPPLY
___ Domestic
X Public
___ Irrigation
___ Industrial
___ "TEST WELL"
___ CATHODIC PROTECTION
___ OTHER (Specify)

DRILLING METHOD REVERSE ROTARY FLUID WATER

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH OF STATIC WATER LEVEL 347 (Ft.) & DATE MEASURED 6/18/97
ESTIMATED YIELD 2000* (GPM) & TEST TYPE PUMP
TEST LENGTH 51 (Hrs.) TOTAL DRAWDOWN 76 (Ft.)
** May not be representative of a well's long-term yield.*

CASING(S)

DEPTH FROM SURFACE Ft.	to Ft.	BORE-HOLE DIA. (Inches)	TYPE (✓) BLANK	SCREEN	CONDUCTOR	FILL PIPE	MATERIAL/GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)
0	50	36			X		STEEL	30	3/8	
0	705	26	X				STEEL	16	5/16	.090
705	1205	26		X			STEEL	16	5/16	.090
1205	1210	24	X				STEEL	16x12	5/16	
1210	1690	24		X			STEEL	12	5/16	.090
1690	1710	24	X				STEEL	12	5/16	

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft.	to Ft.	TYPE: CEMENT (✓)	BENTONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
0	300	X			
300	1710				4x10

ATTACHMENTS (✓)

___ Geologic Log
___ Well Construction Diagram
___ Geophysical Log(s)
___ Soil/Water Chemical Analyses
___ Other ___

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME LAYNE CHRISTENSEN COMPANY
(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

11001 ETIWANDA AVE. FONTANA CA 92337
ADDRESS CITY STATE ZIP

Signed Rolanda Ett
WELL DRILLER/AUTHORIZED REPRESENTATIVE

11-26-97
DATE SIGNED

510011
C-57 LICENSE NUMBER

25/2W - 464

TRIPLICATE
Owner's Copy
Page 1 of 1
Owner's Well No. 11

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet
No. 469733

Date Work Began 4/23/97 Ended 7/3/97
Local Permit Agency san bernardino environmental health
Permit No. 04219701 Permit Date 4/21/97

DWR USE ONLY — DO NOT FILL IN
STATE WELL NO./STATION NO.
LATITUDE LONGITUDE
APN/TRS/OTHER

GEOLOGIC LOG

ORIENTATION (✓) X VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)
DEPTH TO FIRST WATER 347 (Ft.) BELOW SURFACE

DEPTH FROM SURFACE Ft.	to Ft.	DESCRIPTION *Describe material, grain size, color, etc.*
0	50	SAND & CLAY
50	180	course sand & clay
180	210	COARSE SAND & CLAY
210	350	CLAY
350	940	COARSE GRAVEL, SAND & SOME CLAY
940	960	SAND, GRAVEL & SMALL ROCKS
960	1720	CLAY

RECEIVED
DEC - 3 1997
[redacted]

TOTAL DEPTH OF BORING 1720 (Feet)
TOTAL DEPTH OF COMPLETED WELL 1710 (Feet)

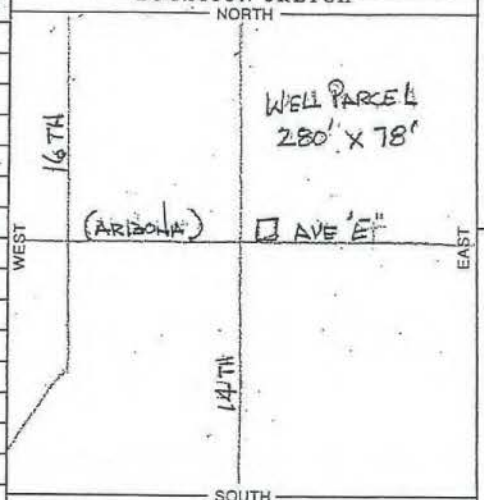
WELL OWNER

Name [redacted]
Mailing Address [redacted]
YUCAIPA CA 92399
CITY STATE ZIP

WELL LOCATION

Address
City YUCAIPA
County SAN BERNARDINO
APN Book Page Parcel
Township 25 Range 2W Section 4
Latitude DEG. MIN. SEC. NORTH Longitude DEG. MIN. SEC. WEST

LOCATION SKETCH



Illustrate or Describe Distance of Well from Landmarks such as Roads, Buildings, Fences, Rivers, etc. PLEASE BE ACCURATE & COMPLETE.

ACTIVITY (✓)
X NEW WELL
MODIFICATION/REPAIR
___ Deepen
___ Other (Specify)
___ DESTROY (Describe Procedures and Material Under "GEOLOGIC LOG")

PLANNED USE(S) (✓)
___ MONITORING
WATER SUPPLY
___ Domestic
X Public
___ Irrigation
___ Industrial
___ "TEST WELL"
___ CATHODIC PROTECTION
___ OTHER (Specify)

DRILLING METHOD REVERSE ROTARY FLUID WATER

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH OF STATIC WATER LEVEL 347 (Ft.) & DATE MEASURED 6/18/97
ESTIMATED YIELD 2000* (GPM) & TEST TYPE PUMP
TEST LENGTH 51 (Hrs.) TOTAL DRAWDOWN 76 (Ft.)
** May not be representative of a well's long-term yield.*

CASING(S)

DEPTH FROM SURFACE Ft.	to Ft.	BORE-HOLE DIA. (Inches)	TYPE (✓) BLANK	SCREEN	CONDUCTOR	FILL PIPE	MATERIAL/ GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)
0	50	36			X		STEEL	30	3/8	
0	705	26	X				STEEL	16	5/16	
705	1205	26		X			STEEL	16	5/16	.090 .090
1205	1210	24	X				STEEL	16x12	5/16	
1210	1690	24		X			STEEL	12	5/16	.090
1690	1710	24	X				STEEL	12	5/16	

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft.	to Ft.	TYPE CEMENT (✓)	BENTONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
0	300	X			
300	1710				4x10

ATTACHMENTS (✓)

___ Geologic Log
___ Well Construction Diagram
___ Geophysical Log(s)
___ Soil/Water Chemical Analyses
___ Other
ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.
NAME LAYNE CHRISTENSEN COMPANY (PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)
ADDRESS 11001 ETIWANDA AVE. CITY FONTANA STATE CA ZIP 92337
Signed Rolando Estr WELL DRILLER/AUTHORIZED REPRESENTATIVE
DATE SIGNED 11-26-97
C-57 LICENSE NUMBER 510011

DWR 188 REV. 7-90 18955 IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM WELL NO-11

DUPLICATE
Driller's Copy

Page 1 of 2
Owner's Well No. 12
Date Work Began 9/25/98 Ended 11/23/98
Local Permit Agency San Bernardino County dept. of Health
Permit No. 1998080117 Permit Date

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet
No. 537229

DWR USE ONLY — DO NOT FILL IN
STATE WELL NO./STATION NO.
LATITUDE LONGITUDE
APN/TRS/OTHER

GEOLOGIC LOG

ORIENTATION (✓) X VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)
DEPTH TO FIRST WATER 321 (Ft.) BELOW SURFACE

DEPTH FROM SURFACE Ft.	to Ft.	DESCRIPTION *Describe material, grain size, color, etc.*
0	40	Top Soil, sand & gravel
40	60	sand & gravel
60	110	sand & gravel w/clay
110	130	Black & brown sand w/gravel & clay
130	140	sand
140	160	sand & gravel
160	170	sand & clay
170	200	sand, gravel & clay
200	230	fine sand & clay
230	240	fine sand,clay & little gravel
240	280	fine sand & little gravel
280	330	sand, gravel, little clay
330	360	Black sand & little gravel
360	400	consolidated sand
400	440	sand & gravel
440	450	sand
450	470	cemented sand
470	530	sand & some gravel
530	540	sand
540	570	consolidated sand
570	610	sand, gravel & clay
610	650	sand & gravel
650	680	sand & gravel
680	750	sand & gravel
750	770	sand
770	800	sand & gravel
800	810	consolidated sand
810	830	cemented sand w/ rock
830	850	sand & gravel
850	860	sand, gravel & clay

TOTAL DEPTH OF BORING 1120 (Feet)
TOTAL DEPTH OF COMPLETED WELL 1100 (Feet)

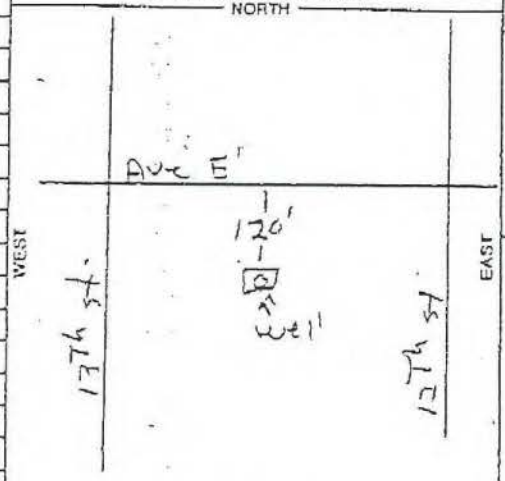
WELL OWNER

Name [redacted]
Mailing Address [redacted]
City Yucaipa Ca. 92399 STATE ZIP

WELL LOCATION

Address xxxxxxx
City Yucaipa
County San Bernardino
APN Book 31 Page 71 Parcel 301-112-07
or Township 2S Range 2W Section 4
or Latitude ___ DEG. ___ MIN. ___ SEC. NORTH Longitude ___ DEG. ___ MIN. ___ SEC. WE

LOCATION SKETCH



Illustrate or Describe Distance of Well from Landmarks such as Roads, Buildings, Fences, Rivers, etc.
PLEASE BE ACCURATE & COMPLETE.

ACTIVITY (✓)

X NEW WELL
MODIFICATION/REPAIR
___ Deepen
___ Other (Specify)
___ DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")

PLANNED USE(S) (✓)
___ MONITORING
WATER SUPPLY
___ Domestic
X Public
___ Irrigation
___ Industrial
___ "TEST WELL"
___ CATHODIC PROTECTION
___ OTHER (Specify)

DRILLING METHOD Reverse FLUID water

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH OF STATIC WATER LEVEL 321 (Ft.) & DATE MEASURED 10/8/98
ESTIMATED YIELD* 2500 (GPM) & TEST TYPE pump
TEST LENGTH 59 (Hrs.) TOTAL DRAWDOWN 60 (Ft.)
* *May not be representative of a well's long-term yield.*

CASING(S)

DEPTH FROM SURFACE Ft.	to Ft.	BORE-HOLE DIA. (Inches)	TYPE (✓) BLANK	SCREEN	CONDUCTOR	FILL PIPE	MATERIAL/ GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)
0	35	36	X		X		A53GB	30	3/8	
35	390	26	X				A53GB	16	5/16	
390	430	26		X			A53GB	16	5/16	std.flo.050
430	470	26		X			A53GB	16	5/16	fullflo.050
470	620	26		X			A53GB	16	5/16	std.flo.050
620	740	26		X			A53GB	16	5/16	fullflo.050

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft.	to Ft.	TYPE CEMENT (✓)	BENTONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
0	35	X			
0	300	X			
301	1100				6x14kel-p

ATTACHMENTS (✓)

___ Geologic Log
___ Well Construction Diagram
___ Geophysical Log(s)
___ Soil/Water Chemical Analyses
___ Other
ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief

NAME Layne Christensen Company
(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)
ADDRESS 11001 Etiwanda Ave., Fontana, Ca. 92337 CITY STATE ZIP
Signed [signature] WELL DRILLER/AUTHORIZED REPRESENTATIVE Date Signed 11-24-98
C-57 LICENSE NUMBER 510011

189560

DUPLICATE
Driller's Copy

Page 2 of 2
Owner's Well No. 12
Date Work Began 8/25/98, Ended 11/23/98
Local Permit Agency San Bernardino County Dept. of Health
Permit No. 19980801117 Permit Date

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet
No. 537230

DWR USE ONLY — DO NOT FILL IN
STATE WELL NO./STATION NO.
LATITUDE LONGITUDE
APN/TRS/OTHER

GEOLOGIC LOG

ORIENTATION (✓) X VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)
DEPTH TO FIRST WATER 321 (Ft.) BELOW SURFACE

DEPTH FROM SURFACE Ft.	to Ft.	DESCRIPTION *Describe material, grain size, color, etc.*
860	910	sand & gravel
910	950	sand, gravel & clay
950	960	gravel & sand
960	970	coarse sand & rocks
970	1050	gravel & sand fractured layer
1050	1060	gravel, sand & granule granite
1060	1090	granite, mostly crushed
1090	1120	granite, fractured

TOTAL DEPTH OF BORING 1120 (Feet)
TOTAL DEPTH OF COMPLETED WELL 1100 (Feet)

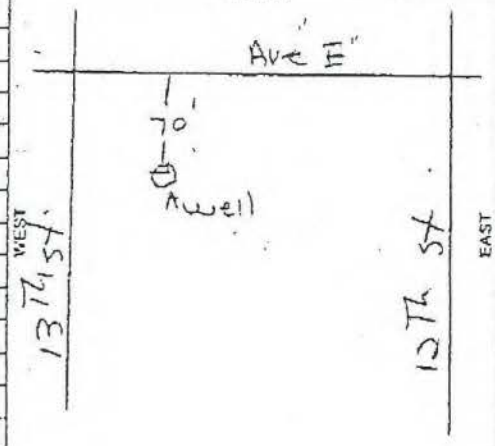
WELL OWNER

Name [redacted]
Mailing Address [redacted]
City Yucaipa State Ca Zip 92399

WELL LOCATION

Address
City Yucaipa
County San Bernardino
APN Book 31 Page 71 Parcel 301-112-07
or Township 2S Range 2W Section 4
or Latitude ___ DEG. ___ MIN. ___ SEC. NORTH Longitude ___ DEG. ___ MIN. ___ SEC. WE

LOCATION SKETCH



Illustrate or Describe Distance of Well from Landmarks such as Roads, Buildings, Fences, Rivers, etc. PLEASE BE ACCURATE & COMPLETE.

ACTIVITY (✓)

X NEW WELL
MODIFICATION/REPAIR
___ Deepen
___ Other (Specify)
___ DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")

PLANNED USE(S) (✓)

___ MONITORING
WATER SUPPLY
___ Domestic
X Public
___ Irrigation
___ Industrial
___ "TEST WELL"
___ CATHODIC PROTECTION
___ OTHER (Specify)

DRILLING METHOD Reverse FLUID water

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH OF STATIC WATER LEVEL 321 (Ft.) & DATE MEASURED 10/8/98
ESTIMATED YIELD* 2500 (GPM) & TEST TYPE pump
TEST LENGTH 59 (Hrs.) TOTAL DRAWDOWN 50 (Ft.)
* *May not be representative of a well's long-term yield.*

CASING(S)

DEPTH FROM SURFACE Ft.	to Ft.	BORE-HOLE DIA. (Inches)	TYPE (✓) BLANK	SCREEN	CONDUCTOR	FILL PIPE	MATERIAL/GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)
740	1090	26		X			A53GB	16	5/16	std.flo.050
1090	1100	26	X				A53GB	16	5/16	fullflo.050

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft.	to Ft.	TYPE CEMENT (✓)	BENTONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)

ATTACHMENTS (✓)

___ Geologic Log
___ Well Construction Diagram
___ Geophysical Log(s)
___ Soil/Water Chemical Analyses
___ Other
ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belie

NAME Layne Christensen Company (PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)
ADDRESS 11001 Etiwanda Ave., Fontana, Ca. 92337 CITY STATE ZIP
Signed [signature] (WELL DRILLER/AUTHORIZED REPRESENTATIVE) 510011 LICENSE NUMBER

San Bernardino County Department of Public Health
DIVISION OF ENVIRONMENTAL HEALTH SERVICES
385 North Arrowhead Avenue, San Bernardino, CA 92415-0160

387-4646 Sco
4666 Mike
Ford

WELL PERMIT

(Please Print)

RECEIVED
AUG 3 3 1998

#12

DO NOT FILL IN
Permit Number 1998080117
Expiration 8-25-99
FF
FA
SN

DO NOT FILL IN
Date 8-25-98
Amount $ 370.00
Receipt Number 14039
Paid By Layne Christensen Co.
Check #2712109

1. OWNER: Name [redacted]
Mailing Address [redacted]
City Yucaipa, ca. 92399 Zip 92399
Site Address
City Yucaipa Zip 92399
Telephone Number (909) 796-1901

2. WELL DRILLER: Layne Christensen Co.
Business Name
Sept 1998
Start Date
Completion Date

3. WELL USE (check):
☐ Community ☐ Horizontal ☐ Test
☐ Individual ☐ Monitoring ☐ Dairy
☐ Agricultural ☒ Public Water Supply ☐ Other

4. TYPE OF WORK (check):
☒ New ☐ Reconstruction ☐ Destruction

Items 6 through 10 to be estimated for new wells, exact for all other wel

5. ANNULAR SEAL: Seal Depth 300'
Furnished by: ☐ Owner ☒ Contractor
☒ [redacted] Conductor Dia. 30'X35' in., Wall (Gage)
☐ Sealing Material Concrete, Thickness 5"

6. DEPTH OF WELL (feet):
Proposed 1100' Existing
DIAMETER OF BORE (in.): 26"

7. CASING INSTALLED:
☒ Steel ☐ Plastic ☐ Other

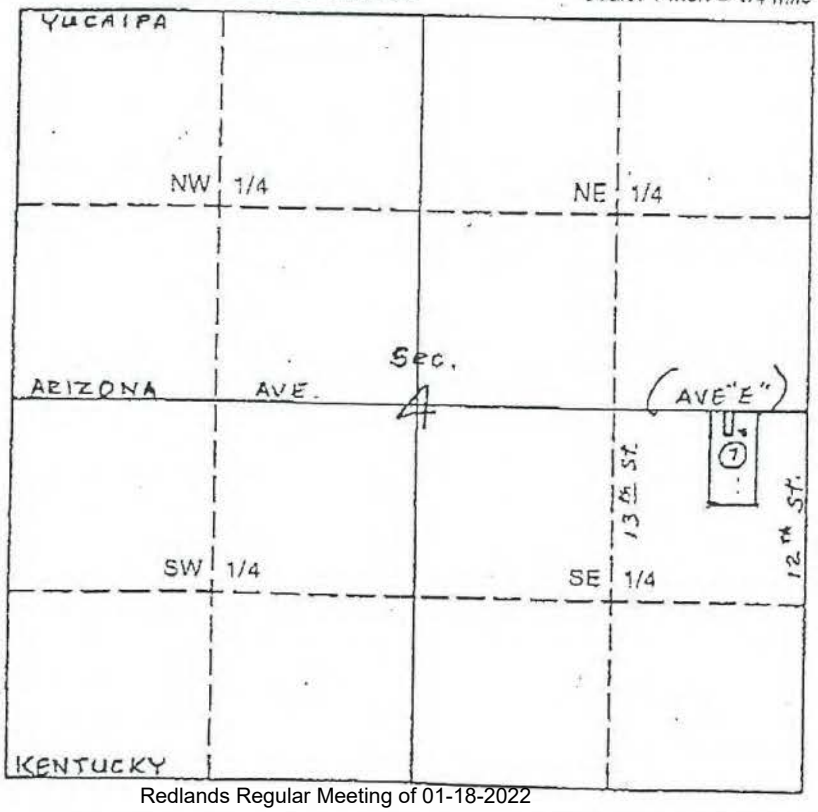
From (ft.)	To (ft.)	Dia. (in.)	Wall (Gage
0	1100	16	5/16

Gravel Pack: ☒ Yes ☐ No
From 300' to 1100' ft.

8. PERFORATIONS (if applicable):
From 390' to 1090' ft. 40' LBN

9. SEALED ZONES (if applicable):
From 0 to 300' ft.

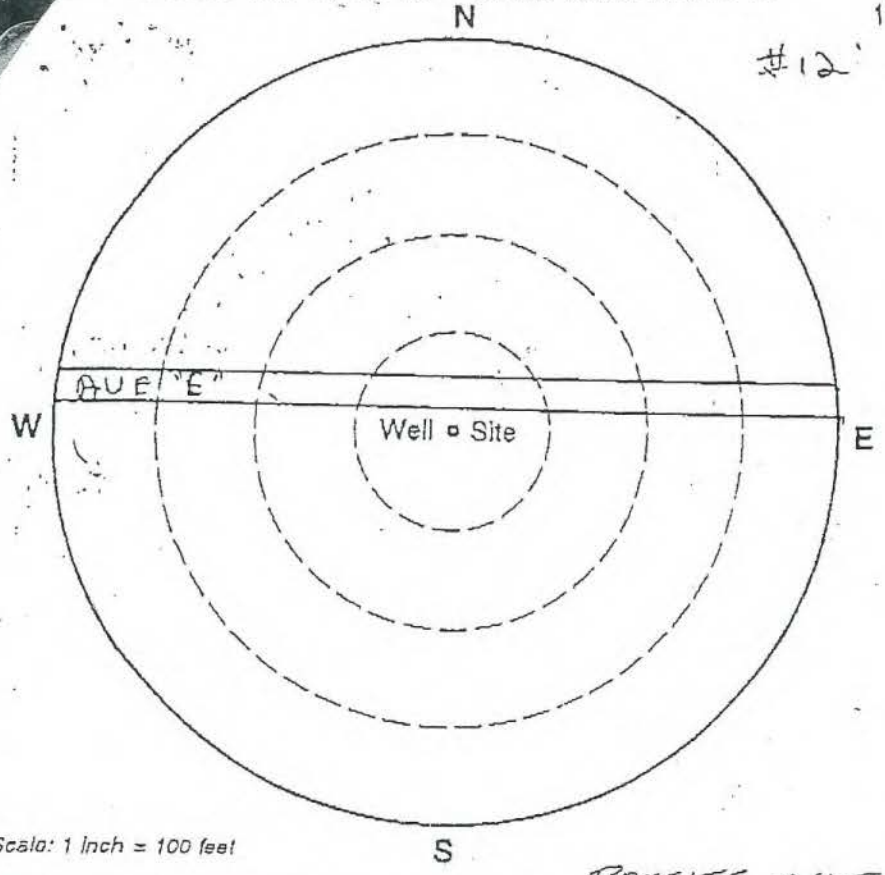
SECTION MAP - DO NOT FILL IN Scale: 1 inch = 1/4 mile



10. LOCATION INFORMATION: 30-E6
649-D4
(a) Township:
Tier 2S N/S Range 2W E/W Section 4
(b) Assessor's Parcel No. ~~301-112-06 + portions~~ 301-112-07
(c) Latitude and Longitude
Book 31 Page 71
Lat: ____ °, ____ ', ____ " N/S
Long: ____ °, ____ ', ____ " E/W
(d) Solid or Liquid Disposal Site within Two Miles
☐ Yes ☐ No
Location

DO NOT FILL IN
Seal
Cap
Check Valve
Electricals
Slab
Tag
Building & Safety Notified

11. PLOT PLAN: 1998080117



Scale: 1 inch = 100 feet

(a) In perspective to the well site, sketch and label the following items: well lot property lines, other wells *(include abandoned wells)*, sewage disposal systems *(sewers, septic tanks, leaching fields, seepage pits, cesspools)*, lakes and ponds, watercourses and animals or fowl kept.

(b) Indicate the distance, in feet, of any of the following which are within 200 ft. of the well site:

Other _____
Sewers _____
Septic tanks _____
Leaching fields _____
Seepage pits _____
Cesspools _____
Lakes and ponds _____
Watercourses _____
Animals or fowl kept _____

(c) ☐ None of the above are within 200 feet of the well si

PRESITE OK BY M. FARRELL 8.25.98

12. I have read this application and agree to comply with all laws regulating the type of work being performed.

C-57 Contractor's Signature Robert A. Ellis Date 8-21-98

County Registration No. 84 California License No. 510011

DISPOSITON OF PERMIT

(For Department Use Only)

☐ Sent to Water Agency for review.

☐ Water Agency conditions or recommendations attached.

☐ Denied _____

☒ Approved subject to the following:

A. ☒ Notify the Department, Safe Drinking Water Section (909) 387-4666, twenty-four (24) hours in advanc to make an inspection of the following operations:

- ☒ Prior to sealing of the annular space or filling of the conductor casing.
- ☒ After installation of the surface protective slab and pumping equipment.
- ☐ During destruction of wells, prior to pouring the sealing material.

B. ☒ Submit to the Department, within thirty (30) days after completion of work, a copy of:

- ☒ Water Well Driller's Report
- ☒ Bacterial Analysis
- ☒ Inorganic Chemical Analysis
- ☒ Radiological Analysis
- ☒ General Mineral
- ☒ Organic Chemical Analysis
- ☒ General Physical

Comments _____

25/2W-4L

WTWC Well 14

*The free Adobe Reader may be used to view and complete this form. However, software must be purchased to complete, save, and reuse a saved form.

File Original with DWR

State of California

Well Completion Report

Refer to Instruction Pamphlet

No. e054636

Page 1 of 1

Owner's Well Number 14

Date Work Began 11/27/2006 Date Work Ended 1/29/2007

Local Permit Agency San Bernardino Department of Environmental Health

Permit Number 2006111150 Permit Date 11/29/06

DWR Use Only – Do Not Fill In

State Well Number/Site Number

Latitude N Longitude W

APN/TRS/Other

Geologic Log

Orientation ◉ Vertical ○ Horizontal ○ Angle Specify

Drilling Method Reverse Circulation Rotary Drilling Fluid Bentonite mud

Depth from Surface Feet	to Feet	Description Describe material, grain size, color, etc
0	40	Top soil, sand & gravel.
40	70	Sand and gravel.
70	130	Sand, gravel and some clay.
130	150	Sand and clay.
150	195	Sand, clay and gravel.
195	230	Fine sand and clay.
230	275	Fine sand, clay and gravel.
275	309	Fine sand, and gravel.
309	340	Black sand and gravel.
340	390	Consolidated sand.
390	425	Sand and gravel.
425	450	Sand, gravel and some clay.
450	480	Sand.
480	515	Cemented sand.
515	540	Sand and gravel.
540	575	Sand, gravel and clay.
575	605	Consolidated sand.
605	640	Sand and gravel.
640	685	Sand, gravel and some clay.
685	715	Sand and gravel.
715	760	Sand.
760	795	Sand and gravel.
795	813	Consolidated sand.
813	845	Sand and gravel.
845	881	Cemented sand and rock.
881	910	Coarse sand, gravel, and clay.
910	964	Coarse sand, rocks.
964	1,030	Gravel, coarse sand.
1030	1,090	Gravel, sand, rocks.
1090	1,120	Granite, mostly crushed.

Total Depth of Boring 1120 Feet

Total Depth of Completed Well 1100 Feet

Well Owner

Name [redacted]

Mailing Address [redacted]

City Yucaipa State CA Zip 92399

Well Location

Address 32419 Avenue E

City Yucaipa County San Bernardino

Latitude Deg. Min. Sec. N Longitude Deg. Min. Sec. W

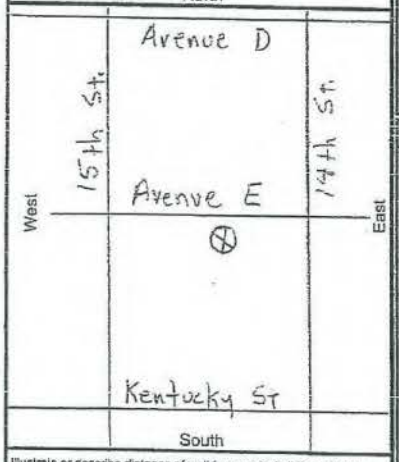
Datum Decimal Lat. Decimal Long.

APN Book 0301 Page 132 Parcel 85

Township 2 S Range 2 W Section 4

Location Sketch

(Sketch must be drawn by hand after form is printed.)



Illustrate or describe distance of well from roads, buildings, fences, rivers, etc. and attach a map. Use additional paper if necessary. Please be accurate and complete.

Activity

◉ New Well
○ Modification/Repair
○ Deepen
○ Other
○ Destroy
Describe procedures and materials under "GEOLOGIC LOG"

Planned Uses

◉ Water Supply
☑ Domestic ☑ Public
☐ Irrigation ☐ Industrial
○ Cathodic Protection
○ Dewatering
○ Heat Exchange
○ Injection
○ Monitoring
○ Remediation
○ Sparging
○ Test Well
○ Vapor Extraction
○ Other

Water Level and Yield of Completed Well

Depth to first water 320 (Feet below surface)

Depth to Static Water Level 320 (Feet) Date Measured 01/29/2007

Estimated Yield * 1,506 (GPM) Test Type Constant Rate

Test Length 16.0 (Hours) Total Drawdown 66 (Feet)

*May not be representative of a well's long term yield.

Casings

Depth from Surface Feet	to Feet	Borehole Diameter (Inches)	Type	Material	Wall Thickness (Inches)	Outside Diameter (Inches)	Screen Type	Slot Size if Any (Inches)
0	50	42	Conductor	Low Carbon Steel	.3125	30		
0	410	26	Blank	Low Carbon Steel	.3125	16		
410	1,090	26	Screen	Low Carbon Steel	.3125	16	Louver	0.050
1,090	1,100	26	Blank	Low Carbon Steel	.3125	16		

Annular Material

Depth from Surface Feet	to Feet	Fill	Description
0	50	Cement	10.5 sack
0	300	Cement	10.5 sack
300	1,100	Filter Pack	Tacna 8x20

Attachments

☐ Geologic Log
☐ Well Construction Diagram
☐ Geophysical Log(s)
☐ Soil/Water Chemical Analyses
☐ Other

Attach additional information, if it exists.

Certification Statement

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief

Name Layne Christensen Company (Person, Firm or Corporation)

11001 Etiwanda Avenue (Address) Fontana (City) CA (State) 92337 (Zip)

Signed [signature] (C-57 Licensed Water Well Contractor) 5-8-2007 (Date Signed) 510011 (C-57 License Number)

DWR 188 REV. 1/2006

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

23191

WELL No. 14

San Bernardino County Department of Public Health
DIVISION OF ENVIRONMENTAL HEALTH SERVICES
385 North Arrowhead Avenue - 2nd Floor, San Bernardino, CA 92415-0160

WP 3371
SR 15216

DO NOT FILL IN
Permit Number 20061111150
Expiration 05-29-07
SN

K Weeds Presidio

WELL PERMIT

(Please Print)

Presidio D.K. Water Dist

Owner's Well No. 14

DO NOT FILL IN
Date 11-29-06
Amount $ 493.00
Receipt Number 59738
Paid by LAYNE CHRISTENSEN

1. OWNER: Name [redacted]
Mailing Address [redacted]
City Yucaipa Zip 92399
Site Address 32419 Ave E
City Yucaipa Zip 92399
Telephone Number (909) 790-1901

2. WELL DRILLER: Layne Christensen Company (Business Name)
11-27-2006 (Start Date) 2-27-2006 (Completion Date)

3. WELL USE (check):
☐ Agricultural ☐ Horizontal ☐ Test
☐ Cathodic ☐ Monitoring/Observation ☐ Dairy
☐ Ind/Domestic ☒ Community/PWS/City ☐ Other

4. TYPE OF WORK (check):
☒ New ☐ Reconstruction ☐ Destruction

Items 6 through 9 to be estimated for new wells, exact for all other wells

5. ANNULAR SEAL: Seal Depth 50 ft.
Furnished by: ☐ Owner ☒ Contractor
☐ Driven Conductor Dia. 30 in., Wall (Gage) .375
☐ Sealing Material 10.5 sack, Thickness 6 in.

6. DEPTH OF WELL (feet):
Proposed 1100 Existing
DIAMETER OF BORE (in.): 26

7. CASING INSTALLED:
☒ Steel ☐ Plastic ☐ Other

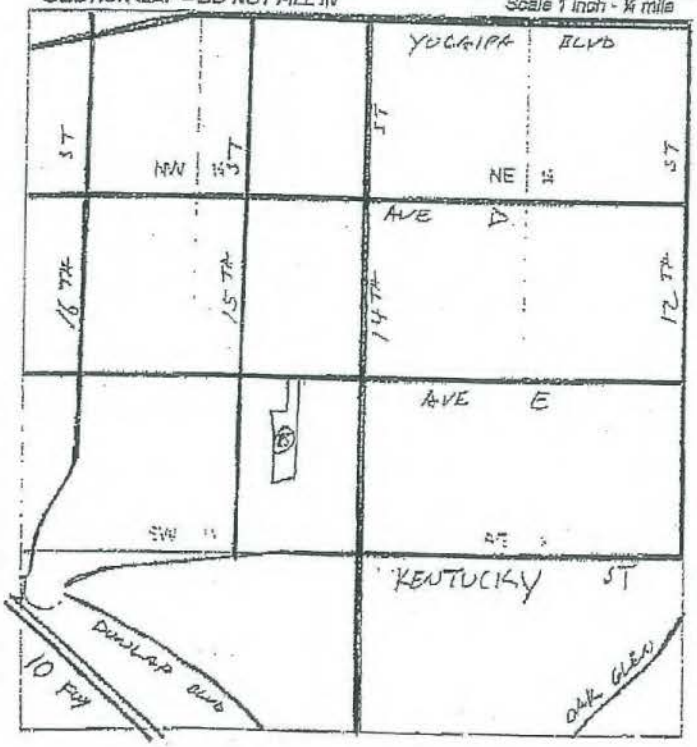
From (ft.)	To (ft.)	Dia. (in.)	Wall (Gage)
0	400	16	.312

Gravel Pack: ☒ Yes ☐ No
From 300 to 1100 ft.

8. PERFORATIONS (if applicable):
From 400 to 1100 ft.

9. SEALED ZONES (if applicable):
From to ft.

SECTION MAP – DO NOT FILL IN Scale 1 inch = ¼ mile



10. LOCATION INFORMATION
(a) Assessor's Parcel No. 0301132850000
(b) Consulting Firm & Project Number:
(c) Latitude and Longitude (If Known)
Lat: ° ' " N/S
Long: ° ' " E/W
(d) Township:
Tier 2 N/S Range 2 E/W Section 4
Map Info 764 649 C4

DO NOT FILL IN
Seal
Cap
Check Valve
Electricals
Slab
Tag
Building & Safety Notified

[redacted]

fly	22'	235-240 very rough	
DC	27' 10"	258-270 rough	
DC	21' 11"		
	71' 9"		
DC	27' 3"	10. 350' 0"	24 630' 1"
	44' 0"	21' 7"	21' ±
DC	17' 1"	11. 371' 7"	651' 3"
	116' 1"	21' 7"	21' 6"
DC	17' 3"	12. 393' 2"	25 673' 2"
	133' 4"	21' 8"	
D	21' 7"	13. 414' 10"	oil #2
1.	154' 11"	21' 7"	
	21' 8"	14. 436' 5"	static 273
2	176' 7"	21' 7"	
	21' 7"	15. 458' 0"	
3.	198' 2"	21' 8"	
	21' 7"	16. 479' 8"	
4.	219' 7"	21' 8"	
	21' 7"	17. 501' 4"	
5.	241' 4"	21' 7"	
	22' 5"	18. 522' 11"	
6.	263' 7"	21' 6"	
	21' 7"	19. 544' 5"	
7.	285' 4"	21' 5"	
	21' 6"	20. 565' 10"	
8.	306' 10"	21' 7"	
	21' 7"	21. 586' 5"	
9	328' 5"	21' 7"	
	21' 7"	22. 608' 0"	
10	350' 0	22' 1"	

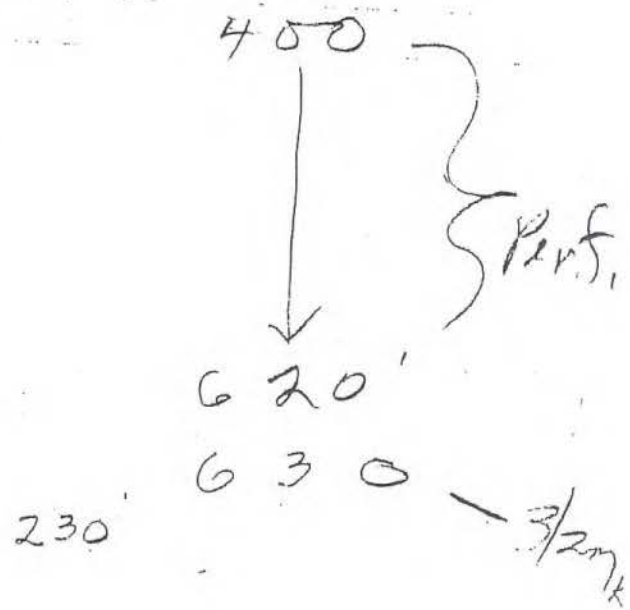
[redacted]

0-50	conductor
50'-80'	coarse sand and fine gravel
80'-109'	sand no clays.
109'-115'	gray clay (loose) & fine gravel
115'-125	brown clay (loose) coarse sand 70% fine gvl
125'-132'	sticky brown clay & sand
132-135	sand (coarse) very loose clay 4'
135-148	sticky brown clay sand & gravel (rough drilling
148-173	sticky brown clay some sand & fine gravel, firm spots
173-175	sand & little clay
175-180	sand & gravel with clay streaks.
180-183	sticky brown clay & coarse sand.
183-190	very sticky clay & fine sand & till some gravel.
190-192	loose clays fine & coarse sand.
192-200	very sticky brown clay & sand some small gravel
200-215	coarse sand & loose clay some gravel.
215-225	sticky brown clay & sand & gravel.
225-239	coarse sand & loose clay
239-250	sticky clay sand & gravel (fragmented)
250-258	coarse sand & loose clay
258-280	coarse sand & fine gravel little clay
280-283	coarse sand & gravel increase in sticky clay.
283-308	coarse sand & gravel very loose clay.
308-338	sticky clay & coarse sand
338-341	very sticky clay some sand & gravel.
341-346	sticky clay & coarse sand.
346-353	sand & small fragmented gravel, little clay
353-370	coarse sand very uniform & clay. some gravel.
370-393	increase in clay very sticky
392-400	very sticky clay some sand & gravel (40%) till

Redlands Regular Meeting of 01-18-2022

Redlands Regular Meeting of 01-18-2022

[illegible]-445	sticky loose clay sand & gravel
445-470	loose clay & coarse sand (80%)
470-473	sticky clay sand & gravel
473-481	coarse sand & gravel loose clay
481-485	very tight sticky clay & coarse sand.
485-494	clay & coarse sand. (Clay is loose & sticky)
494-545	coarse sand fragmented gravel some clay
545-547	coarse sand gravel (jagged) sticky clay
547-560	coarse sand gravel little loose clay. a lot of very jagged white quartz
560-566	coarse sand & gravel little clay very rough drilling very tight
566-573	sticky clay coarse sand and fragmented gravel.
573-583	loose sticky clay coarse sand & gravel.
583-587	coarse sand some gravel (fine) loose sticky clay
587-590	coarse sand spotty gravels tight sticky clay
590-608	coarse uniform sand and loose clay (20%) fine fragmented gravels
608-648	coarse uniform sand sticky clay little gravel
648-673	coarse sand uniform little of no clay very firm.



Page 315 of 1274

TLX: 62933889
TWX: 510-601-5891

Water Well Redevelopers, Inc.

1365-B DYNAMICS STREET
ANAHEIM, CALIFORNIA 92806

(714) 996-1462
(714) 779-2425

VIDEOLOG FIELD REPORT

OWNER [redacted]
[redacted]
Los Angeles, Ca. 90004

WELL LOCATION 1/2 mile West of Oak Glen Rd., on Davies Ranch Rd., San Bernardino, Ca.

WELL NO. 6 TECHNICIAN BC UNIT NO. 1 DATE 4-1-88

WELL HISTORY

Casing: 6" - - 0' to 142'+ Perforations: 25' to 142'+

(Per VIDEOLOG)

Drilled 1979 By Jack Jones Type C-Tool Perf. Type Drilled Holes

Pump: Type DWT Column 4" x 130' Bowls 4" x 8' Depth of Intake 138'

Remarks

VIDEOLOG INFORMATION

SWL 56' TWD 142' Water Visibility GOOD Date 4-1-88

Camera COLOR Tape Format VHS Speed SP Make TDK

Videolog X Revideo ____ Reruns ____ PC Log to Dickinson / Hackers Pump Tape to Dickinson

REMARKS

No camera centering device was used during survey, due to (minimum size) 6" casing diameter. No drag was noted while descending.

8" steel casing is visible from 0' to 5', where a straight reduction to 6" PVC casing exists.

The highly reflective white PVC produces glare and requires viewing from behind the saturated ring of light in front of the camera.

Possible roots entering through perforations at 85'.

Organic material can be seen entering through perforations, when disturbed by the camera, see 74', 86' and 100' to 200'. (Also note excessive material being drawn into well bore while camera more rapidly ascends).

Dark stains can be seen on casing adjacent to where bowls setting 130' to 135'.

The casing appears clean and drilled perforations open throughout the survey (i.e., 5' to 141

Casing, reduction, joints and perforations all appear clean and in normal condition.

The entrance of organics along with specific capacity loss would indicate a coagulation of the surrounding formation.

well #2 YVWD #2.

DUPLICATE
Retain this copy

WATER WELL DRILLERS REPORT

(Sections 7079, 7080, 7081, 7082, Water Code)

THE RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES

Do Not Fill In

No 32912

State Well No.

Other Well No.

2S/2W-11B1

(1) OWNER: Valley

Name [redacted]

Addres

(2) LOCATION OF WELL:

County San Bernardino Owner's number, if any 2

Township, Range, and Section NW ¼ of NE ¼ T 2S R 2W Sec. 11

Distance from cities, roads, railroads, etc. Ave. F between 5th & 6th Streets- Yucaipa

(3) TYPE OF WORK *(check):*

New Well ☒ Deepening ☐ Reconditioning ☐ Destroying ☐

If destruction, describe material and procedure in Item 11.

(4) PROPOSED USE *(check):*

Domestic ☒ Industrial ☒ Municipal ☒
Irrigation ☐ Test Well ☐ Other ☐

(5) EQUIPMENT:

Rotary ☐
Cable ☒
Other ☐

(6) CASING INSTALLED:

STEEL: OTHER:

SINGLE ☒ DOUBLE ☐

From ft.	To ft.	Diam.	Gage or Wall	Diameter of Bore	From ft.	To ft.
0	614	16"	¼"			
	638	16"	5/16"			

If gravel packed

Size of shoe or well ring: 16x12x1" Bit Steel Shoe Steel:

Describe joint All joints butt weld

(7) PERFORATIONS OR SCREEN:

Type of perforation or name of screen Mills

From ft.	To ft.	Perf. per row	Rows per ft.	Size in. x in.
350	563	8	1	2½ x 7/16"
613	625	8	1	2½ x 7/16"

(8) CONSTRUCTION:

Was a surface sanitary seal provided? Yes ☒ No ☐ To what depth 40 ft.

Were any strata sealed against pollution? Yes ☐ No ☒ If yes, note depth of strata

From ft. to ft.

From ft. to ft.

Method of sealing Concrete grout installed between casing and formation

(9) WATER LEVELS:

Depth at which water was first found, if known 308 ft.

Standing level before perforating, if known 308 ft.

Standing level after perforating and developing 308 ft.

(10) WELL TESTS: Will be made by Owner

Pump test made? Yes ☐ No ☐ If yes, by whom?

gal./min. with ft. drawdown after hrs.

Temperature of water Was a chemical analysis made? Yes ☐ No ☐

Was electric log made of well? Yes ☐ No ☐ If yes, attach copy

(11) WELL LOG:

Total depth 638 ft. Depth of completed well 638 ft.

Formation: *Describe by color, character, size of material, and structure*

ft. to	ft.	
0	128	Brown clay with sand and gravel
128	190	Loose gravel, some brown clay
190	284	Brown clay, gravel and boulders
284	386	Gravel and boulders, some brown clay
386	414	Light brown clay with gravel embedded
414	430	Loose rough gravel
430	475	Hard tight gravel with trace of gray clay
475	512	Brown and gray clay with gravel embedded
512	563	Rough gravel some g clay
563	613	Tough brown clay
613	619	Gravel, some brown clay
619	638	Tough brown clay

Bob Thompson

Work started Jan. 14 67, Completed Mar. 21, 1967

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME KIRKLAND WELL SERVICE
(Person, firm, or corporation) (Typed or printed)

Address 32291 Dunlap Blvd.
Yucaipa, Calif.

[SIGNED] K. Kirkland
(Well Driller)

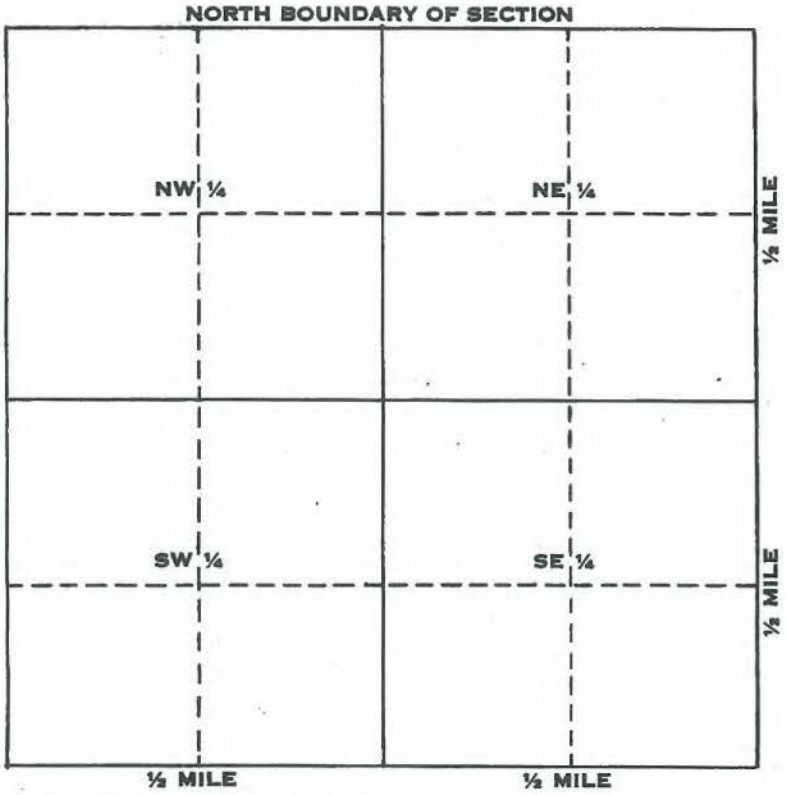
License No. 168847 Dated Mar. 22, 19 67

SKETCH LOCATION OF WELL ON REVERSE SIDE

DWR 188 (REV. 9-65)

56291-950 10-65 50M TRIP ① △ OSP

WELL LOCATION SKETCH

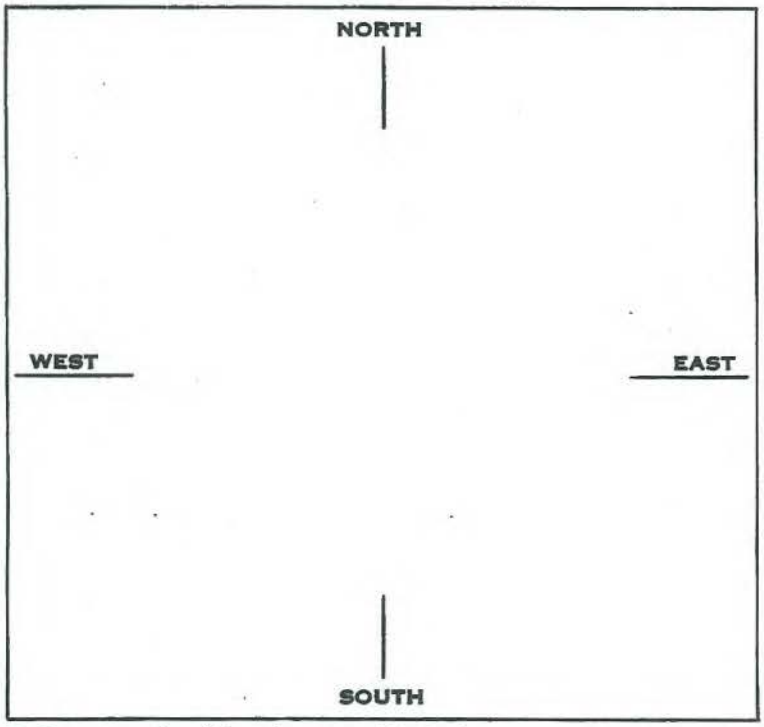


Township 2S N/S

Range 2W E

Section No. 11

A. Location of well in sectionized areas.
Sketch roads, railroads, streams, or other features as necessary.



B. Location of well in areas not sectionized.
Sketch roads, railroads, streams, or other features as necessary.
Indicate distances.

#2

YUCAIPA WATER COMPANY NO. 1
LOG OF WELL NO. 2
S.R. No. 36-01850

LOCATION: Avenue F, between Fifth and Sixth Streets
NW¼ of NE¼, Sect. 11, T2S, R2W, SBB&M

DRILLED BY: Unknown YEAR: 1921

Depth From	Depth To	Material
0	155'	Clay & Gravel
155'	172'	Gravel — No cuts
172'	202'	Clay & Gravel
202'	240'	Gravel
240'	260'	Boulders — 512 cuts between 225' & 280'
260'	289'	Gravel
289'	300'	Clay & Gravel
300'	315'	Gravel — 152 cuts
315'	360'	Clay & Gravel
360'	378'	Gravel — 144 cuts
378'	398'	Clay & Gravel
398'	464'	Gravel — 320 cuts between 398' & 438' top of Starter

Cuts are about 1/2" wide x 4" long, and are made 8 per foot.

Standard Rig

Note: It [illegible] Spring of 1992 and [illegible]

1S/2W-30N1

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC HEALTH

No. 5

WELL DATA

(1) Place and Owner [redacted]

(2) Source of Information Data on File

Collected by [redacted] Date 15 June 62

(3) Number or Name	#5
Date drilled	Jan. 24, 1946
(4) Location: Neighborhood	Residential
Size of lot	
Distance to: Sewer	No sewers in area
Sewage disposal	Cesspool or septic tank
Abandoned well	
Nearest property line	
(5) Housing: Type	Metal
Condition	Good
Pit depth *(if any)*	None
Floor *(material)*	Concrete
Drainage	Yes
(6) Well Depth	508'
(7) Casing: Depth	465'
Diameter	16" to 465' depth
Kind	Steel-10 ga Double
Height above floor	4"
Distance to highest perforations	
Surface sealed *(yes or no)*	Yes
Gravel pack *(yes or no)*	No
Second casing depth	
Second casing diameter	
Annular seal *(depth)*	
(8) Impervious Strata: Thickness	
Penetrated Depth to	
(9) Water Levels: Surface	251.9
Depth to Static	
When Pumping	
(10) Pump: Make	Layne & Bowler
Type	D.W. Turbine
Capacity, g.p.m.	750'
Lubrication	Oil
Power	N Gas
Auxiliary power	No
Control	
Discharge location	Above Ground
Discharge to	Mains
(11) Frequency of Use	Cont.
(12) Flood Hazard	No
(13) Remarks and Defects (Use other side if necessary)	

(14) Show well log on other side.

COPY

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC HEALTH

(REV. 1-1-51)
FORM SE-1402

1S/2W-36N1

Well 5
Rec. #36 01853

WELL RECORD

[redacted]

Company

Location Cedar Avenue between 3rd & 4th Streets Elev 2560'

SW 1/4 SW 1/4 Township 1S Range 2W Section 36

PIT

Date drilled January 1946 By Eula Wells Roberts
Depth 508' Diameter Packed

CASING

Diameter 16" Length 465' Gauge 10 ga. - double
" " " "
Perforated interval

COLUMN

Diameter 10" Length 310' Gauge
" 8" " 40' "

Tube diameter Shaft diameter

BOWLS

Date installed March 26, 1963 By Turley Pump Co.
Make Peerless Model 10 MA Serial no. R58283
Size 10" Stages 14 Length Suction 10'

DESIGN PERFORMANCE

GPM	700	RPM	1760	TDH	550	HP	120
GPM	675	RPM	1760	TDH	555	HP	
GPM	600	RPM	1760	TDH	594	HP	

ENGINE

Date installed February 1958 By Wilson Engine Service
Type Nat. Gas Make Climax Model K67 Serial no. 53576
Cu. in. 1616 B & S 7 x 7" HP 125 RPM 880

GEAR

Date installed February 1958 By Ray Roberts
Make U.S. Model 1.2 Serial no. 1138599 HP 150
Shaft Spicer WL 71 Universals

Notes: March 1963 - All new shaft bearings, strainer spiders, head shaft & tension section.

SBVMWD FORM JK-10C

1S/2W-36N1

REDEVELOPING
VIDEOLOGGING
PHOTOLOGGING

Water Well Redevelopers, Inc.

5583 PEBBLE BEACH LANE
YORBA LINDA, CALIFORNIA 92686

TELEPHONE
(714) 996-1462
(714) 779-2425



VIDEOLOG FIELD REPORT

OWNER [redacted]

WELL LOCATION Approximately
34586 Cedar St.
Yucaipa, Calif.

WELL NO. 5

DATE OF VIDEOLOG 12-5-83 BY B.J.C.

WELL HISTORY

Casing: 16" -- 0' to 508'

Perforations: 190' to 199', 220' to 227', 236' to 245', 254' to 355', 366' to 400'& 422' to 470'.

Drilled 1946 By Flula Wells

Type C-Tool Perf's Mills Knife.

Depth of Pump Setting: Column 350' Bowls 10' Suction 10'

Remarks All out for service.

'RING SURVEY

Standing Water Level 174'

Depths Televised 0' to Present Bottom.

Total Well Depth 490'

Water Conditions Good

VIDEO

VTR Beta SETTING 1 TAPE: On File ____ Customer ____ Dealer X None ____

POLAROID SUPPLEMENTS None.

REMARKS

Camera centering guide set at 14"O.D. during survey. No drag noted while camera descended.

Sample mills knife cuts are visible at 2'.

Casing and perforations appear clean and in normal condition from 174' (static) to 400'. Some perforation plugging and or restriction can be seen from 400'± to 470', end of casing.

Open hole from 470' to 490'(bottom).

Perforations on joint 328' and 433'.

Lost airline visible at 475' and 481'.

Originators of SONAR-JET®
"WELL CLEANING WITH SOUND"

Downhole Inspection
"TELEVISION AND STEREO"

San Bernardino Valley Municipal Water District
1350 SOUTH "E" STREET - P. O. BOX 5906 - SAN BERNARDINO, CALIFORNIA 92412 - (714) 824-2200
(714) 889-0433

RECEIVED

September 9, 1976

[redacted]

Dear Sir:

On behalf of the SBVMWD I would like to thank you for your assistance this summer with our vertical control project.

All of our surveys were run to determine the mean sea elevation of the measuring point for each well. All of our work was done within third order limits.

The following are the wells surveyed and their elevation:

Well No. 4	2346.36 ft.
Well No. 5	2561.98 ft.
Well No. 7	2711.00 ft.
Well No. 8	2364.18 ft.
Well No. 11	2387.92 ft.
Well No. 12	2379.15 ft.
Well No. 13	3180.95 ft.
Well No. 14	3341.77 ft.
Well No. 24	2434.71 ft.
Well No. 33	3127.80 ft.

Thank you again.

Sincerely,

Robert Martin
Water Resources Aide

RM:as

Directors and Officers
FRED OLDFIELD, JR. LE ROY HOLMES WILLIAM R. LEONARD LLOYD D. YOUNG [illegible] JACK A. [illegible]

1S/2W-36R1 No. 7

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC HEALTH

WELL DATA

(1) Place and Owner [redacted]

(2) Source of Information Data on File

Collected by [redacted] Date 15 June 62

(3) Number or Name	#7
Date drilled	October 18, 1950
(4) Location: Neighborhood	
Size of lot	
Distance to: Sewer	No sewer in area
Sewage disposal	Cesspool or septic tank
Abandoned well	
Nearest property line	
(5) Housing: Type	
Condition	
Pit depth *(if any)*	
Floor *(material)*	
Drainage	
(6) Well Depth	695'
(7) Casing: Depth	665'
Diameter	14"
Kind	1/4" Steel
Height above floor	4"
Distance to highest perforations	
Surface sealed *(yes or no)*	Yes
Gravel pack *(yes or no)*	Yes
Second casing depth	
Second casing diameter	
Annular seal *(depth)*	
(8) Impervious Strata Penetrated: Thickness	
Depth to	
(9) Water Levels: Depth to Surface	383.7
Static	
When Pumping	
(10) Pump: Make	Layne & Bowler
Type	Turbine-L.S.
Capacity, g.p.m.	450
Lubrication	Oil
Power	N Gas
Auxiliary power	No
Control	
Discharge location	Above ground
Discharge to	Mains
(11) Frequency of Use	Cont.
(12) Flood Hazard	No
(13) Remarks and Defects (Use other side if necessary)	

(14) Show well log on other side.

COPY

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC HEALTH

18765 3-50 2M ① SPO

(REV. 1-1-51)
FORM SE-1402

[redacted]

1S/2W-36J #7

LOG OF WELL NO. 7
S.R. No. 36-01855

LOCATION: Cedar and Adams Streets
SE¼ of SE¼, Sect. 36, T1S, R2W, SBB&M

DRILLED BY: E. J. Brockman, Drilling Contractor DATE: Oct. 18, 1950
R. 1, Box 150, Colton, Calif.

Depth From	Depth To	Material
0	18'	Decomposed granite boulders
18'	120'	Sand and rock
120'	184'	Sand and clay with some rock
184'	195'	Clay and rock
195'	223'	Red clay
223'	298'	Sandy clay
298'	315'	Sand and gravel
315'	328'	Sandy clay
328'	340'	Sand and gravel
340'	395'	Sandy clay
395'	415'	Rock and clay
415'	460'	Sandy clay
460'	475'	Rock and clay
475'	514'	Sand
514'	520'	Sandy clay
520'	530'	Cemented gravel
530'	540'	Sandy clay
540'	545'	Sand
545'	552'	Granite ledge
552'	568'	Sandy clay
568'	580'	Sand
580'	584'	Sandy clay
584'	589'	Sand
589'	594'	Clay and rock
594'	605'	Sandy clay
605'	625'	Cemented gravel
625'	635'	Clay and rock
635'	660'	Soft sand clay
660'	688'	Clay and rock
688'	695'	Rock

Hole was reamed to 20" diameter to a depth of 665' and 14" x ¼" wall casing installed to 665'.

1S/2W-36R1

Well 7

WELL RECORD

[redacted]

Company _____

Location Cedar & Adams # 36 01867

SE 1/4 SE 1/4 Township 1 S Range 2 W Section 36

PIT

Date drilled Oct. 1950 By E.S. Brockman

Depth 695' Diameter 30" Packed 665'

CASING

Diameter 14 Length 665 Gauge 1/4"

" " "

Perforated interval _____

COLUMN

Diameter 6 Length 500 Gauge STD

" " "

Tube diameter 2½ Shaft diameter 1½

BOWLS

Date installed 3-25-57 By Roberts

Make Layne & Bowler Model ELL - M Serial no. _____

Size 12 Stages 12 Length _____ Suction 10' of 6"

DESIGN PERFORMANCE

3/25/57

GPM	450	RPM	1650	TDH	423	HP	79
GPM		RPM		TDH		HP	
GPM		RPM		TDH		HP	

ENGINE

Date installed _____ By _____

Type _____ Make Waukesha Model Wak R-25A Serial no. 1018788

Cu. in. 1197 B&S 6 1/4 X 6½ HP 96 RPM 900

GEAR

Date installed _____ By _____

Make US Model 1.2 Serial no. 1101571 HP 110

Shaft Delte WI. 61 Universals _____

Notes: 1 CK 189 S Gas Engine Starter - Serial - 1016352

SBVMWD FORM JK-10C

15/2W-36R1

695' 14" DEPTH DIAM. DRILLED

San Bernardino Valley Water Conservation District
REDLANDS, CALIFORNIA

WELL NO.
LOCATION NO. Yuc. W. Co. No. 1.47
36-01855

WELL RECORDS

USE
LOG AVAILABLE Yes
LOCATION 80' n/o Cedar, 40' w/o Adams

OWNER [redacted] - Well No. 20 (old) (new) No. 7
EQUIPMENT
DESCRIPTION OF M. P. Top of casing
ELEV. M. P.
ELEV. G. S. 2710
LEVELS BY

DATE	OBSERVER	DEPTH TO WATER	ELEVATION OF WATER	REMARKS
1950				
11-03	Hicks	316.7	2393.3	To top casing
1951				
3-03	Serber	317.1	2392.9	
4-04	Hicks	317.2	2392.8	To top casing
5-15	Serber	319.7	2390.3	
1952				
4-11	Hicks	325.7	2384.3	New bench plug-outlet pipe
4-11	Edison Co.	325	2385	1.65' above pump base
1953				
3-17	Serber	328.6	2381.4	
1955				
3-28	USGS	334.8	2375.2	
8-9	Edison Co.	367.2	2342.8	
8-9	"	497.7	2212.3	Pumping 434 GPM
9-17	USGS	480±	2230	
1957				
4-2	Dibble	346.6	2363.4	2" pipe East side
1958				
4-28	Foster	466.6	2243.4	Pumping
1960				
3-9	Hanstad	383.7	2326.3	Idle
1961				
4-24	Stafford	440.6	2269.4	Pumping
1963				
3-20	SBCFCD	383.7	2322.3	
1967			2328	

[redacted]

25/2W-20 1 #8

LOG OF WELL NO. 8
S.R. No. 36-01856

NOT #8

LOCATION: Hill Ranch
NW¼ of SW¼, sect. 25, T1S, R2W, SBB&M
DRILLED BY: E. J. Brockman YEAR: March 3, 1951 completed
R. 1, Box 150
Colton, Calif.

Depth From	Depth To	Material
0	4'	Top Soil
4'	50'	Sand and rock
50'	85'	Sandy clay
85'	105'	Sand and small gravel
105'	178'	Sandy clay
178'	222'	Sand and coarse gravel
222'	260'	Hard clay
260'	274'	Sand and small gravel
274'	300'	Sandy clay
300'	306'	Sand
306'	340'	Clay and rock
340'	354'	Rock and Sand
354'	415'	Sandy clay
415'	425'	Sand
425'	478'	Sand with streaks of clay
478'	506'	Hard clay

Hole was reamed to 16" to 363' and 10" x 3/16" casing installed. 10" casing was perforated with 3/16" x 4" slots 4 to the round every foot.

Hole was reamed to 10" from 363' to 506' and 6" x 1/8" casing installed. 6" casing was perforated all the way with 3/16" x 4" slots 4 to the round, one round every foot.

Hole was gravel packed with 3/8" gravel all the way.

Static water level 115'

Well on the pump test pumped the following capacities:

from 143' - 162 GPM
" 166' - 279 GPM
" 178' - 342 GPM

Rotary Rig

2S/2W-2P1 Well 8

WELL RECORD

Rec. #36 01997

[redacted]

Company

Location 8th Street South of Washington Drive Elevation = 2360'

NE 1/4 NE 1/4 Township 2 S Range 2 W Section 3

PIT

Date drilled 1959 By

Depth 750' Diameter Packed 500'

CASING

Diameter 16" Length 500' Gauge 10 ga.

" " "

Perforated interval

COLUMN

Diameter 8" Length 400 Gauge STD

" " "

Tube diameter Shaft diameter

BOWLS

Date installed March 18, 1963 By Turley Pump Company

Make Model 10 LA Serial no. R 58225

Size 10" Stages 11 Length Suction 10'

DESIGN PERFORMANCE

GPM 450	RPM 1760	TDH 400	HP 55
GPM	RPM	TDH	HP
GPM	RPM	TDH	HP

ENGINE

Date installed 3-63 (from #3 well) By

Type Elect. Make U.S. Model HU Serial no. 1251837

Cu. in. B & S HP 60 RPM 1800

GEAR

Date installed By

Make Model Serial no. HP

Shaft Universals

Notes: Pump test July 25, 1966

Pump Head Jacuzzi - Pump as shown

[redacted]

LOG OF WILDWOOD CANYON WELL
S.R. No. 36-01864

2S/1W-8E1

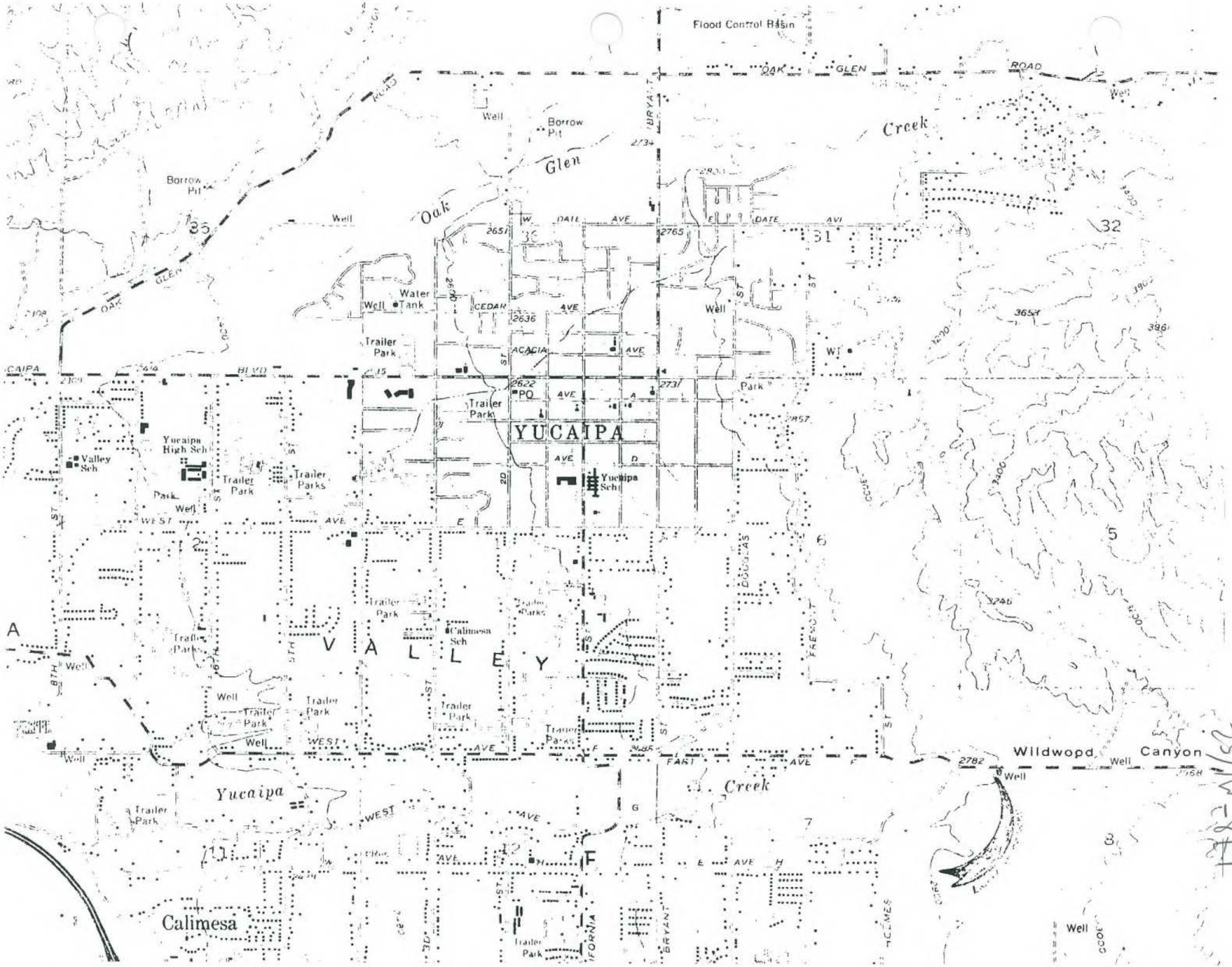
Well -15

LOCATION: Wildwood Canyon
NW¼ of NW¼, Sect. 8, T2S, R1W, SBB&M

DRILLED BY: Unknown YEAR: Unknown

Depth From	Depth To	Material
0	85'	Gravel size of a pea to 6" mixed with sand & some clay to cement slightly not enough water to attract attention above 80'.
85'	90'	Sand & clay mixed not cemented but loose.
90'	129'	Gravel size of a pea to 6" with sand and no clay.
129'	145'	Decomposed granite or soft schist becoming harder as well went down.

All 100 perforations between 50' and 129' below surface perforation 8" to 18" long and average width 5/8 of an inch.


Flood Control Basin
OAK GLEN ROAD
Well
Borrow Pit
Glen Oak Creek
BRYANT ST
W DATE AVE
E DATE AVE
CEDAR AVE
ACACIA AVE
CAIPA BLVD
Water Well
Tank
Trailer Park
PO
YUCAIPA
Yucaipa High Sch
Valley Sch
Yucaipa Sch
Park Well
WEST AVE
EAST AVE
Trailer Parks
Calimesa Sch
DOUGLAS ST
FREMONT ST
VALLEY
Wildwood Canyon Creek
Yucaipa
Calimesa
CALIFORNIA ST
8TH ST
2651
2765
2636
2622
2731
2782
3654
3240
3300
3600
3900
3961
2734
2931
2457
2108
2600
2700
2800
2900
3000
3100
3200
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A
B
C
D
E
F
G
H

25/W-8H

2S/1W-8E1

Well Wildwood #15

WELL RECORD

[redacted]

Company _____

Location Wildwood Canyon 36 01864

NW 1/4 NW 1/4 Township 2 S Range 1 W Section 8

PIT

Date drilled Unknown By Unknown

Depth 145 Diameter _____ Packed _____

CASING

Diameter 12 Length 145 Gauge 1/4

" _____ " _____ " _____

Perforated interval 50 - 129

COLUMN

Diameter 5 Length 120 Gauge STD

" _____ " _____ " _____

Tube diameter 1½ Shaft diameter 1

BOWLS

Date installed _____ By _____

Make Wintroath Model 8-75 Serial no. _____

Size 8 Stages 5 Length _____ Suction 10 ft.

DESIGN PERFORMANCE

GPM _____ RPM _____ TDH _____ HP _____

GPM _____ RPM _____ TDH _____ HP _____

GPM _____ RPM _____ TDH _____ HP _____

ENGINE

Date installed _____ By _____

Type Elec. Make GE Model 12 F 56715 Serial no. XCS 6721749

Cu. in. _____ B & S _____ HP 7½ RPM _____

GEAR

Date installed _____ By _____

Make _____ Model _____ Serial no. _____ HP _____

Shaft _____ Universals _____

Notes: _____

SBVMWD FORM JK-10C

well 15-1
Test well

TRIPLICATE
Owner's Copy

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES

WATER WELL DRILLERS REPORT

Do not fill in

No. 182243

e of Intent No.
al Permit No. or Date 07208924

State Well No.
Other Well No.

(1) OWNER: Name [redacted]
Address [redacted]
City [redacted] Zip [redacted]

(2) LOCATION OF WELL (See instructions):
County San Bernardino Owner's Well Number
Well address if different from above Wildwood Canyon
Township 2 S Range 1 W Section 8
Distance from cities, roads, railroads, fences, etc.
Assessors Parcel #322-212-05

(3) TYPE OF WORK:
New Well ☒ Deepening ☐
Reconstruction ☐
Reconditioning ☐
Horizontal Well ☐
Destruction ☐ (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:
Domestic ☐
Irrigation ☐
Industrial ☐
Test Well ☒
Stock ☐
Municipal ☐
Other ☐

WELL LOCATION SKETCH

(5) EQUIPMENT:
Rotary ☒ Reverse ☐
Cable ☐ Air ☐
Other ☐ Bucket ☐

(6) GRAVEL PACK:
Yes ☒ No ☐ Size Pea Gravel
Diameter of bore 12 ¼
Packed from 0 to 315 ft.

(7) CASING INSTALLED:
Steel ☒ Plastic ☐ Concrete ☐

From ft.	To ft.	Dia. in.	Gage or Wall
0	315	6	1/8

(8) PERFORATIONS:
Type of perforation or size of screen

From ft.	To ft.	Slot size
80	295	.090

(9) WELL SEAL:
Was surface sanitary seal provided? Yes ☐ No ☒ If yes, to depth ft.
Were strata sealed against pollution? Yes ☐ No ☐ Interval ft.
Method of sealing

(10) WATER LEVELS:
Depth of first water, if known 62 ft.
Standing level after well completion ft.

(11) WELL TESTS:
Was well test made? Yes ☐ No ☒ If yes, by whom?
Type of test Pump ☐ Bailer ☐ Air lift ☒
Depth to water at start of test ft. At end of test ft
harge gal/min after hours Water temperature
Chemical analysis made? Yes ☐ No ☒ If yes, by whom?
Was electric log made? Yes ☒ No ☐ If yes, attach copy to this report

(12) WELL LOG: Total depth 315 ft. Depth of completed well 315 ft.

from ft.	to ft.	Formation (Describe by color, character, size or material)
0	102	Fine sand short streak of clay.
102	149	Medium & coarse sand, gravel mix.
149	315	Blue Granite (Decompose).

Work started 6-14 19 89 Completed 6-23 19 89

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

SIGNED (Well Driller)

NAME SoCal Pump & Well Service, Inc. (Person, firm, or corporation) (Typed or printed)
Address 585 W. Valley Blvd
City Bloomington, California Zip 92316
License No. 510836 Date of this report Nov 1, 1989

R 188 (REV. 7-76) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

This is our well # Dave Pafund

1S/1W-33M7

Well BAUMANN 1/6

WELL RECORD

SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT

Company _____

Location 8 of Potato Canyon Rd. Lot 7 - So Mtn Sub. 36 01866

SE 1/4 SE 1/4 Township 1 S Range 1 W Section 27

PIT

Date drilled _____ By _____

Depth 115 Diameter _____ Packed _____

CASING

Diameter 8 Length 115 Gauge 12

" _____ " _____ " _____

Perforated interval _____

COLUMN

Diameter 3 Length 90 Gauge STD

" _____ " _____ " _____

Tube diameter 1 1/4 Shaft diameter 3/4

BOWLS

Date installed _____ By _____

Make Peerless Model 6 L.A. Serial no. _____

Size 6 Stages 12 Length _____ Suction 10

DESIGN PERFORMANCE

GPM _____ RPM _____ TDH _____ HP _____

GPM _____ RPM _____ TDH _____ HP _____

GPM _____ RPM _____ TDH _____ HP _____

ENGINE

Date installed _____ By _____

Type _____ Make Waukesha 4 cyl Model ICK 136C Serial no. 768040

Cu. in. 61 B & S 2½x3 1/8 HP 10.6 RPM KR 1950

GEAR

Date installed _____ By _____

Make Johnson Model HA - 2.3 Serial no. 17348 HP 15

Shaft Spicer Universals _____

Notes: _____

SBVMWD FORM JK-10C

1S/1W-33M1

TRIPLICATE
Owner's Copy

Well 16

Page 1 of 1

Owner's Well No. 16

Date Work Began 4/23/01 , Ended 4/27/01

Local Permit Agency San Bernardino County Health Services

Permit No. 2001040204 Permit Date 4/13/01

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet

No. 584982

DWR USE ONLY — DO NOT FILL IN
STATE WELL NO./STATION NO.
LATITUDE LONGITUDE
APN/TRS/OTHER

GEOLOGIC LOG

ORIENTATION (✓) X VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)

DEPTH TO FIRST WATER ___ (Ft.) BELOW SURFACE

DEPTH FROM SURFACE Ft.	to Ft.	DESCRIPTION *Describe material, grain size, color, etc.*
0	50	Installed sanitary seal on existing well, bored 6" around existing 16" casing and filled with 6 sack concrete and pea gravel by trammie pipe Depth of Sanitary seal 50'

TOTAL DEPTH OF BORING ___ (Feet)

TOTAL DEPTH OF COMPLETED WELL ___ (Feet)

WELL OWNER

Name [redacted]

Mailing Address [redacted]

CITY [redacted] STATE ZIP

WELL LOCATION

Address Canyon Drive 3/4 mile east of Oak Glen

City Yucaipa

County San Bernardino

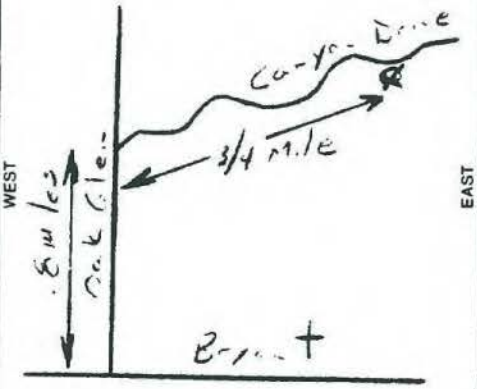
APN Book 0321 Page 251 Parcel 14

Township 1S Range 1 Section 33

Latitude ___ DEG. ___ MIN. ___ SEC. NORTH Longitude ___ DEG. ___ MIN. ___ SEC. WEST

LOCATION SKETCH

NORTH



SOUTH

Illustrate or Describe Distance of Well from Landmarks such as Roads, Buildings, Fences, Rivers, etc.
PLEASE BE ACCURATE & COMPLETE.

ACTIVITY (✓)

___ NEW WELL

MODIFICATION/REPAIR

___ Deepen

X Other (Specify) **Sanitary Seal**

___ DESTROY *(Describe Procedures and Materials Under "GEOLOGIC LOG")*

PLANNED USE(S) (✓)

___ MONITORING

WATER SUPPLY

___ Domestic

X Public*

___ Irrigation

___ Industrial

___ "TEST WELL"

___ CATHODIC PROTECTION

___ OTHER (Specify)

DRILLING METHOD ___ FLUID ___

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH OF STATIC WATER LEVEL ___ (Ft.) & DATE MEASURED ___

ESTIMATED YIELD* ___ (GPM) & TEST TYPE ___

TEST LENGTH ___ (Hrs.) TOTAL DRAWDOWN ___ (Ft.)

** May not be representative of a well's long-term yield.*

CASING(S)

DEPTH FROM SURFACE Ft.	to Ft.	BORE-HOLE DIA. (Inches)	TYPE (✓) BLANK	SCREEN	CONDUCTOR	FILL PIPE	MATERIAL/GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft.	to Ft.	TYPE: CEMENT (✓)	BENTONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
0	50	X			N/A

ATTACHMENTS (✓)

___ Geologic Log

___ Well Construction Diagram

___ Geophysical Log(s)

___ Soil/Water Chemical Analyses

___ Other ___

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME Tri County Pump Company
(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

ADDRESS 241 South Arrowhead Ave. CITY San Bernardino STATE CA ZIP 92408

Signed [signature] (WELL DRILLER/AUTHORIZED REPRESENTATIVE)

DATE SIGNED 5/9/01

C-57 LICENSE NUMBER 744742

DWR 188 REV. 7-90

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

Well 17

TRIPLICATE
Owner's Copy

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES

WATER WELL DRILLERS REPORT

2S/1W-21

Do not fill in
No. 15689

Notice of Intent No.
Permit No. or Date
State Well No. 02S/07W-02Q02
Other Well No.

(1) OWNER: Name [redacted]
Address [redacted]
City [redacted] Zip [redacted]

(2) LOCATION OF WELL (See instructions):
County San Bernadino Owner's Well Number W-62
Well address if different from above
Township Range Section
Distance from cities, roads, railroads, fences, etc.

WELL LOCATION SKETCH

(3) TYPE OF WORK:
New Well [X] Deepening [ ]
Reconstruction [ ]
Reconditioning [ ]
Horizontal Well [ ]
Destruction [ ] (Describe destruction materials and procedures in Item 11)

(4) PROPOSED USE:
Domestic [ ]
Irrigation [ ]
Industrial [ ]
Test Well [ ]
Stock [ ]
Municipal [ ]
Other [ ]

(5) EQUIPMENT:
Rotary [ ] Reverse [ ]
Cable [ ] Air [X]
Other [ ] Bucket [ ]

(6) GRAVEL PACK:
Yes [ ] No [ ] Size
Diameter of bore
Packed from ft. to ft.

(7) CASING INSTALLED:
Steel [ ] Plastic [X] Concrete [ ]

From ft.	To ft.	Dia.	Gage or wall

(8) PERFORATIONS:
Type of perforation or size of screen

From	To	Slot

(9) WELL SEAL:
Was surface sanitary seal provided? Yes [X] No [ ] If yes, to depth ft.
Were strata sealed against pollution? Yes [ ] No [X] Interval ft.
Method of sealing Steel & Cement

(10) WATER LEVELS:
Depth of first water, if known 80 ft.
Standing level after well completion 65 ft.

(11) WELL TESTS:
Was well test made? Yes [X] No [ ] If yes, by whom?
Type of test Pump [ ] Bailer [ ] Air lift [X]
Depth to water at start of test ft. At end of test ft.
Discharge 100 gal/min after hours Water temperature
Chemical analysis made? Yes [ ] No [X] If yes, by whom?
Was electric log made? Yes [ ] No [X] If yes, attach copy to this report

(12) WELL LOG: Total depth 180 ft. Depth of completed well 180 ft.

from ft.	to ft.	Formation (Describe by color, character, size or material)
0	10	Brown DG & Firm
10	20	Brown DG & Firm
20	40	firmeDG brown
40	80	Gravel brown DG mix
80	100	rusty brown gravel water
100	140	brown DG firm
140	150	black sand stone or rock
150	160	brown green DG
160	180	Harder DG brown
180		STOP

Work started 4-7 19 87 Completed 4-9 19 87

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

SIGNED (Well Driller)

NAME Ron Engeldinger (Person, firm, or corporation) (Typed or printed)
Address P.O. Box 250
City Hemet, Ca. Zip 92343
License No. 294625 Date of this report 4-16-87

WR 188 (REV. 7-76) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM 43816 DGS 7-76 50M QUAD (1) T OSF

NOT VALID FOR PUBLIC USE
WELL CODE SEC. 13752

was 50 ft sanitary seal pumps test

Well 17 [redacted] 2S/1W-24 hen 62

TRIPLICATE
Owner's Copy

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES

WATER WELL DRILLERS REPORT

Do not fill
No. 15689

Notice of Intent No. [redacted]
Permit No. or Date [redacted]
State Well No. [redacted]
Other Well No. [redacted]

(1) OWNER: Name [redacted]
Address [redacted]
City [redacted] Zip [redacted]

(2) LOCATION OF WELL (See instructions):
County San Bernadino Owner's Well Number [redacted]
Well address if different from above [redacted]
Township [redacted] Range [redacted] Section [redacted]
Distance from cities, roads, railroads, fences, etc. [redacted]

WELL LOCATION SKETCH

(3) TYPE OF WORK:
New Well [X] Deepening [ ]
Reconstruction [ ]
Reconditioning [ ]
Horizontal Well [ ]
Destruction [ ] (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:
Domestic [ ]
Irrigation [ ]
Industrial [ ]
Test Well [ ]
Stock [ ]
Municipal [ ]
Other [ ]

(5) EQUIPMENT:
Rotary [ ] Reverse [ ]
Cable [ ] Air [X]
Other [ ] Bucket [ ]

(6) GRAVEL PACK:
Yes [ ] No [ ] Size [ ]
Diameter of bore [ ]
Packed from [ ] to [ ] ft.

(7) CASING INSTALLED:
Steel [ ] Plastic [X] Concrete [ ]

(8) PERFORATIONS:
Type of perforation or size of screen:

From ft.	To ft.	Dia. in.	Gage or Wall	From ft.	To ft.	Slot size
	180	8"				

(9) WELL SEAL:
Was surface sanitary seal provided? Yes [X] No [ ] If yes, to depth [ ] ft.
Were strata sealed against pollution? Yes [ ] No [X] Interval [ ] ft.
Method of sealing Steel & Cement

(10) WATER LEVELS:
Depth of first water, if known 80 ft.
Standing level after well completion 65 ft.

(11) WELL TESTS:
Was well test made? Yes [X] No [ ] If yes, by whom? [ ]
Type of test Pump [X] Bailer [ ] Air lift [X]
Depth to water at start of test [ ] ft. At end of test [ ] ft.
Discharge 100 gal/min after [ ] hours Water temperature [ ]
Chemical analysis made? Yes [ ] No [X] If yes, by whom? [ ]
Electric log made? Yes [ ] No [X] If yes, attach copy to this report

(12) WELL LOG: Total depth 180 ft. Depth of completed well 180 ft.
from ft. to ft. Formation (Describe by color, character, size or material)

0 10 Brown DG & Firm
10 20 Brown DG & Firm
20 40 firmeDG brown
40 80 Gravel brown DG mix
80 100 rusty brown/gravel water
100 140 brown DG firm
140 150 black/sand stone or rock
150 160 brown/green DG
160 180 Harder DG brown
180 STOP

USE 752

Work started 4-7 19 87 Completed 4-9 19 87

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

SIGNED: [ ] (Well Driller)
NAME: Ron Engeldinger (Person, firm, or corporation) (Typed or printed)
Address P.O. Box 250
City Hemet, Ca. Zip 92343
License No. 294625 Date of this report 4-16-87

DWR 188 (REV. 7-76) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM 43816-950 7-76 50M QUAD (1) T OSP

1S/2W-25G1

ORIGINAL
File with DWR

Page 1 of 1

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet

Owner's Well No. [redacted] WELL #19 No. 766676

Date Work Began 9/28/99 Ended 10/12/99

Local Permit Agency San Bernardino County EHS Div

Permit No 1999100830 Permit Date 10/22/99

DWR USE ONLY — DO NOT FILL IN
STATE WELL NO./STATION NO
LATITUDE LONGITUDE
AGENCY/OTHER

GEOLOGIC LOG

ORIENTATION (✓) ___ VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)

DRILLING METHOD ___ FLUID ___

DEPTH FROM SURFACE FT. TO FT.	DESCRIPTION (Describe material, grain size, color, etc.)
	Excavated down 6 feet, graveled well up to 50 feet and pumped in a 50 feet 10 sack sand slurry mix.

TOTAL DEPTH OF BORING ___ (Feet)

TOTAL DEPTH OF COMPLETED WELL ___ (Feet)

WELL OWNER

Name [redacted]

Mailing Address [redacted]

Yucaipa CA 92399
CITY STATE ZIP

WELL LOCATION

Address Fir/Goldstein

City Yucaipa

County San Bernardino

APN Book ___ Page ___ Parcel 303-391-78

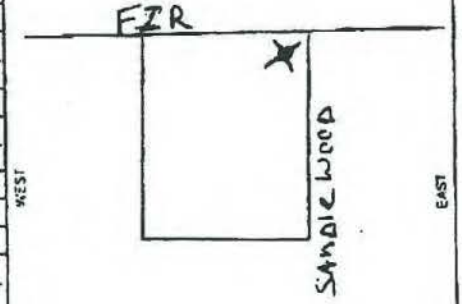
Township 1S Range 2W Section 25

Latitude ___ DEG ___ MIN ___ SEC. NORTH

Longitude ___ DEG ___ MIN ___ SEC. WEST

LOCATION SKETCH

NORTH



SOUTH

Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. PLEASE BE ACCURATE & COMPLETE.

ACTIVITY (✓)

___ NEW WELL

MODIFICATION/REPAIR
___ Deepen
___ Other (Specify)

X DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")

PLANNED USES (✓)

WATER SUPPLY
___ Domestic ___ Public
___ Irrigation ___ Industrial

___ MONITORING
___ TEST WELL
___ CATHODIC PROTECTION
___ HEAT EXCHANGE
___ DIRECT PUSH
___ INJECTION
___ VAPOR EXTRACTION
___ SPARGING
___ REMEDIATION
___ OTHER (SPECIFY)

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER ___ (Ft.) BELOW SURFACE

DEPTH OF STATIC WATER LEVEL ___ (Ft.) & DATE MEASURED ___

ESTIMATED YIELD * ___ (GPM) & TEST TYPE ___

TEST LENGTH ___ (Hrs.) TOTAL DRAWDOWN ___ (Ft.)

* May not be representative of a well's long-term yield.

CASING (S)

DEPTH FROM SURFACE Ft. To Ft.	BORE-HOLE DIA. (Inches)	TYPE (✓) BLANK	SCREEN	CEMENTED/CONCRETE	ALL PURPOSE	MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft. To Ft.	TYPE: CEMENT (✓)	BENTONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)

ATTACHMENTS (✓)

___ Geologic Log
___ Well Construction Diagram
___ Geophysical Log(s)
___ Soil/Water Chemical Analyses
___ Other ___

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I (We) undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME SoCal Pump & Well Drilling, Inc.
(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

ADDRESS P.O. Box 5488 CITY Riverside STATE CA ZIP 92517

Signed ___ (WELL DRILLER/AUTHORIZED REPRESENTATIVE) DATE SIGNED 12-7-00

C-57 LICENSE NUMBER 510836

1S/2W-25G1

Well 19
36-01105

WELL RECORD
SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT

Company _____

Location 1200 W. Bryant 800 No. Oak Glen ELEV 2770

NW 1/4 SE 1/4 Township 1S Range 1W Section 25

PIT

Date drilled _____ By _____

Depth 365 Diameter _____ Packed _____

CASING

Diameter 16 Length 365 Gauge _____

" _____ " _____ " _____

Perforated interval _____

COLUMN

Diameter _____ Length 300 Gauge _____

" _____ " _____ " _____

Tube diameter _____ Shaft diameter _____

BOWLS

Date installed _____ By Coe

Make Pomona Model Water tube Serial no. _____

Size _____ Stages _____ Length _____ Suction _____

DESIGN PERFORMANCE

GPM _____ RPM _____ TDH _____ HP _____

GPM _____ RPM _____ TDH _____ HP _____

GPM _____ RPM _____ TDH _____ HP _____

ENGINE

Date installed _____ By _____

Type Elect Make G.E. Model 12F3262 Serial no. 5777487

Cu. in. _____ B & S _____ HP 30 RPM 1770

GEAR

Date installed _____ By _____

Make _____ Model _____ Serial no. _____ HP _____

Shaft _____ Universals _____

Notes: Motor Rewind 64

SBVMWD FORM JK-10C

1S/2W-25G1

Well 1G
36-01165

MONTHLY PRODUCTION RECORD

SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT

Company _____

Month of _____ 5655

DATE	WATER METER	GPD	GPM	GAS METER	Cu. Ft.	OIL	MIN. DOWN
64 J				3879		—	15
F				4041			140
M				4082		22.73	85
A				4116			130
M				4137		14.36	80
J				4160			12.5
J				4196		19.51	190
A				4251			145
S				4294		89.87	18
O				4341			20
N				4404		10.30	9
D				4428			5-1/2
	200 GPM						
							201.5
65 J				4444		3.59	3
F				4453			5.5
M				4468		4.37	4.5
A				4482			4.0
M				4494		82.64	12.0
J				4520			14
J				4558		87.95	17.5
A				4608			
S				4676		86.70	17
O				4676			14
N				4715		9.52	8.5
D				4733			8.5
	200 GPM est.						
	1,242,000 GAL. 3.81 AF.						
TOT.							

REMARKS _____

SBVMWD FORM JK-101

WW #20

FROM: DEPT WATER RESOURCES FAX NO.: 9185474804 08-06-97 11:12A P.02

DUPLICATE
ginal, Duplicate and Triplicate with the
ONAL WATER POLLUTION
TROL BOARD No. 7
(appropriate number)

WATER WELL DRILLERS REPORT

(Sections 7076, 7077, 7078, Water Code)

STATE OF CALIFORNIA

Do Not Fill In
No 59344
State Well No. 1S/2W-25 R01
Other Well No.

OWNER:
Name [redacted]
Address

(2) LOCATION OF WELL:
County San Bernardino Owner's number if any
R. F. D. or Street No.
South 150 acers of SE¼, section 25, T1S Range 2W, NW corner of Bryant and Oak Glen, Yucaipa, Calif.

(3) TYPE OF WORK (check):
New well X Deepening ☐ Reconditioning ☐ Abandon ☐
If abandonment, describe materials and procedure in Item 11.

(4) PROPOSED USE (check):
Domestic ☐ Industrial ☐ Municipal X
Irrigation ☐ Test Well ☐ Other ☐

(5) EQUIPMENT:
Rotary X
Cable ☐
Dug Well ☐

(6) CASING INSTALLED:
SINGLE X DOUBLE ☐

From	To	Diam.	Gage Wall
	590	12 3/4"	¼
585/8"	to 12 3/4"	ing guides	

If gravel packed

Diameter of Bore	From	To
18 5/8"	0	590

Type and size of shoe or well ring
Describe joints welded joint
collars
pea
of rile

(7) PERFORATIONS:
Type of perforator used mill cut
Size of perforations 120 mesh, length by 14 rows in.

From	To	Diam. of Perf.	No. per ft.
8190	590	120 mesh	14

XXXX XXXXXXXX

(8) CONSTRUCTION:
Was a surface sanitary seal provided? X Yes ☐ No To what depth? 150 ft.
Were gravel strata sealed against pollution? ☐ Yes ☐ No If yes, what depth to strata?
From ft. to ft.
Method of Sealing Rotary mud slurry

(9) WATER LEVELS:
ft. at which water was first found
ft. static level before perforating
ft. static level after perforating 400 ft.

WELL TESTS:
Was test made? X Yes ☐ No If yes, by whom? C.V. Pump
Yield 830 gal./min. with 340 ft. drawdown after 24 hrs.
Temperature of water Was a chemical analysis made? ☐ Yes X No

(11) WELL LOG:
Total depth 590 ft. Depth of completed well 590 ft.
Formation. Describe by color, character, size of material, and structure.

From	To	Formation
0	58	coarse sand & gravel
58	70	coarse sand & gravel
70	104	coarse sand w streaks of heavy gravel
104	140	coarse sand w/gravel
140	190	sand & gravel
190	220	coarse sand
220	240	coarse sand
240	255	sand & gravel
255	280	sand w/ some clay
280	290	sand & gravel
290	300	sand & rock
300	320	sand & gravel
320	340	rocks & sand
340	375	sand & rock
375	395	sand & gravel, free
395	410	sand
410	440	hard sand & rock
440	480	hard sand & rock
480	500	coarse sand
500	555	coarse sand
555	578	coarse sand
578	590	coarse sand
590		Hard rock

CONFIDENTIAL - NOT FOR PUBLIC RELEASE

MICROFILMED

Work started 6/8 ·62 Completed July 20 6

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Coachella Valley Pump & Supply, I
(Person, firm or corporation) (Type or print)
Address P.O. Box 1274
Indio, Calif.

(SIGNED) Well Driller

License No. 161541 Dated , 19

DWR 188 (REV 5-

DUPLICATE
ginal, Duplicate and Triplicate with the
ONAL WATER POLLUTION
TROL BOARD No. 7
ppropriate number)

WATER WELL DRILLERS REPORT

(Sections 7076, 7077, 7078, Water Code)

WELL WAS #'O R01, R02 & R03

STATE OF CALIFORNIA

AS OF 8-7-97 - 015/02W-25R02S

Do Not Fill In

No 59344

State Well No. 1S/2W-25 R01

Other Well No.

OWNER:

Name [redacted]

Address [redacted]

(2) LOCATION OF WELL:

County San Bernardino Owner's number, if any—

R. F. D. or Street No.

South 133 acers of SE¼, section 25, T1S Range 2W, NW corner of Bryant and Oak Glen, Yucaipa, Calif.

(3) TYPE OF WORK (check):

New well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐

If abandonment, describe material and procedure in Item 11.

(4) PROPOSED USE (check):

Domestic ☐ Industrial ☐ Municipal ☒

Irrigation ☒ Test Well ☐ Other ☐

(5) EQUIPMENT:

Rotary ☒

Cable ☐

Dug Well ☐

(6) CASING INSTALLED:

SINGLE ☒ DOUBLE ☐

ft. to	ft. Diam.	Gage or Wall
590	12 3/4"	¼
85/8" to 12 5/4"		
ing guides		

Type and size of shoe or well ring

Describe joint welded slip joint collars

If gravel packed

Diameter of Bore	from ft.	to ft.
18 5/8"	0	590

Size of gravel #1 pea Holtville

(7) PERFORATIONS:

Type of perforator used mill cut

Size of perforations 120 mesh, length, by 14 rows in.

From ft. to	ft.	Perf. per row	Rows per ft.
190 590		120 mesh	14

(8) CONSTRUCTION:

Was a surface sanitary seal provided? ☒ Yes ☐ No To what depth 150 ft.

Were any strata sealed against pollution? ☐ Yes ☐ No If yes, note depth of strata

From ft. to ft.

Method of Sealing Rotary mud slurry

(9) WATER LEVELS:

t which water was first found ft.

g level before perforating ft.

g level after perforating 400 ft. ft.

WELL TESTS:

ump test made? ☒ Yes ☐ No If yes, by whom? C.V. Pump

Yield: 850 gal./min. with 340 ft. draw down after 24 hrs.

Temperature of water Was a chemical analysis made? ☐ Yes ☒ No

Was electric log made of well? ☐ Yes ☒ No

(11) WELL LOG:

Total depth 590 ft. Depth of completed well 590 ft.

Formation: *Describe by color, character, size of material, and structure.*

ft. to	ft.	
0	58	coarse sand & gravel
58	70	coarse sand & gravel
70	104	coarse sand w streaks of heavy gravel
104	149	coarse sand w/gravel
149	190	sand & gravel
190	220	coarse sand
220	240	coarse sand
240	255	sand & gravel
255	280	sand w/ some clay
280	290	sand & gravel
290	300	sand & rock
300	320	sand & gravel
320	340	rocks & sand
340	375	sand & rock
375	395	sand & gravel, free
395	410	sand
410	440	hard sand & rock
440	480	hard sand & rock
480	500	coarse sand
500	555	coarse sand
555	578	coarse sand
578	590	coarse sand
590		Hard rock

No test yield

CONFIDENTIAL - NOT FOR PUBLIC RELEASE

AUG 11 1997

MICROFILME

Work started 6/8 19 62. Completed July 20 62

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Coachella Valley Pump & Supply, Inc.

(Person, firm, or association) (Typed or printed)

Address P.O. Box 1274

Indio, Calif.

[SIGNED] [signature]

Well Driller

License No. 161541 Dated , 19

87028 6-67 50M QUIN △ SPO

DWR 188 (REV. 3-54)

#20

COACHELLA VALLEY PUMP & SUPPLY, Inc.

JOHNSTON PUMP DISTRIBUTORS
COMPLETE PUMPING EQUIPMENT
DOMESTIC AND IRRIGATION

Licensed Contractors
Telephone EXpress 9-2192
P. O. BOX 1274 ☆ INDIO, CALIF. 92201

SPRINKLER IRRIGATION SYSTEMS
WATER WELL DRILLING
FABRICATED STEEL PIPE

May 30, 1968

San Bernardino Valley Municipal Water District
L.D. Hook, Water Superintendent
P.O. Box 458
Yucaipa, California 92399

Dear Mr. Hook:

I cannot find a copy of the report that was sent to the State on their forms, but below is the needed information as we have in our records. This information is the same as that reported.

Drilled for: E.J. Culligan
Started: June8, 1962
finished: July 20, 1962
Legal description: South 133 acres of SE¼, Sec. 25; T1S; R2W; NW corner of Bryant and Oak Glen, Yucaipa, Calif.

Well Log:

0'	to	58'	Coarse sand & gravel
58'		70'	coarse sand & gravel
70		104	coarse sand w/streaks of heavy gravel
104		149	coarse sand w/gravel
149		190	sand & gravel
190		240	coarse sand
240		255	sand & gravel
255		280	sand w/some clay
280		290	sand & gravel
290		300	sand & rock
300		320	sand & gravel
320		340	rocks & sand
340		375	sand & rock
375		395	sand & gravel
395		410	sand
410		480	hard sand & rock
480		590	coarse sand
590		597	hard rock

Casing record:

0'	590'	12 3/4" OD X ¼" wall casing
190'	590'	perforations, mill cut, 120 mesh, 14 rows

Water standing level: 400'

diameter of drilled hole: 18 5/8"

Size of gravel: small pea

Sealed to 150'

Yours truly,

State of California
DEPARTMENT OF WATER RESOURCES
Southern District

FACSIMILE TRANSMISSION COVER SHEET

DATE: 8/6/97

TO: Ron McCool
NAME OF RECIPIENT

YVWD
ORGANIZATION

909 7976381
FAX NUMBER OF RECIPIENT

PHONE NUMBER OF RECIPIENT

FROM: Gary Gilbreath
NAME OF SENDER

818 543-4600 Ext 222
PHONE

Data Section Fax # 818 543-4604
SECTION OR UNIT

770 Fairmont Ave. Glendale, Ca. 91203

1 PAGES TO FOLLOW

APPROVAL

SUBJECT: per our conversation

COMMENTS:

IF ALL PAGES SHOWN ARE NOT RECEIVED, PLEASE CALL:
ATSS 8-667-4600 OR PUBLIC 818-543-4600

SOUTHERN DISTRICT FACSIMILE MACHINE PHONE NUMBERS ARE:
ATSS 8-667-4604 OR PUBLIC 818-543-4604

THE RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES

State Well No. 01S/02W-25R01, S B&M

WELL INDEX

Location No.
Serial or Ventura No.
Local or Riv. No.
Bulletin 39-J No.
Other No. Log No 59344

County 36
Areal Designation ~~Y-01 F6~~
Areal Code No. ~~8~~ Y-01. F6

Well Condition 4
Ref. Pt. Elev. 2762.0 ft.
Effective Date
Ground Elev. 2760.0 ft.

Data Available	Filed Under
Log 2	5050
Water Analyses —	
Water Levels —	
Prod. Records —	

Original Well Depth 0590 ft.
Well Soundings
Casing: Dia. 12 3/4 in., Length 0590 ft.
Perf. 190' to 590'

Well Use 3

Aquifer(s)
Record: Begins 6/8/62, Ends

State of California
The Resources Agency
DEPARTMENT OF WATER RESOURCES

State Well No. 01S/02W 25R02S B&M

WELL INDEX

Location No.
Serial or Ventura No.
Local or Riv. No.
Bulletin 39-J No.
Other No. Yucaipa V.C.W.D Nr 20

County S. Bernardino (36)
Areal Designation
Areal Code No. Y 01 F6

Well Condition
Ref. Pt. Elev. 2740' ft.
Effective date
Ground Elev. ft.

Data Available	Filed Under
Log	
Water Analyses	
Water Levels	
Prod. Records	

Original Well Depth 576 ft.
Well Soundings
Casing Dia. 12 in., Length ft.
Perf.

Well Use
Well Type

Aquifer(s)
Record: Begins , Ends

DWR 1058 (Rev. 6/70)

AUG 1 1 1997

Well 20

WELL RECORD

Rec. #36 02321

SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT

Company _____

Location 400' No. of Oak Glen Road - 1000' W. of Bryant Street

SE 1/4 SE 1/4 Township 1S Range 2W Section 25

PIT

Date drilled 1962 By _____

Depth 576' Diameter 12" Packed No

CASING

Diameter 12" Length 576' Gauge 1/4

" _____ " _____ " _____

Perforated interval _____

COLUMN

Diameter 8" Length 460' Gauge _____

" 6" " 50' " _____

Tube diameter 2½" Shaft diameter 1½"

BOWLS

Date installed April 1966 By Turley Pump Co.

Make Peerless Model 8 LB Serial no. 250120

Size 8" Stages 22 Length _____ Suction Strainer

DESIGN PERFORMANCE

GPM 275	RPM 1760	TDH 620	HP 60
GPM _____	RPM _____	TDH _____	HP _____
GPM _____	RPM _____	TDH _____	HP _____

ENGINE

Date installed 11-65 By Turley Pump Co.

Type Elect. Make U.S. Model _____ Serial no. 3831181

Cu. in. _____ B & S _____ HP 60 RPM 1760

GEAR

Date installed _____ By _____

Make _____ Model _____ Serial no. _____ HP _____

Shaft _____ Universals _____

Notes: 540' Air Line

SBVMWD FORM JK-10C

2S/2W - 11B2

QUINTUPLICATE
RETAIN THIS COPY

WATER WELL DRILLERS REPORT
(Sections 7076, 7077, 7078, Water Code)

THE RESOURCES AGENCY OF CALIFORNIA

Do Not Fill In 24
No 122021

State Well No.
Other Well No.

(1) OWNER:
District
Name [redacted]
Address [redacted]

(2) LOCATION OF WELL:
County San Bernardino Owner's number, if any [redacted]
R. F. D. or Street No. 100 ft. of east of 5th St. - 1000 feet north of Ave. F - Yucaipa

(3) TYPE OF WORK (check):
New well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in Item 11.

(4) PROPOSED USE (check):
Domestic ☐ Industrial ☐ Municipal ☒
Irrigation ☐ Test Well ☐ Other ☐

(5) EQUIPMENT:
Rotary ☐
Cable ☒
Dug Well ☐

(6) CASING INSTALLED:
SINGLE ☒ DOUBLE ☐

From	ft. to	ft.	Diam.	Gauge or Wall
0	566	16	1/4	
566	590	16	5/16"	

Type and size of shoe or well ring 16"x12"x1" Bit steel
Describe joint All joints butt weld

If gravel packed

Diameter of Bore	from ft.	to ft.

(7) PERFORATIONS:
Type of perforator used Mills
Size of perforations 2 1/2 in., length, by 7/16 in.

From	ft. to	ft.	Perf. per row	Rows per ft.
320	585	8	1	

(8) CONSTRUCTION:
Was a surface sanitary seal provided? ☒ Yes ☐ No To what depth 20 ft.
Were any strata sealed against pollution? ☐ Yes ☒ No If yes, note depth of strata
From ft. to ft.
" Ring of concrete between
Method of Sealing casing and formation

(9) WATER LEVELS:
Depth at which water was first found 310 ft.
Standing level before perforating 306 ft.
Standing level after perforating 305 ft.

(10) WELL TESTS:
Was a pump test made? ☐ Yes ☒ No If yes, by whom?
Yield: gal./min. with ft. draw down after hrs.
Temperature of water Was a chemical analysis made? ☐ Yes ☐ No
Was electric log made of well? ☐ Yes ☐ No

(11) WELL LOG:
Total depth 590 ft. Depth of completed well 590 ft.
Formation: *Describe by color, character, size of material, and structure.*

0	ft. to	245	ft. Hard brown gravelly clay 2192.4
245	"	328	" Gray tight sand & gravel
	"		" some clay
328	"	430	" Rough gray gravel & boulders,
	"		" some clay
430	"	456	" Brown clay with gravel
	"		" embedded
456	"	532	" Rough gravel with few clay
	"		" streaks
532	"	540	" Brown clay withstreaks of
	"		" gravel 1897.4
540	"	563	" Gray and brown soft decomposed
	"		" granite
563	"	590	" Hard gray decomposed granite 1847
590	"		" Hard blue granite

Work started Nov. 2 1965 Completed Dec. 27 1965

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME KIRKLAND WELL SERVICE
(Person, firm, or corporation) *(Typed or printed)*
Address 32291 Dunlap Blvd.
Yucaipa, Calif.
[SIGNED] K. Kirkland
Well Driller
License No. 169847 Dated Jan. 3 1966

87649 5-62 25M QUIN ① △ SPO

DWR 188 (REV. 3-54)

File Original, Duplicate and Triplicate with the REGIONAL WATER POLLUTION CONTROL BOARD No. . . . . (insert appropriate number)

WATER WELL DRILLER'S REPORT

(Sections 7056, 7057, 7058, Water Code)

THE RESOURCES AGENCY OF CALIFORNIA

25/2W-11B2

No. 122022

State Well No. 01N/2W-11 B

Other Well No. Dan Hey

(1) OWNER:

Name [redacted]

Address [redacted]

(2) LOCATION OF WELL:

County San Bernardino Owner's number, if any— 24

R. F. D. or Street No. 100 ft. of 5th St.-1000 ft North of F St. Yucaipa.

Address of well if different from above

(3) TYPE OF WORK (check):

New well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐

If abandonment, describe material and procedure in Item 11.

(4) PROPOSED USE (check):

Domestic ☐ Industrial ☐ Municipal ☒

Irrigation ☐ Test Well ☐ Other ☐

(5) EQUIPMENT:

Rotary ☐

Cable ☒

Dug Well ☐

(6) CASING INSTALLED:

SINGLE ☒ DOUBLE ☐

From	ft. to	ft.	Diam.	Gage or Wall
0	566	16"	1/4	"
566	590	"	5/16	"
"	"	"	"	"
"	"	"	"	"
"	"	"	"	"
"	"	"	"	"

If gravel packed

Diameter of Bore	from ft.	to ft.
"	"	"
"	"	"
"	"	"
"	"	"
"	"	"

Type and size of shoe or well ring Bit. Steel-16" Straight

Describe joint All joints butt weld

(7) PERFORATIONS:

Type of perforator used Mills

Size of perforations 2 1/2 in., length, by 7/16 in.

From 320 ft. to 585 ft. 8 Perf. per row 1 Rows per ft.

" " " " " " " " " " " "

" " " " " " " " " " " "

" " " " " " " " " " " "

(8) CONSTRUCTION:

Was a surface sanitary seal provided? ☒ Yes ☐ No To what depth 20 ft.

Were any strata sealed against pollution? ☐ Yes ☒ No If yes, note depth of strata

From ft. to ft.

" " "

Method of Sealing Ring of concrete between casing and formation

(9) WATER LEVELS:

Depth at which water was first found 310 ft.

Standing level before perforating 306 ft.

" level after perforating 305 ft.

(10) WELL TESTS:

Was a pump test made? ☐ Yes ☒ No If yes, by whom?

Yield: gal./min. with ft. draw down after hrs.

Temperature of water Was a chemical analysis made? ☐ Yes ☐ No

Was electric log made of well? ☐ Yes ☐ No

(11) WELL LOG:

Total depth 590 ft. Depth of completed well 590 ft.

Formation: Describe by color, character, size of material, and structure.

0	ft. to	245	ft. Hard brn. & gravelly clay.
245	"	328	" Gray tight sand and gravel some clay.
328	"	430	" Rough gray, gravel and boulders, some clay.
430	"	456	" Brown clay with gravel embedded.
456	"	532	" Rough gravel with few clay streaks.
532	"	540	" Brown clay with streaks of gravel.
540	"	563	" Gray and brown, soft decomposed granite.
563	"	590	" Hard gray decomposed granite.
"	"	590	" Hard blue granite.

Work started Nov. 2 19 65 Completed Dec. 27 1965

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Kirkland Well Service (Person, firm, or corporation) (Typed or printed)

Address 32291 Dunlap Blvd. Yucaipa, Calif.

[SIGNED] K. Kirkland (Well Driller)

License No. 16-5311 Dated Dec. 12, 1965

2S/2W-11B2

Well 24
JG-02322

WELL RECORD

SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT

Company _____

Location 200 ft. E of 5th St. 900 ft No. of Ave. F. ELEV 2440

NW 1/4 NE 1/4 Township 2S Range 2W Section 11

PIT

Date drilled Dec. 1965 By Kirkland
Depth 590 Diameter 16 ~~Cable Tool~~ Packed No

CASING

Diameter 16 Length 590 Gauge 1/4
" " "
Perforated interval 320 to 585 2½ by 7/16

COLUMN

Diameter 8 Length 400 Gauge std
" " "

Tube diameter 3 Shaft diameter 1-11/16

BOWLS

Date installed June 66 By Roberts
Make Johnston Model 14BC imp F Serial no. JY-2354
Size 14 Stages 12 Length _____ Suction ~~10 ft pipe~~ strainer only

DESIGN PERFORMANCE

GPM 850 RPM 1188 TDH 560 HP 150
ACT GPM 750 RPM 1188 TDH _____ HP _____
GPM _____ RPM _____ TDH _____ HP _____

ENGINE

Date installed June 66 By Roberts
Type Elec Make _____ Model _____ Serial no. _____
Cu. in. _____ B&S _____ HP 150 RPM 1160

GEAR

Date installed _____ By _____
Make _____ Model _____ Serial no. _____ HP _____
Shaft _____ Universals _____

Notes: ~~400 ft airline, plastic~~
P-61 Pump control valve installed. Warric automation to the 2nd. St. reservoir. Well has 10 min. blow off time for heavy sand condition experienced for first 5-10 min.

SBVMWD FORM JK-10C

RETAIN THIS COPY

2S 1W 8F01S

(Sections 7076, 7077, 7078, Water Code)

Wildwood canyon #27

No. 109205

THE RESOURCES AGENCY OF CALIFORNIA

State Well No. _____

Other Well No. #5 Ass. 600

(1) OWNER:

Name [redacted]

Address

(2) LOCATION OF WELL:

County [illegible] Owner's number, if any—

R. F. D. or Street No.

[illegible]

(3) TYPE OF WORK (check):

New well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐

If abandonment, describe material and procedure in Item 11.

(4) PROPOSED USE (check):

Domestic ☒ Industrial ☐ Municipal ☐

Irrigation ☐ Test Well ☐ Other ☐

(5) EQUIPMENT:

Rotary ☒

Cable ☐

Dug Well ☐

(6) CASING INSTALLED:

SINGLE ☐ DOUBLE ☐

From ft.	to ft.	Diam.	Gage or Wall
0	314	6 5/8 x 7/16	
"	"	"	"
"	"	"	"
"	"	"	"
"	"	"	"

Type and size of shoe or well ring

Describe joint [illegible]

If gravel packed

Diameter of Bore	from ft.	to ft.
12 1/4	0	314
"	"	"
"	"	"
"	"	"
"	"	"

Size of gravel: 3/16 I.D.

(7) PERFORATIONS:

Type of perforator used Mill

Size of perforations 3/4 in., length, by 1/8 in.

From ft.	to ft.	Perf. per row	Rows per ft.
164	314	4	2
"	"	"	"
"	"	"	"
"	"	"	"

(8) CONSTRUCTION:

Was a surface sanitary seal provided? ☒ Yes ☐ No To what depth 40 ft.

Were any strata sealed against pollution? ☐ Yes ☐ No If yes, note depth of strata

From ft.	to ft.
"	"

Method of Sealing Cement

(9) WATER LEVELS:

Depth at which water was first found ft.

Standing level before perforating ft.

Standing level after perforating ft.

(10) WELL TESTS:

Was a pump test made? ☐ Yes ☒ No If yes, by whom?

Yield: gal./min. with ft. draw down after hrs.

Temperature of water Was a chemical analysis made? ☐ Yes ☒ No

Was electric log made? ☐ Yes ☒ No

(11) WELL LOG:

Total depth 314 ft. Depth of completed well 314

Formation: *Describe by color, character, size of material, and structure.*

ft. to	ft.	
0	15	TOP SOIL
15	75	SAND & CLAY
75	95	CLAY
95	110	SAND
110	130	SAND & GRAVEL
130	161	SAND & ROCK
161	175	SAND
175	185	SAND & ROCK
185	210	ROCK & CLAY
210	250	ROCK
250	300	SAND & ROCK
300	314	DECOMPOSED GRANITE

314

140

164

Perf

95

PERF

Work started 19 , Completed

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME [illegible] (Person, firm, or corporation) (Typed or printed)

Address [illegible]

[SIGNED] [illegible] (Well Driller)

License No. 150126 Dated Feb. 2, 19[illegible]

MONITORING WELL NEXT TO WELL 27 (Well 27A monitoring well) 25/2W-8F2

not well 27

TRIPLICATE
Owner's Copy

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES

WATER WELL DRILLERS REPORT

Do not fill in

No. 182242

Notice of Intent No.
al Permit No. or Date 07208923

State Well No.
Other Well No.

(1) OWNER: Name [redacted]
Address [redacted]
City [redacted] Zip 92399

(2) LOCATION OF WELL (See instructions):
County San Bernardino Owner's Well Number
Well address if different from above Wildwood Canyon
Township 2 S Range 1 W Section 8
Distance from cities, roads, railroads, fences, etc.
Assessors Parcel #322-212-30

(3) TYPE OF WORK:
New Well ☒ Deepening ☐
Reconstruction ☐
Reconditioning ☐
Horizontal Well ☐
Destruction ☐ (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:
Domestic ☐
Irrigation ☐
Industrial ☐
Test Well ☒
Stock ☐
Municipal ☐
Other ☐

WELL LOCATION SKETCH

(5) EQUIPMENT:
Rotary ☒ Reverse ☐
Cable ☐ Air ☐
Other ☐ Bucket ☐

(6) GRAVEL PACK:
Yes ☒ No ☐ Size Pea Gravel
Diameter of bore 12¼
Packed from 20 to 207 ft.

(7) CASING INSTALLED:
Steel ☐ Plastic ☒ Concrete ☐

(8) PERFORATIONS:
Type of perforation or size of screen

From ft.	To ft.	Dia. in.	Gage or Wall	From ft.	To ft.	Slot size
0	207	4"	Sch40	160	207	.032

(9) WELL SEAL:
Was surface sanitary seal provided? Yes ☒ No ☐ If yes, to depth 20 ft.
Were strata sealed against pollution? Yes ☐ No ☐ Interval ft.
Method of sealing Bentonite

(10) WATER LEVELS:
Depth of first water, if known 65 ft.
Standing level after well completion ft.

(11) WELL TESTS:
Was well test made? Yes ☐ No ☒ If yes, by whom?
Type of test Pump ☐ Bailer ☐ Air lift ☒
Yield to water at start of test ft. At end of test ft
Discharge gal/min after hours Water temperature
Chemical analysis made? Yes ☐ No ☒ If yes, by whom?
Was electric log made? Yes ☐ No ☒ If yes, attach copy to this report

(12) WELL LOG: Total depth 207 ft. Depth of completed well 207 ft.

from ft.	to ft.	Formation (Describe by color, character, size or material)
0	60	ft fine sand
60	160	ft medium & coarse sand, small gravel.
160	180	ft Blue Grahite (Decompose).

Work started 6-21 1989 Completed 6-23 1989

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

SIGNED [signature] (Well Driller)

NAME SoCal Pump & Well Service, Inc. (Person, firm, or corporation) (Typed or printed)
Address 585 W. Valley Blvd
City Bloomington, California Zip 92316
License No. 510836 Date of this report Nov 1, 1989

R 188 (REV. 7-76) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

WELL #2
EMP. DIST. NO. 2

Girl Scout

SAN BERNARDINO VALLEY WATER CONSERVATION DISTRICT
324 West Citrus Avenue - Redlands, California

YVCWD #29

Should be Well 28

WELL LOG

WILDWOOD CANYON

Well No. 29

Well Owner [redacted]

Location On Mesa East of end of Wildwood Canyon. South of road about ½ mile.

____ ¼; ____ ¼; Sect. ____, T ____, R ____

Drilled by Brockman Date completed ____

Drilling method Rotary

Total depth 606' Size of casing and depth ____ Gauge ____ (Double) (Single)

Type of well Irrigation

Struck water at ____, SWL before perforating ____ after perforating ____ (ft.)

Completion test data: SWL ____ PWL ____ Discharge ____ Hours run ____

Surface elev. 3341.2 Source of information ____

Perforations ____

Depth	Elev. Bot. of Stratum	Material	Thickness
0-10		Top Soil	10
10-28		Sand	18
28-50		Soft Clay	22
50-72		Sandy Rock	22
72-160		Clay	88
160-191		Sand	31
191-205		Soft Clay	14
205-218		Sand, Gravel	13
218-248		Clay	30
248-256		Black sand	8
256-318		Soft Clay	62
318-329		Sand and Rock	11
329-408		Sandy Clay	79
408-420		Sand	12
420-490		Clay and Few Rocks	70
490-494		Sand	4
494-532		Sandy Clay	38
532-565		Clay Rock	33
565-572		Fine Sand	7
572-606		Clay	34
		ELEV. OF WELL 3341.2	

(Continued on reverse side)

Remarks: Pumped 45 miners inches

When filled out, please mail this form to
San Bernardino Valley Water Conservation District
324 West Citrus Ave. Redlands, California

TRIPLICATE
Owner's Copy

29

Page ___ of ___

Owner's Well No. Well #29

Date Work Began Jan Ended Health

Local Permit Agency County of Riv./Service Agency

Permit No. 23720 Permit Date January 23, 2000

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet

No. 766704

DWR USE ONLY — DO NOT FILL IN
STATE WELL NO / STATION NO
LATITUDE LONGITUDE
APN TRS OTHER

GEOLOGIC LOG

ORIENTATION (✓) ___ VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)

DRILLING METHOD ___ FLUID ___

DEPTH FROM SURFACE Ft.	to Ft.	DESCRIPTION *Describe material, grain size, color, etc.*
		Excavate down 6 feet from finish grade.
		Cut off casing, gravel well up to 50 feet.
		Install 2" tremie line and pumped in a 10 sack sand slurry mix, remove tremie and backfill hole.

RECEIVED
YUCAIPA VALLEY
WATER DIST.

TOTAL DEPTH OF BORING ___ Feet

TOTAL DEPTH OF COMPLETED WELL ___ Feet

WELL OWNER

Name [redacted]

Mailing Address [redacted]

CITY Yucaipa STATE CA ZIP 92399

WELL LOCATION

Address Pineview

City Calimesa

County Riverside

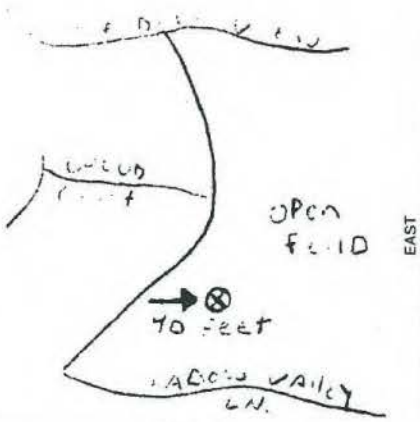
APN Book ___ Page ___ Parcel 403-320-066

Township 2S Range 1W Section 16

Latitude ___ DEG ___ MIN ___ SEC NORTH Longitude ___ DEG ___ MIN ___ SEC WEST

LOCATION SKETCH

NORTH



SOUTH

Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. ***PLEASE BE ACCURATE & COMPLETE.***

ACTIVITY (✓)

___ NEW WELL

MODIFICATION/REPAIR
___ Deepen
___ Other (Specify)

X DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")

PLANNED USES (✓)

WATER SUPPLY
___ Domestic ___ Public
___ Irrigation ___ Industrial

___ MONITORING
___ TEST WELL
___ CATHODIC PROTECTION
___ HEAT EXCHANGE
___ DIRECT PUSH
___ INJECTION
___ VAPOR EXTRACTION
___ SPARGING
___ REMEDIATION
___ OTHER (SPECIFY)

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER ___ (Ft.) BELOW SURFACE

DEPTH OF STATIC WATER LEVEL ___ (Ft.) & DATE MEASURED ___

ESTIMATED YIELD * ___ (GPM) & TEST TYPE ___

TEST LENGTH ___ (Hrs.) TOTAL DRAWDOWN ___ (Ft.)

* *May not be representative of a well's long-term yield.*

CASING (S)

DEPTH FROM SURFACE Ft.	to Ft.	BORE-HOLE DIA. (Inches)	TYPE (✓) BLANK	SCREEN	CONDUCTOR	FILL PIPE	MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)
0	160		X				steel	6"	.250	
160	308			X			steel	8"	.250	

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft.	to Ft.	TYPE CEMENT (✓)	BENTONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)

ATTACHMENTS (✓)

___ Geologic Log
___ Well Construction Diagram
___ Geophysical Log(s)
___ Soil/Water Chemical Analyses
___ Other ___

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME Keith Collier (PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED) SoCal Pump and Well, Inc.

ADDRESS P.O. Box 5483 CITY Riverside STATE CA ZIP 92517

Signed ___ (WELL DRILLER/AUTHORIZED REPRESENTATIVE) DATE SIGNED 6-26-01 C-57 LICENSE NUMBER 510836

DWR 188 REV 11-97

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

WELL #2
WP DIST. NO. 2

297 28 28

SAN BERNARDINO VALLEY WATER CONSERVATION DISTRICT
...½ West Citrus Avenue - Redlands, California

WILDWOOD CANYN

WELL LOG

23/1W - 9F-2
Well No.

Well Owner [redacted]
Location
; ¼, ¼, Section, T, R
Drilled by Trower Date completed Dec. 1959
Drilling method Rotary
Total depth 289' Size of casing and depth 8" & 6" 289 Gauge (Double) (Single)
Type of well
Struck water at , SWL before perforating after perforating (ft.)
Completion test data: SWL PWL Discharge Hours run
Surface elev. 3145 Source of information
Perforations

Depth	Elev. Bot. of Stratum	Material	Thickness
0-2		Surface Soil	2
2-25		Coarse pea gravel	23
25-30		Coarse Sand	5
30-45		Gravel (small) and Sand	15
45-70		Decomposed Granite (soft) and Blue Shale	25
70-85		Fine Sand	15
85-200		Coarse sand and gravel with occasional rock	115
200-215		Light colored decomposed granite	15
215-289		Granite - broken	74
		Standing water level 35' prior to casing and cleaning	
		Casing:	
		8" Id 130	
		8" OD 130-160	
		6" OD 160-289	
		Pump Test January 1960	
		Static W/L 40 Ft.	
		100 GPM 80 Ft.	
		125 GPM 95 Ft.	
		150 GPM 113 Ft.	
		170 GPM 141 Ft.	
		Pump tested about 3 weeks before coming in	

Remarks: 3145'

SHEET of Sheets

well 31 ... 1S/1W-19G2

TRIPLICATE
Owner's Copy

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
WATER WELL DRILLERS REPORT

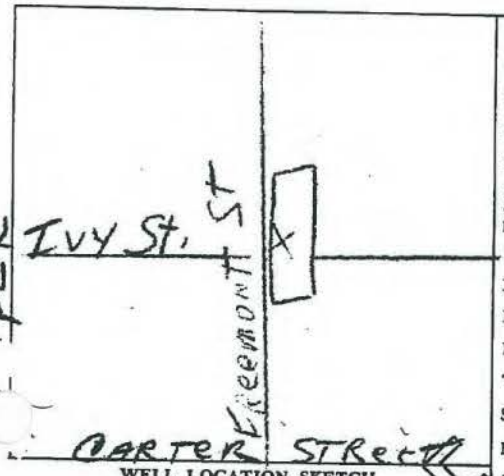
Do not fill in
No. 093756

of Intent No. 199078
Permit No. or Date 11248101

State Well No.
Other Well No.

(1) OWNER: [redacted]
Address [redacted]
City Zip 92399

(2) LOCATION OF WELL (See instructions): Ackerman Well
County San Bernardino Owner's Well Number
Well address if different from above at Ivy Aven ue and Fremont St
Township 1S Range 1W Section 19
Distance from cities, roads, railroads, fences, etc. Assessors Parcel No. 320-181 0- 43 191

WELL LOCATION SKETCH


(3) TYPE OF WORK:
New Well ☐ Deepening ☐
Reconstruction ☒
Reconditioning ☐
Horizontal Well ☐
Destruction ☐ (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:
Domestic ☐
Irrigation ☐
Industrial ☐
Test Well ☐
Stock ☐
Municipal ☐
Other community ☒

(5) EQUIPMENT:
Rotary ☐ Reverse ☒
Cable ☐ Air ☐
Other ☐ Bucket ☐

(6) GRAVEL PACK:
Yes ☐ No ☒ Size
Diameter of bore 24"
Packed from to ft.

(7) CASING INSTALLED:
Steel ☐ Plastic ☐ Concrete ☐

From ft.	To ft.	Dia. in.	Gage or Wall

(8) PERFORATIONS:
Type of perforation or size of screen

From ft.	To ft.	Slot size

(9) WELL SEAL:
Was surface sanitary seal provided? Yes ☒ No ☐ If yes, to depth 50 ft.
Were strata sealed against pollution? Yes ☐ No ☐ Interval ft.
Method of sealing 9 sack grout mix

(10) WATER LEVELS:
Depth of first water, if known ft.
Standing level after well completion ft.

(11) WELL TESTS:
Was well test made? Yes ☐ No ☒ If yes, by whom?
Type of test Pump ☐ Bailer ☐ Air lift ☐
Depth to water at start of test ft. At end of test ft
ge gal/min after hours Water temperature
cal analysis made? Yes ☐ No ☒ If yes, by whom?
s electric log made? Yes ☐ No ☒ If yes, attach copy to this report

(12) WELL LOG: Total depth ft. Depth of completed well ft.
from ft. to ft. Formation (Describe by color, character, size or material)

Work started 11/25/ 19 81 Completed 11/27 19 81

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief
SIGNED John R. Beylik (Well Driller)
NAME BEYLIK DRILLING, INC. (Person, firm, or corporation) (Typed or printed)
Address 591 South Walnut Street
City La Habra, Calif. 90631 Zip 90631
License No. 306291-C57&C-61 Date of this report June 23, 1982

JUN 25 1982
RECEIVED YUCAIPA VALLEY COUNTY WATER DISTRICT

ORIGINAL
FOR PUBLIC USE
WATER CODE SEC. 13752
DO NOT

R 188 (REV. 7-76) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

JUN 25 1982

1S/1W-19B1

ORIGINAL
File Original, Duplicate and Triplicate with the
REGIONAL WATER POLLUTION
CONTROL BOARD No.
(Insert appropriate number)

WATER WELL DRILLERS REPORT
(Sections 7076, 7077, 7078, Water Code)

STATE OF CALIFORNIA

Well #33

Do Not Fill In
No 21869
State Well No.
Other Well No. 33 YUCWO

(1) OWNER:
Name [redacted]
Address

(2) LOCATION OF WELL:
County Owner's number, if any—
R. F. D. or Street No.
IVY ST. OFF BRYANT

(3) TYPE OF WORK (check):
New well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in Item 11.

(4) PROPOSED USE (check):
Domestic ☐ Industrial ☐ Municipal ☐
Irrigation ☒ Test Well ☐ Other ☐

(5) EQUIPMENT:
Rotary ☐
Cable ☒
Dug Well ☐

(6) CASING INSTALLED:
SINGLE ☒ DOUBLE ☐

From ft.	to ft.	Diam.	Gage or Wall
0	470	12	4

If gravel packed

Diameter of Bore	from ft.	to ft.

Type and size of shoe or well ring
Size of gravel:
Describe joint

(7) PERFORATIONS:
Type of perforator used MILLS
Size of perforations 3/8 in., length, by 1 1/2 in.

From ft.	to ft.	Perf. per row	Rows per ft.
340	460	5	1

(8) CONSTRUCTION:
✓ NO CEMENT SANITARY SEAL
Was a surface sanitary seal provided? ☒ Yes ☐ No To what depth 200 ft.
Were any strata sealed against pollution? ☒ Yes ☐ No If yes, note depth of strata
From 0 ft. to 200 ft.
Method of Sealing WELD PIPE SOLID

(9) WATER LEVELS:
Depth at which water was first found 300 ft.
Standing level before perforating 255 ft.
Standing level after perforating 245 ft.

(10) WELL TESTS:
Was a pump test made? ☐ Yes ☐ No If yes, by whom?
Yield: gal./min. with ft. draw down after hrs.
Temperature of water Was a chemical analysis made? ☐ Yes ☐ No
Was electric log made of well? ☐ Yes ☐ No

(11) WELL LOG:
Total depth ft. Depth of completed well ft.
Formation: *Describe by color, character, size of material, and structure.*

0 ft. to 20 ft.	ROCK	
20 " 50 "	SANDY CLAY	
50 " 88 "	SANDY CLAY	PEA GRAVEL
88 " 94 "	SANDY CLAY	
94 " 97 "	ROCK	
97 " 148 "	SANDY CLAY	ROCK
148 " 197 "	SANDY CLAY	
197 " 221 "	SANDY CLAY	SMALL GRAVEL
221 " 366 "	SANDY CLAY	ROCK
366 " 393 "	SANDY ROCK	D G
393 " 455 "	D G	CLAY
455 " 465 "	D G	SAND ROCK CLAY
465 " 479 "	D G	CLAY
479 " 496 "	SAND ROCK	D G HARD

Work started 19 . Completed 19

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
NAME R & W Drilling Inc
(Person, firm, or corporation) (Type or print)
Address 25525 Redlands Blvd
Loma Linda Calif.
[SIGNED] RD White
Well Driller
License No. 231340 Dated 6/1 , 19 65

9568B 3 54 5 M GU N SPO

DWR FORM NO. 246 (REV 3-54)

1S/1W-20M1

DUPLICATE
Retain this copy

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES

WATER WELL DRILLERS REPORT

Do Not Fill In
№ 104927
State Well No.
Other Well No. #36

(1) OWNER:

Name [redacted]
Address [redacted]

(2) LOCATION OF WELL:

County San Bernardino Owner's number, if any 36
Township, Range, and Section T 1S; R 1W; Sec. 20
Distance from cities, roads, railroads, etc. 360' So. of center of Ivy Ave., 33' East of center of Jefferson St. Yuc.

(3) TYPE OF WORK (check):

New Well [X] Deepening [ ] Reconditioning [ ] Destroying [ ]
If destruction, describe material and procedure in Item 11.

(4) PROPOSED USE (check):

Domestic [X] Industrial [ ] Municipal [X]
Irrigation [ ] Test Well [ ] Other [ ]

(5) EQUIPMENT:

Rotary [ ]
Cable [X]
Other [ ]

(6) CASING INSTALLED:

STEEL: OTHER:
SINGLE [X] DOUBLE [ ]

From ft.	To ft.	Diam.	Gage or Wall
0	443	12"	1/4"

If gravel packed

Diameter of Bore	From ft.	To ft.

Type of shoe or well ring: 12 x 3/4 x 12" Size of gravel:
Describe joint All joints butt weld

(7) PERFORATIONS OR SCREEN:

Type of perforation or name of screen Mills

From ft.	To ft.	Perf. per row	Rows per ft.	Size in. x in.
251	260	6	3" centers	5/16 x 2 1/4
260	430	6	12" centers	5/16 x 2 1/4

(8) CONSTRUCTION:

Was a surface sanitary seal provided? Yes [X] No [ ] To what depth 50 ft.
Were any strata sealed against pollution? Yes [ ] No [X] If yes, note depth of strata
From ft. to ft.
From ft. to ft.
Method of sealing 12 sacks cement-sand mix, pumped

(9) WATER LEVELS:

Depth at which water was first found, if known 245 ft.
Standing level before perforating, if known 245 ft.
Standing level after perforating and developing 245 ft.

(10) WELL TESTS:

Was pump test made? Yes [ ] No [ ] If yes, by whom?
Yield: gal./min. with ft. drawdown after hrs.
Temperature of water Was a chemical analysis made? Yes [ ] No [ ]
Was electric log made of well? Yes [ ] No [ ] If yes, attach copy
To be in future

(11) WELL LOG:

Total depth 440 ft. Depth of completed well 440 ft.
Formation: *Describe by color, character, size of material, and structure*

ft. to	ft.	
0	60	Brown clay, gravel, boulders
60	155	Brown sandy clay, sharp gravel, few boulders
155	233	Brown sandy clay with small gravel embedded
233	251	Brown clay, sand, small gravel-tight
251	260	Brown clay, sand, small gravel-loose
260	430	Brown tight clay, sand, small gravel
430	440	Blue decomposed granite

Copies to:
[ ] Directors
[ ] General Manager
[ ] Attorney
[X] District Engineer
[ ] Counseling Engineer
[ ] Auditor
[X] Superintendent
[ ] Agenda
[ ] Shop
File
Date Routed

RECEIVED
FEB 18 1976
BY Y.V.C.W.D.

into annular space from 50' depth to surface.

Work started 12/18 19 75 Completed 2/3 19 76

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Kirkland Well Service
(Person, firm, or corporation) (*Typed or printed*)
Address 32291 Dunlap Blvd.
Yucaipa, Ca. 92399
[SIGNED] K. Kirkland
(Well Driller)
License No. 168847 Dated Feb. 14, 19 76

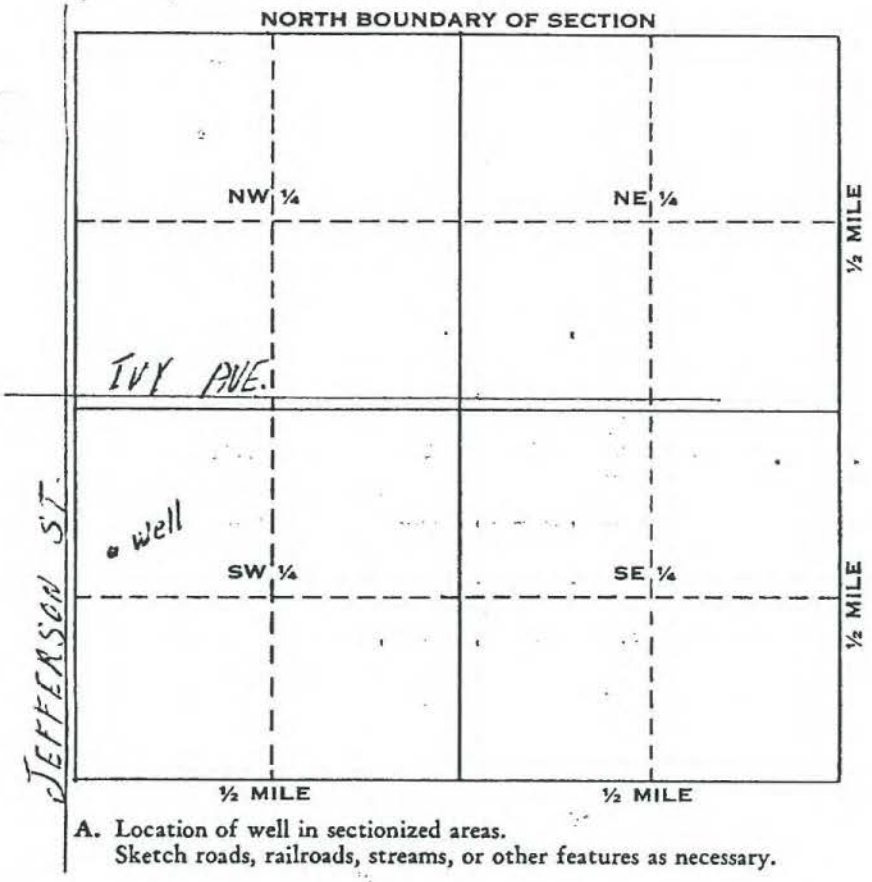
SKETCH LOCATION OF WELL ON REVERSE SIDE

DWR 188 (REV. 9-68)

67139-750 8-72 30M TRIP OT OSP

YUCAIPA AREA

WELL LOCATION SKETCH

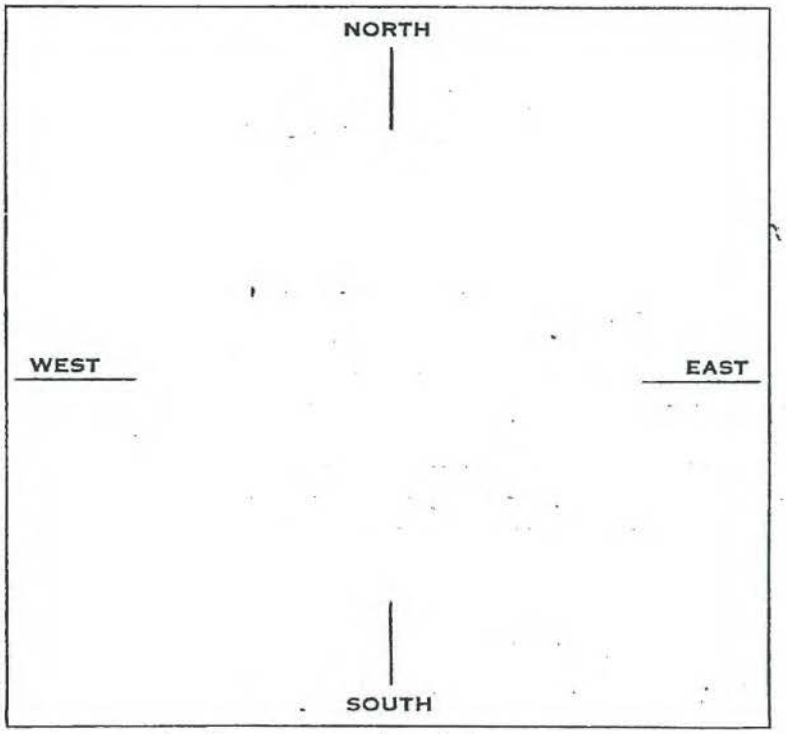


Township 1 N/S

Range 1 E/W

Section No. 20

A. Location of well in sectionized areas.
Sketch roads, railroads, streams, or other features as necessary.



B. Location of well in areas not sectionized.
Sketch roads, railroads, streams, or other features as necessary.
Indicate distances.

1S/1W-20M1

DUPLICATE
Retain this copy

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES

WATER WELL DRILLERS REPORT

Do Not Fill In

№ 104927

State Well No. Well #36

Other Well No.

(1) OWNER:

Name [redacted]

Address [redacted]

(2) LOCATION OF WELL:

County San Bernardino Owner's number, if any 36

Township, Range, and Section T 1S; R 1W; Sec. 20

Distance from cities, roads, railroads, etc. 360' So. of center of Ivy Ave., 33' East of center of Jefferson St. Ync.

(3) TYPE OF WORK (check):

New Well ☒ Deepening ☐ Reconditioning ☐ Destroying ☐

If destruction, describe material and procedure in Item 11.

(4) PROPOSED USE (check):

Domestic ☒ Industrial ☐ Municipal ☒
Irrigation ☐ Test Well ☐ Other ☐

(5) EQUIPMENT:

Rotary ☐
Cable ☒
Other ☐

(6) CASING INSTALLED:

STEEL: OTHER:
SINGLE ☒ DOUBLE ☐

From ft.	To ft.	Diam.	Gage or Wall
0	443	12"	1/4"

If gravel packed

Diameter of Bore	From ft.	To ft.

Size of shoe or well ring: 12 x 3/4 x 12" Size of gravel:

Describe joint All joints butt weld

(7) PERFORATIONS OR SCREEN:

Type of perforation or name of screen Mills

From ft.	To ft.	Perf. per row	Rows per ft.	Size in. x in.
251	260	6	8" centers	5/16 x 2 1/4
260	430	6	12" centers	5/16 x 2 1/4

(8) CONSTRUCTION:

Was a surface sanitary seal provided? Yes ☒ No ☐ To what depth 50 ft.

Were any strata sealed against pollution? Yes ☐ No ☒ If yes, note depth of strata

From ft. to ft.

From ft. to ft.

Method of sealing 12 sacks cement-sand mix, pumped into annular space from 50' depth to surface.

(9) WATER LEVELS:

Depth at which water was first found, if known 245 ft.

Standing level before perforating, if known 245 ft.

Standing level after perforating and developing 245 ft.

(10) WELL TESTS:

Was pump test made? Yes ☐ No ☐ If yes, by whom?

gal./min. with ft. drawdown after hrs.

Temperature of water Was a chemical analysis made? Yes ☐ No ☐

Was electric log made of well? Yes ☐ No ☐ If yes, attach copy

To be in future

(11) WELL LOG:

Total depth 440 ft. Depth of completed well 440 ft.

Formation: *Describe by color, character, size of material, and structure*

ft. to	ft.	
0	60	Brown clay, gravel, boulders
60	155	Brown sandy clay, sharp gravel, few boulders
155	233	Brown sandy clay with small gravel embedded
233	251	Brown clay, sand, small gravel-tight
251	260	Brown clay, sand, small gravel-loose
260	430	Brown tight clay, sand, small gravel
430	440	Blue decomposed granite

Copies to:
☐ Directors
☐ General Manager
☐ Attorney
☑ District Engineer
☐ Counselling Engineer
☐ Auditor
☑ Superintendent
☐ Agenda
☐ Shop

RECEIVED
FEB 18 1976
BY Y.V.C.W.D.

File

Date routed

Work started 12/18 19 75 Completed 2/3 19 76

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Kirkland Well Service
(Person, firm, or corporation) (*Typed or printed*)

Address 32291 Dunlap Blvd.
Yucaipa, Ca. 92399

[SIGNED] K. Kirkland
(Well Driller)

License No. 168847 Dated Feb. 14, 19 76

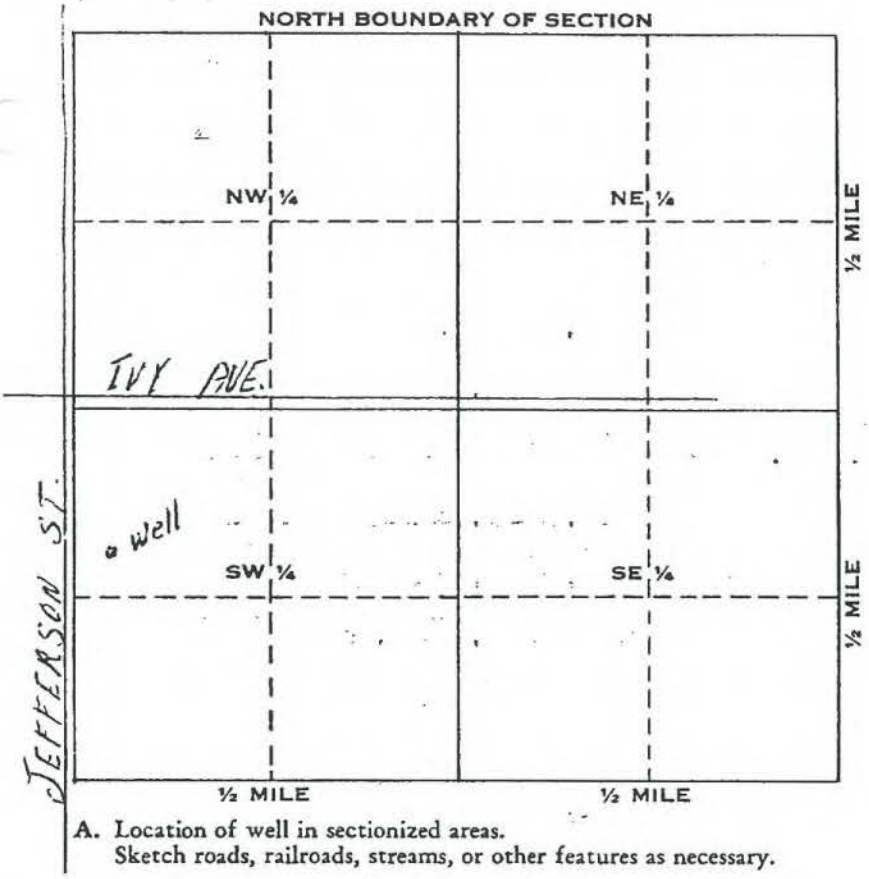
SKETCH LOCATION OF WELL ON REVERSE SIDE

DWR 188 (REV. 9-68)

67139-790 8-72 30M TRIP OT OSP

YUCAIPA AREA

WELL LOCATION SKETCH

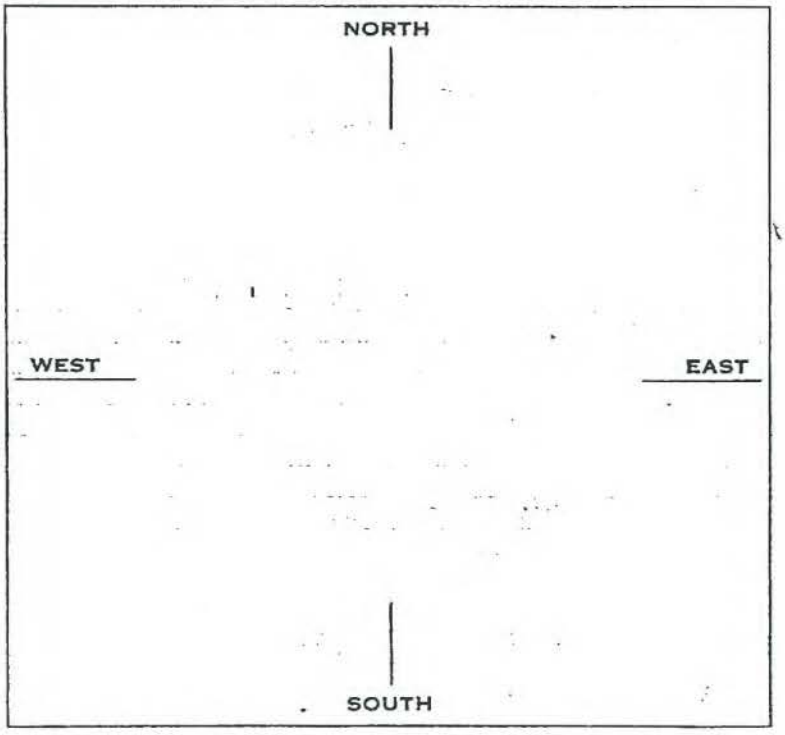


Township 1 N/S

Range 1 E/W

Section No. 20

A. Location of well in sectionized areas.
Sketch roads, railroads, streams, or other features as necessary.



B. Location of well in areas not sectionized.
Sketch roads, railroads, streams, or other features as necessary.
Indicate distances.

(2S/1W-17F1 (well (39)

DUPLICATE
Driller's Copy

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES

WATER WELL DRILLERS REPORT

Do not fill in

No. 069230

Permit No.
License Permit No. or Date 9024

State Well No.
Other Well No. Well #2

(1) OWNER:
Name [redacted]
Address [redacted]
City Zip

(2) LOCATION OF WELL (See instructions):
County Riverside Owner's Well Number
Well address if different from above
Township 2S Range 1W Section 17
Distance from cities, roads, railroads, fences, etc.
Mt. St.

WELL LOCATION SKETCH


(3) TYPE OF WORK:
New Well [X] Deepening [ ]
Reconstruction [ ]
Reconditioning [ ]
Horizontal Well [ ]
Destruction [ ] (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:
Domestic [X]
Irrigation [ ]
Industrial [ ]
Test Well [ ]
Stock [ ]
Municipal [ ]
Other [ ]

(5) EQUIPMENT:
Rotary [X] Reverse [ ]
Cable [ ] Air [ ]
Other [ ] Bucket [ ]

(6) GRAVEL PACK:
Yes [X] No [ ] Size 5/16 x 7
Diameter of bore 8 to 413 is 10", 413 to 540 is 6¼"
Packed from 50 ft. to 413 ft.

(7) CASING INSTALLED:
Steel [X] Plastic [ ] Concrete [ ]

From ft.	To ft.	Dia. in.	Gage or Wall
0	413	6-5/8	.188

(8) PERFORATIONS:
Type of perforation or size of screen

From ft.	To ft.	Slot size
73	93	6 rows
113	133	12 cuts
153	173	2½ x 1/8"
193	253	
273	293	
313	333	
353	413	

(9) WELL SEAL:
Was surface sanitary seal provided? Yes [X] No [ ] If yes, to depth 50 ft.
Were strata sealed against pollution? Yes [ ] No [X] Interval ft.
Method of sealing cement grout

(10) WATER LEVELS:
Depth of first water, if known 45 ft.
Standing level after well completion 30 ft.

(11) WELL TESTS:
Was well test made? Yes [X] No [ ] If yes, by whom? driller
Type of test Pump [ ] Bailer [ ] Air lift [X]
Depth water at start of test 400 ft. ft. At end of test ft.
75 gal/min after hours Water temperature
Was electric log made? Yes [ ] No [X] If yes, by whom?
Was electric log made? Yes [ ] No [X] If yes, attach copy to this report

(12) WELL LOG:
Total depth 540 ft. Depth of completed well 540 ft.

from ft.	to ft.	Formation (Describe by color, character, size or material)
0	10	Top soil
10	13	Sand
13	16	Roc
16	33	Clay
33	48	Sand & clay
48	50	Rock
50	75	Clay
75	81	Rock
81	96	Clay & rock
96	180	Blue granite
180	185	Quarts & decomposed granite
185	205	Granite
205	226	Sandstone
226	265	Granite
265	272	Clay
272	540	Granite with fractured areas at about 4 ft. depths at 358, 380, 446 with quartz, 481, 510, and 519, Quartz fracture at 340

Perf. - continued

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
SIGNED Donald B. Trussell (Well Driller)
NAME AMERICAN DRILLING, INC. (Person, firm, or corporation) (Typed or printed)
Address 104 W. Main
City Aguanga, CA Zip 92307
License No. 324684 Date of this report Feb. 3, 1980

Work started Jan. 22 19 80 Completed Feb. 6 19 80

DWR 188 (REV 7-76) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

DO NOT RECORD

(2S/1W-17L1 (

YVWD #40

TRIPLICATE
Owner's Copy

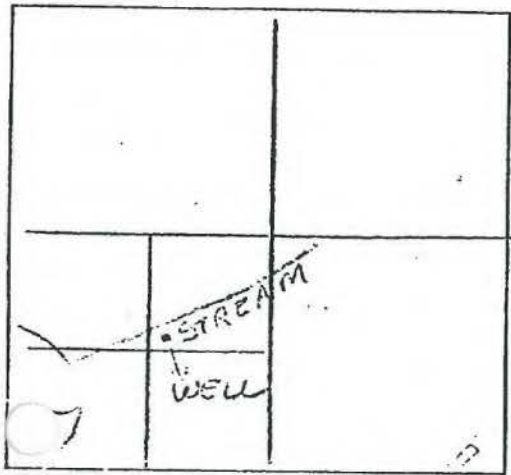
STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
WATER WELL DRILLERS REPORT

Do not fill in
No. 218802

Notice of Intent No.
Permit No. or Date
State Well No.
Other Well No. Well #3

(1) OWNER: Name [redacted]
Address [redacted]
City [redacted] Zip 92320

(2) LOCATION OF WELL (See instructions):
County Riverside Owner's Well Number
Well address if different from above
Township 2S Range 1W Section 17
Distance from cities, roads, railroads, fences, etc.
NW¼, SW¼,



WELL LOCATION SKETCH

(3) TYPE OF WORK:
New Well ☒ Deepening ☐
Reconstruction ☐
Reconditioning ☐
Horizontal Well ☐
Destruction ☐ (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:
Domestic ☐
Irrigation ☐
Industrial ☐
Test Well ☐
Stock ☐
Municipal ☒
Other ☐

(5) EQUIPMENT:
Rotary ☒ Reverse ☐
Cable ☐ Air ☐
Other ☐ Bucket ☐

(6) GRAVEL PACK:
Yes ☒ No ☐ Size 5/16 x 4
Diameter of bore 10"
Packed from 50 to 349 ft.

(7) CASING INSTALLED:
Steel ☒ Plastic ☐ Concrete ☐

From ft.	To ft.	Dia. in.	Cage or Wall
0	349	6-5/8	.188

(8) PERFORATIONS:
Type of perforation or size of screen

From ft.	To ft.	Slot size
69	349	6 rows 12 cuts 2½ x .120

(9) WELL SEAL:
Was surface sanitary seal provided? Yes ☒ No ☐ If yes, to depth 50 ft.
Were strata sealed against pollution? Yes ☐ No ☐ Interval ☒ ft.
Method of sealing cement grout

(10) WATER LEVELS:
Depth of first water, if known 40 ft.
Standing level after well completion 29 ft.

(11) WELL TESTS:
Was well test made? Yes ☐ X No ☐ If yes, by whom? driller
Type of test Pump ☐ Bailer ☐ Air lift ☐ X
Depth to water at start of test ft. At end of test ft
100+ gal/min after hours Water temperature
Chemical analysis made? Yes ☐ No ☐ X If yes, by whom?
Electric log made? Yes ☐ No ☐ X If yes, attach copy to this report

(12) WELL LOG: Total depth 349 ft. Depth of completed well 349 ft.

from ft.	to ft.	Formation (Describe by color, character, size or material)
0	13	Soft dirt
13	26	Fractured white rock
26	28	Brown clay
28	35	Gray clay
35	145	Fractured white rock with water increasing at 60', 100', & 120'
145	150	Very fractured
150	162	Firm to hard white rock
162	165	Fractured
165	180	Firm to hard white rock w/ increase in water
180	195	Firm to hard black rock
195	201	Firm to hard white rock
201	204	Fractured
204	209	Firm to hard
209	212	Fractured w/ more water
212	220	Fairly hard granite
221	224	Fractured
225	234	Firm to hard gray granite, w/ increase in water
234	245	Light fracture
245	255	Granite with increase in water
255	260	Heavily fractured with water
260	264	Fairly hard
264	295	Fractured white rock w/ increase in water
295	349	Dark gray rock, fractured

Work started Dec. 12 19 80 Completed Dec. 19 19 80

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
SIGNED [signature] (Well Driller)
NAME AMERICAN DRILLING, INC. (Person, firm, or corporation) (Typed or printed)
Address 104 W. Main,
City Aguanga, CA Zip 92302
License No. 324684 Date of this report Dec. 22, 1980

DWR 188 (REV. 7-76) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

1S/2W-36A01

TRIPLICATE
Owner's Copy

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
WATER WELL DRILLERS REPORT

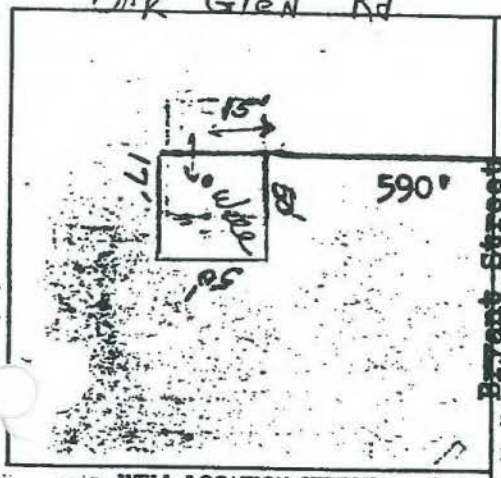
Do not fill in
No. 217102

...tent No. 195450
...rmit No. or Date 02098204

State Well No.
Other Well No. #44

(1) OWNER: [redacted] Water District
Address [redacted]
City San Bernardino, Cal. Zip 92412

(2) LOCATION OF WELL (See instructions):
County San Bernardino Owner's Well Number
Well address if different from above
Township 1S Range 2W Section 36
Distance from cities, roads, railroads, fences, etc.
Oak Glen Rd



WELL LOCATION SKETCH

(3) TYPE OF WORK:
New Well [X] Deepening [ ]
Reconstruction [ ]
Reconditioning [ ]
Horizontal Well [ ]
Destruction [ ] (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:
Domestic [ ]
Irrigation [ ]
Industrial [ ]
Test Well [ ]
Stock [ ]
Municipal [X]
Other [ ]

(5) EQUIPMENT:
Rotary [X] Reverse [ ]
Cable [ ] Air [ ]
Other [ ] Bucket [ ]

(6) GRAVEL PACK: 5/16 x 16
Yes [X] No [ ] Size
Diameter of bore 22 in.
Packed from 0 to 660 ft.

(7) CASING INSTALLED:
Steel [X] Plastic [ ] Concrete [ ]

From ft.	To ft.	Dia. in.	Gage or Wall
0	50	16"	5/16
0	660	16"	5/16

(8) PERFORATIONS:
Type of perforation or size of screen: Roscoe Moss Louver

From ft.	To ft.	Slot size
275	650	1/8" x Std.

(9) WELL SEAL:
Was surface sanitary seal provided? Yes [ ] No [ ] If yes, to depth 50 ft.
Were strata sealed against pollution? Yes [X] No [ ] Interval ft.
Method of sealing cement grout

(10) WATER LEVELS:
Depth of first water, if known ft.
Standing level after well completion 311' ft.

(11) WELL TESTS:
Was well test made? Yes [ ] No [ ] If yes, by whom? C.V. Pump
Type of test Pump [X] Bailer [ ] Air lift [ ]
Depth to water at start of test 311 ft. At end of test 386 ft.
1000 gal/min after 24 hours Water temperature
...al analysis made? Yes [ ] No [ ] If yes, by whom?
...lectric log made? Yes [X] No [ ] If yes, attach copy to this report

(12) WELL LOG: Total depth 660 ft. Depth of completed well 660 ft.

from ft.	to ft.	Formation (Describe by color, character, size or material)
0	50	fine sand with large rock mix
50	65	fine sand with large rock size of hand.
65	110	medium & coarse sand mixed
110	120	Medium & coarse sand with small rock, mixed
120	180	Medium & coarse sand with small gravel & short streaks of sandy clay
180	320	Medium & coarse sand with small gravel
320	360	Medium & Coarse sand, dark
360	380	Med. & coarse sand with short streak of brown clay
380	660	Decomposed granite

Work started 2/14 19 82 Completed 5/20/82 19

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

SIGNED Coachella Valley Pump & Supply, Inc. (Well Driller)
NAME (Person, firm, or corporation) (Typed or printed)
Address P.O. Drawer QQQ
City Indio, Calif. Zip 92202
License No. 164541 Date of this report 8/9/82

DWR 188 (REV. 7-76) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

welenco

WELL ENGINEERING SURVEYS

ELECTRIC LOG

FILING NO

COMPANY McCALLA BROS.

WELL #46

FIELD YUCAIPA

STATE CALIFORNIA COUNTY SAN BERNARDINO

LOCATION 2ND ST @ OAK GLEN Rd.

OTHER SERVICES NONE

SEC ____ TWP ____ RGE ____

Permanent Datum: GROUND LEVEL, Elev. ____

Log Measured From G.L. 0 Ft. Above Perm. Datum

Drilling Measured From GROUND LEVEL

Elev.: K.B. ____ D.F. ____ G.L. ____

FIELD PRINT

Date	3/16/88				
Run No.	ONE				
Depth—Driller	1155'				
Depth—Logger	1155'				
Btm Log Inter.	1154'				
Top Log Inter.	100'				
Casing—Driller	36" @ 50'	@	@	@	
Casing—Logger	NOT REACHED				
Bit Size	17.5"				
Type Fluid in Hole	WATER				
Dens. | Visc.	N/A				
pH | Fluid Loss	N/A | ml	ml	ml	ml	
Source of Sample	PIT				
R_m @ Meas. Temp.	22.0 @ 63 °F	@ °F	@ °F	@ °F	
R_{mf} @ Meas. Temp.	22.0 @ 63 °F	@ °F	@ °F	@ °F	
R_{mc} @ Meas. Temp.	N/A @ °F	@ °F	@ °F	@ °F	
Source: R_{mf} R_{mc}	MEAS.				
R_m @ BHT	N/A @ °F	@ °F	@ °F	@ °F	
Time Since Circ.	2 HOURS				
Max. Rec. Temp.	N/A °F	°F	°F	°F	
Equip. | Location	DU-1 | L.A.				
Recorded By	RIDDER				
Witnessed By					

Fold Here — This Heading and L... Conform To API RP 31...

REMARKS

Changes in Mud Type or Additional Samples

Date | Sample No.					
Depth—Driller					
Type Fluid in Hole					
Dens. | Visc.					
ph | Fluid Loss		ml			
Source of Sample					
R_m @ Meas. Temp.	@ °F	@ °F	@ °F	@ °F	
R_{mf} @ Meas. Temp.	@ °F	@ °F	@ °F	@ °F	
R_{mc} @ Meas. Temp.	@ °F	@ °F	@ °F	@ °F	
Source: R_{mf} | R_{mc}	—	—	—	—	
R_m @ BHT	@ °F	@ °F	@ °F	@ °F	
R_{mf} @ BHT	@ °F	@ °F	@ °F	@ °F	
R_{mc} @ BHT	@ °F	@ °F	@ °F	@ °F	

Type Log: E-LOG

Depth: @ SEE REMARKS

Scale Up Hole: 0-2000 Mat. #7

Scale Down Hole

Equipment Data

	Run No.	Tool Type	Pad Type	Tool Position
	ONE	NORMAL	—	FREE

Other

SPONTANEOUS POTENTIAL millivolts

10 + -

Depths

RESISTIVITY ohms. m²/m

SHORT NORMAL 16 Inch

0 200

RESISTIVITY ohms. m²/m

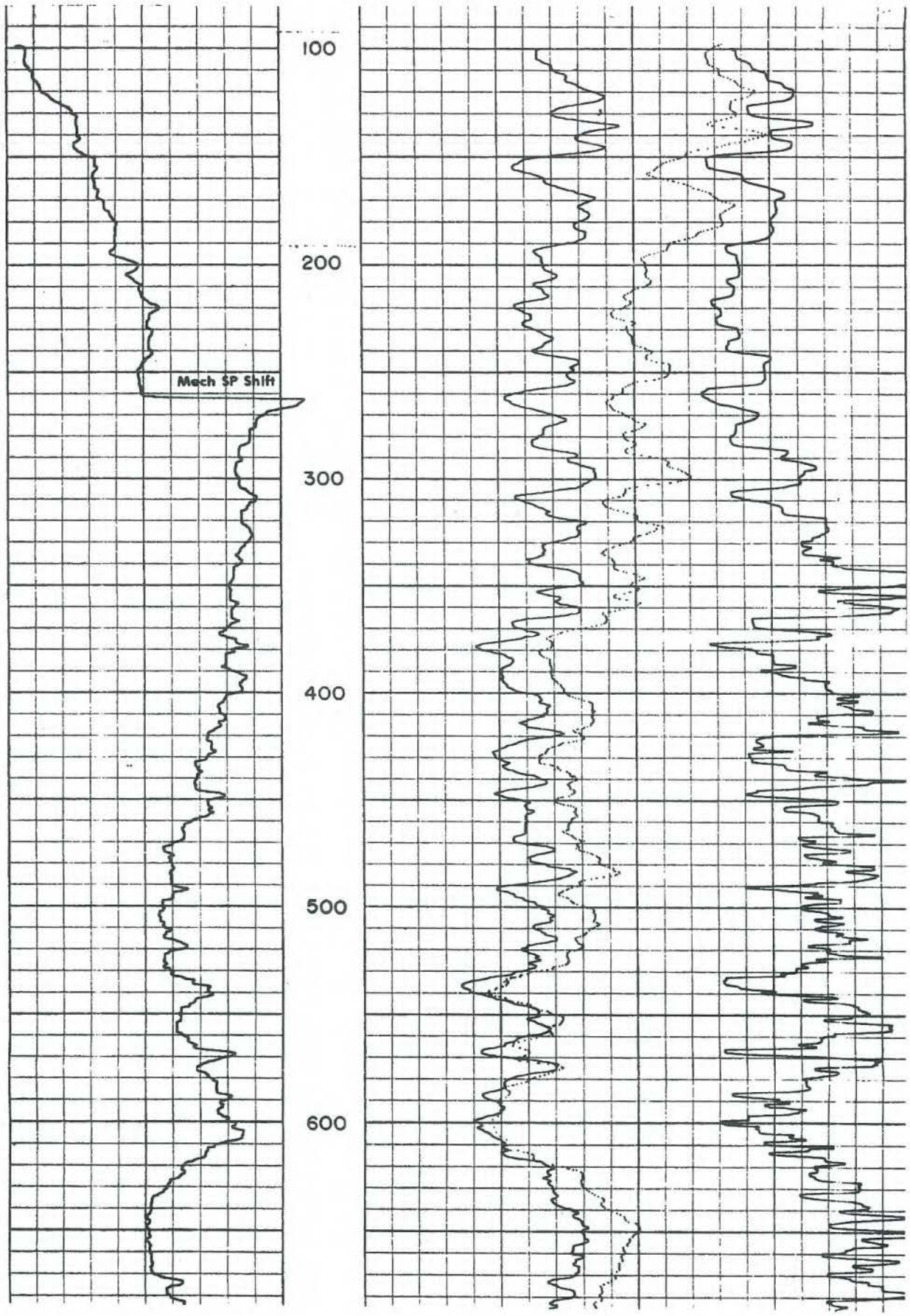
LONG NORMAL 64 Inch

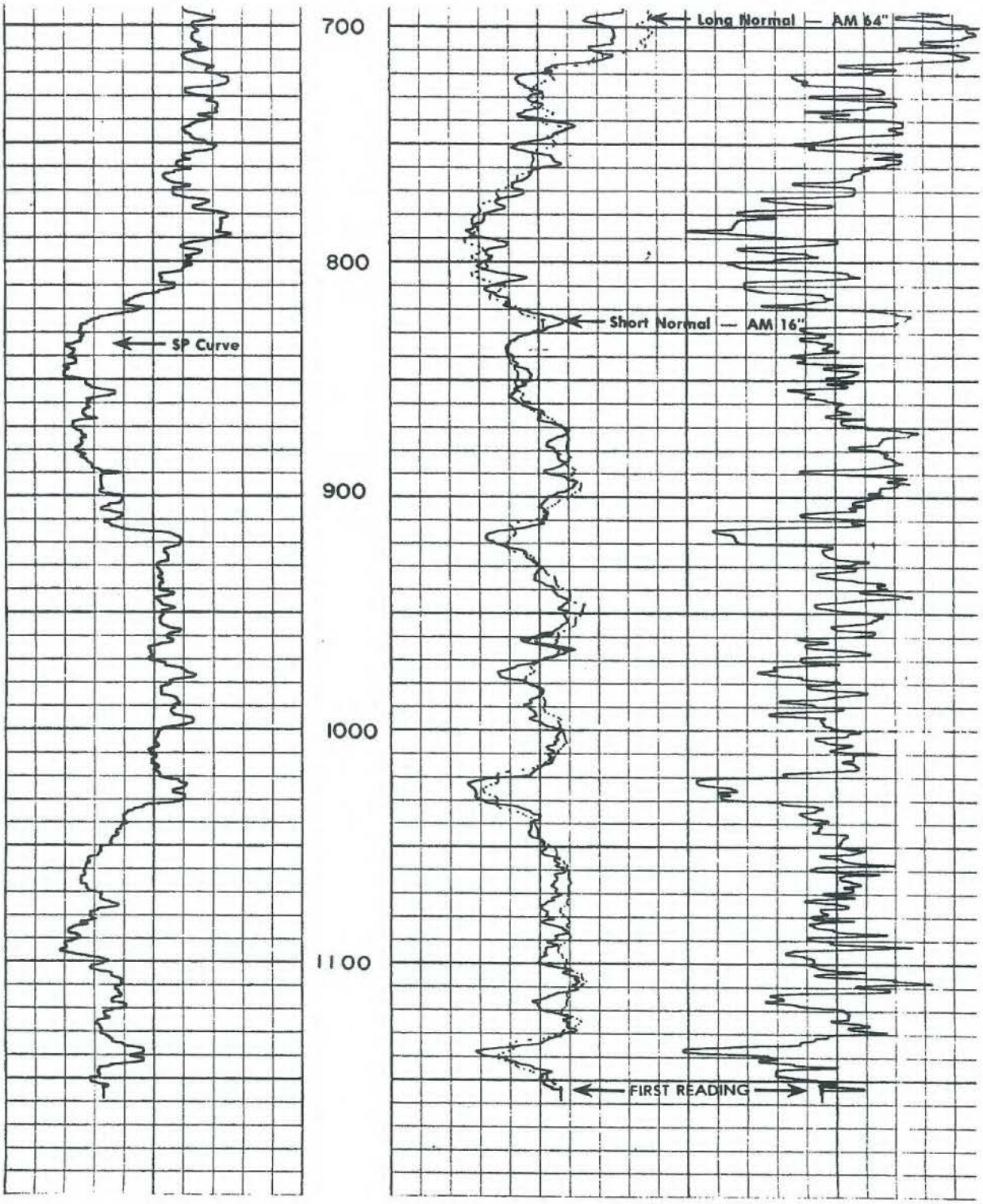
0 200

RESISTANCE Borehole

MW 46

15/2W-36N1


100
200
Mech SP Shift
300
400
500
600


700
800
900
1000
1100
SP Curve
Long Normal — AM 64"
Short Normal — AM 16"
FIRST READING

County of San Bernardino – Environmental Public Works Agency
ENVIRONMENTAL HEALTH SERVICES DEPARTMENT
385 North Arrowhead Avenue • San Bernardino, CA 92415-0160

1&2

Do Not Fill In
Permit No. 01062808
Expiration 1-25-89
FF
FA
SN

WELL PERMIT

PLEASE PRINT: Job # 5113 Well # 46

1. OWNER: Name [redacted]
Mailing Address [redacted]
City Yucaipa Zip
Phone No. 714) 797-5117

2. DATE OF WORK *(approximate)*:
Start 2/15/88 Complete 4/1/88

3. WELL DRILLER *(Check One)*:
☐ Owner ☒ Contractor McCalla Bros.
Name

4. WELL USE *(check)*:
☒ Community ☐ Industrial
☐ Individual ☐ Test
☐ Agricultural ☐ Other
☐ Dairy ☐ Horizontal

TYPE OF WORK *(check)*:
☒ New ☐ Reconstruction ☐ Destruction

Items 6 through 10 to be estimated for new wells, and exact for all other wells.

6. ANNULAR SEAL: Depth 50 ft.
Furnished by: ☐ Owner ☒ Contractor
☐ Driven Conductor Dia. 32 in., Wall (Gage) .250
☐ Sealing Material concrete, Thickness 4 in.

7. DEPTH OF WELL *(feet)*:
Proposed 800 Existing
DIAMETER OF BORE *(in.)*: 28

8. CASING INSTALLED:
☒ Steel ☐ Plastic ☐ Other

From (ft.)	To (ft.)	Dia. (in.)	Wall (Gage)
0	500	~~250~~ 16"	.250
500	800	~~250~~ 16"	.250 perforated

GRAVEL PACK: ☒ Yes ☐ No
From 0 to 800 ft.

9. PERFORATIONS *(if applicable)*:
From 500 to 800 ft.

10. SEALED ZONES *(if applicable)*:
From 0 to 50 ft.

11. GENERAL LOCATION MAP: 31-C4

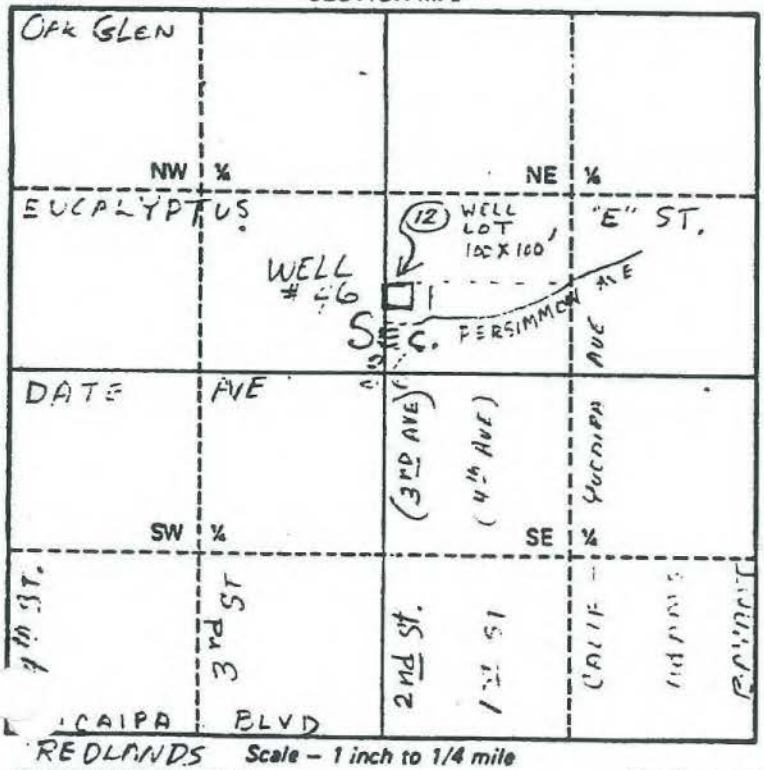
(a) Sketch location of well, name(s) and location of road(s) on section map.

(b) Township 1S N/S Range 1W E/W
Section 31

(c) Assessor's Parcel No. 303-191-12

(d) Solid or liquid waste disposal site within two miles?
☐ Yes ☒ No
Location:

SECTION MAP



REDLANDS Scale – 1 inch to 1/4 mile

Do Not Fill In

Fee Stamp	Date Stamp
DATE 1-8-88	
AMOUNT 252.00	
RECEIPT NO. 21084	
BY:	

PAID

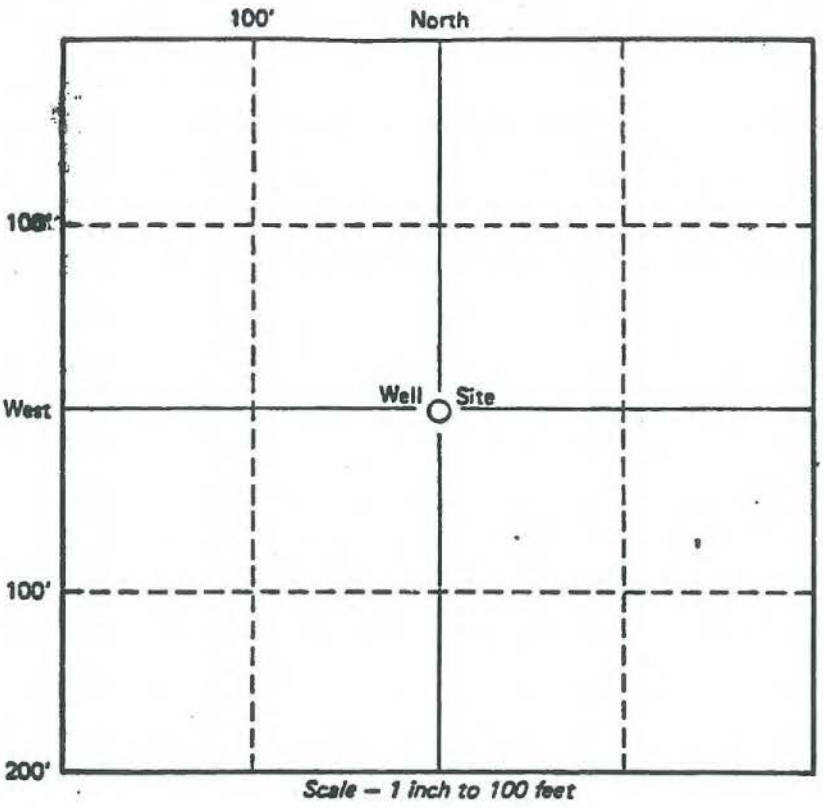
FEB 1988
RECEIVED
YUCAIPA VALLEY WATER DIST.

03-14785-631 Rev. 11/82

Continue on Reverse Side
AS N.A.V.

Var Permit

1 of 2



12. PLOT PLAN:

(a) In perspective to the well site, sketch and label the following items: well lot property lines other wells *(include abandoned wells)*, sewage disposal systems *(sewers, septic tanks, leaching fields, seepage pits, cesspools)*, lakes and ponds, water courses and animals or fowl kept.

(b) Indicate the distance in *feet*, of any of the following which are within 200 ft. of the well site:

Other wells	
Sewers	
Septic tanks	
Leaching fields	
Seepage pits	
Cesspools	
Lakes and ponds	
Water courses	
Animals or fowl kept	

NONE OF THE ABOVE

13. I have read this application and agree to comply with all laws regulating the type of work being performed. The California Labor Code requires Workers' Compensation Insurance as a prerequisite to permit issuance unless the applicant signs the following certificate:

☐ I certify that in the performance of the work for which this permit is issued, I shall not employ any person in any manner so as to become subject to the Workers' Compensation laws of California.

Owner's Signature _____ Date _____

☐ Contractor's Signature Gilbert Romero Date 1/15/88 Reg. No. _____

DISPOSITION OF PERMIT

(Do Not Fill In)

☑ Approved subject to the following:

A. Notify the Department, Rudy Ruiz (714) 387-4666, twenty-four (24) hours in advance to make an inspection of the following operations:

☑ Prior to sealing of the annular space or filling of the conductor casing.

☐ Verify the depth of the conductor (outer) casing prior to further drilling and installation of the inner casing.

☑ After installation of the surface protective slab and pumping equipment.

☐ During destruction of wells, prior to pouring the sealing material.

B. Submit to the Department within thirty (30) days after completion of work, a copy of:

☑ Water Well Driller's Report ☑ Bacteriological Analysis ☑ Inorganic Chemical Analysis

C. Other _____

DENIED _____

1S/2W-36G1 Well 46 143

TRIPLICATE
Owner's Copy

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
WATER WELL DRILLERS REPORT

Do not fill in
No. 158791

f Intent No.
rmit No. or Date
State Well No.
Other Well No.

(1) OWNER: Name [redacted]
Address [redacted]
City Zip 92399

(2) LOCATION OF WELL (See instructions):
County San Bernaddino Owner's Well Number 46
Well address if different from above
Township 1S Range 2W Section 36
Distance from cities, roads, railroads, fences, etc.
50' E. of 2nd St.
350' N. of Persimmon

WELL LOCATION SKETCH

(3) TYPE OF WORK:
New Well ☒ Deepening ☐
Reconstruction ☐
Reconditioning ☐
Horizontal Well ☐
Destruction ☐ (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:
Domestic ☐
Irrigation ☐
Industrial ☐
Test Well ☐
Stock ☐
Municipal ☒
Other ☐

(5) EQUIPMENT:
Rotary ☒ Reverse ☐
Cable ☐ Air ☐
Other ☐ Bucket ☐

(6) GRAVEL PACK:
Yes ☒ No ☐ Size Brawley 4x8
Diameter of bore 28"
Packed from 0 to 1150 ft.

(7) CASING INSTALLED:
Steel ☒ Plastic ☐ Concrete ☐

(8) PERFORATIONS:
Method Horizontal Louvre

From ft.	To ft.	Dia. in.	Gage or Wall	From ft.	To ft.	Slot size
0	340	16	.250	1		
340	800	16	.250	340	800	.060
800	1130	16	.312	800	1130	.060

(9) WELL SEAL:
Was surface sanitary seal provided? Yes ☒ No ☐ If yes, to depth 50 ft.
Were strata sealed against pollution? Yes ☐ No ☒ Interval ft.
Method of sealing 32" Conductor Cemented in 40" Bore

(10) WATER LEVELS:
Depth of first water, if known 187' ft.
Standing level after well completion 184' ft.

(11) WELL TESTS:
Was well test made? Yes ☒ No ☐ If yes, by whom? McCalla Bros.
Type of test Pump ☒ Bailer ☐ Air lift ☐
Depth to water at start of test 187 ft. At end of test 321 ft.
Discharge 2800 gal/min after 24 hours Water temperature
Chemical analysis made? Yes ☒ No ☐ If yes, by whom? Y.V.W.D.
Electric log made? Yes ☒ No ☐ If yes, attach copy to this report

(12) WELL LOG: Total depth 1154 ft. Depth of completed well 1150 ft.

from ft.	to ft.	Formation (Describe by color, character, size or material)
0	50	Conductor
50	64	Sand, Gravel & Sm. & Med. Rock
64	73	Fine Sand, Gravel & Clay
73	107	Fine Sand, Gravel & Small Rock
107	123	Fine Sand
123	132	Gravel & Rock
132	140	Gravel & Boulders
140	152	Fine Sand & Gravel
152	166	Cemented Sand & Gravel
166	205	Sand, Sm. & Med. Gravel & Sm. Rock
205	208	White Granite Ledge
208	272	Sand Gravel, Rock & Clay
272	274	Small Boulders
274	279	Sand, Gravel & Rocks
279	282	Boulders
282	292	Sand, Gravel & Rocks
292	298	Rocks & Boulders
298	302	Sand, Gravel & Rocks
302	310	Sand, Clay & Sm. Gravel
310	314	Granite, Boulders
314	328	Sand, Gravel & Clay
328	342	Sand, Gravel, Sm. & Med.
342	354	Sand, Gravel & Boulders
354	372	Sand, Gravel & Clay
372	390	Sand, Gravel & Sm. Rocks
390	414	Sand, Gravel, Sm. Rocks & Clay
414	426	Sm. Boulders & Large Rocks
426	448	Sand, Gravel & Clay
448	450	Sm. Boulders
450	470	Sand, Gravel, Sm. Boulders & Rocks
470	553	Sand, Sm. Gravel
553	586	Sand, Sm. & Med. Gravel
586	596	Sand, Gravel w/Clay
596	604	Fine Sand
604	613	Fine Sand, & Sm. Gravel
613	636	Gravel & Large Rocks
636	640	Rock Boulder
640	644	Boulders

Work started 3-3 19 88 Completed 4-1 19 88

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

SIGNED (Well Driller)
NAME McCalla Bros., Division of Layne Western C
(Person, firm, or corporation) (Typed or printed)
Address 3132 W. 17th St.
City Santa Ana, CA Zip 92703
License No. 510011 Date of this report 8-10-88

WR 188 (REV. 7-76) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

- CONTINUED -

1S/2W-36G1

-243

Ken 46

TRIPLICATE
Owner's Copy

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES

WATER WELL DRILLERS REPORT

Do not fill in
No. 277299

Notice of Intent No. _____
Local Permit No. or Date _____

State Well No. _____
Other Well No. _____

(1) OWNER: Name [redacted]
Address _____
City _____ ZIP _____

(2) LOCATION OF WELL (See instructions):
County _____ Owner's Well Number _____
Well address if different from above _____
Township _____ Range _____ Section _____
Distance from cities, roads, railroads, fences, etc. _____

WELL LOCATION SKETCH

(3) TYPE OF WORK:
New Well ☐ Deepening ☐
Reconstruction ☐
Reconditioning ☐
Horizontal Well ☐
Destruction ☐ (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:
Domestic ☐
Irrigation ☐
Industrial ☐
Test Well ☐
Municipal ☐
Other ☐
(Describe)

(5) EQUIPMENT:
Rotary ☐ Reverse ☐
Cable ☐ Air ☐
Other ☐ Bucket ☐

(6) GRAVEL PACK:
Yes ☐ No ☐ Size
Diameter of bore _____
Packed from _____ ft. to _____ ft.

(7) CASING INSTALLED:
Steel ☐ Plastic ☐ Concrete ☐

From ft.	To ft.	Dia. in.	Gage or Wall

(8) PERFORATIONS:
Type of perforation or size of screen

From ft.	To ft.	Slot size

(9) WELL SEAL:
Was surface sanitary seal provided? Yes ☐ No ☐ If yes, to depth _____ ft.
Were strata sealed against pollution? Yes ☐ No ☐ Interval _____ ft.
Method of sealing _____

(10) WATER LEVELS:
Depth of first water, if known _____ ft.
Standing level after well completion _____ ft.

(11) WELL TESTS:
Was well test made? Yes ☐ No ☐ If yes, by whom? _____
Type of test Pump ☐ Bailer ☐ Air lift ☐
Depth to water at start of test _____ ft. At end of test _____ ft.
Discharge _____ gal/min after _____ hours Water temperature _____
Chemical analysis made? Yes ☐ No ☐ If yes, by whom? _____
Was electric log made Yes ☐ No ☐ If yes, attach copy to this report

(12) WELL LOG: Total depth 1154 ft. Completed depth 1150 ft.
from ft to ft. Formation (Describe by color, character, size or material)

CONTINUED FROM FORM# 158791

644	651	Sand, Sm. & Med. Gravel, Rocks
651	657	Boulders
657	682	Sand
682	704	Sand, Gravel & Rock
704	709	Sand, Sm. & Med. Gravel
709	732	Sand, Sm. Gravel, Sandy Clay
732	747	Gravel & Rocks
747	752	Sand & Clay
752	765	Sand, Gravel & Clay
765	767	Small Boulders
767	773	Sand, Gravel & Clay
773	775	Small Boulders
775	786	Sandy Clay, Sm. Gravel
786	800	Course Sand, Sm. Gravel & Clay
800	806	Large Boulders
806	828	Course Sand, Sm. Gravel & Clay
828	833	Sand, Sm. & Med. Gravel
833	854	Gravel, Sandy Clay
854	894	Sand, Sm. Gravel & Rock
894	897	Boulders
897	921	Sm. & Med. Lrg. Gravel & Rock
921	927	Lrg. Boulders
927	939	Sand, Gravel & Rocks
939	942	Boulders
942	965	Med. Lrg. Gravel & Rocks
965	968	Boulders
968	975	Sm., Med. & Large Gravel & Rocks
975	987	Sand, Sm. & Med. Gravel
987	992	Fine Sand & Sandy Clay
992	1021	Sand, Sm. & Med. Gravel & Rocks
1021	1044	Fine Sand & Sandy Clay
1044	1060	Fine Sand & Sm. Gravel
1060	1064	Boulders
1064	1085	Fine Sand & Small Gravel
1085	1092	Sm. Boulders & Rocks
1092	1098	Sand, Sm. & Med. Gravel & Rocks
1098	1105	Fine Sand, Sm. Gravel & Rocks
1105	1109	Boulders

Work started _____ 19__ Completed _____ 19__

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

Signed _____ (Well Driller)
NAME McCalla Bros., Div. of Layne-Western Co. (Person, firm, or corporation) (Typed or printed)
Address _____
City _____ ZIP _____
License No. _____ Date of this report _____

DWR 188 (REV. 12-86) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

86 96355

VOID
NOT FOR PUBLIC USE
WATER COMMISSION

1S/2W-36G1 VCM 4th 343

TRIPLICATE
Owner's Copy

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES

WATER WELL DRILLERS REPORT

Do not fill in
No. 277300

Notice of Intent No. _____
Local Permit No. or Date _____

State Well No. _____
Other Well No. _____

(1) OWNER: Name [redacted]
Address _____
City _____ ZIP _____

(2) LOCATION OF WELL (See instructions):
County _____ Owner's Well Number _____
Well address if different from above _____
Township _____ Range _____ Section _____
Distance from cities, roads, railroads, fences, etc. _____

WELL LOCATION SKETCH

(3) TYPE OF WORK:
New Well ☐ Deepening ☐
Reconstruction ☐
Reconditioning ☐
Horizontal Well ☐
Destruction ☐ (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:
Domestic ☐
Irrigation ☐
Industrial ☐
Test Well ☐
Municipal ☐
Other ☐
(Describe)

(5) EQUIPMENT:
Rotary ☐ Reverse ☐
Cable ☐ Air ☐
Other ☐ Bucket ☐

(6) GRAVEL PACK:
Yes ☐ No ☐ Size
Diameter of bore _____
Packed from _____ to _____ ft.

(7) CASING INSTALLED:
Steel ☐ Plastic ☐ Concrete ☐

From ft.	To ft.	Dia. in.	Gage or Wall

(8) PERFORATIONS:
Type of perforation or size of screen

From ft.	To ft.	Slot size

(9) WELL SEAL:
Was surface sanitary seal provided? Yes ☐ No ☐ If yes, to depth _____ ft.
Were strata sealed against pollution? Yes ☐ No ☐ Interval _____ ft.
Method of sealing _____

(10) WATER LEVELS:
Depth of first water, if known _____ ft.
Standing level after well completion _____ ft.

(11) WELL TESTS:
Was well test made? Yes ☐ No ☑ If yes, by whom? _____
Type of test Pump ☐ Bailer ☐ Air lift ☐
Depth to water at start of test _____ ft. At end of test _____ ft.
Discharge _____ gal/min after _____ hours Water temperature _____
Chemical analysis made? Yes ☐ No ☐ If yes, by whom? _____
Was electric log made Yes ☐ No ☐ If yes, attach copy to this report

(12) WELL LOG: Total depth 1154 ft. Completed depth 1150 ft.
from ft. to ft. Formation (Describe by color, character, size or material)

CONTINUED FROM FORM# 277299

1109 - 1110 Sand
1110 - 1118 Drilling (hard) Lrg. Boulders
1118 - 1126 Lrg. Boulder Steel (hard) drilling
1126 - 1135 Sand, Sm. & Med. Gravel & Rocks
1135 - 1150 Sand, Gravel & Clay
1150 - 1154 Bedrock T.D.

Work started _____ 19____ Completed _____ 19____

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

Signed _____ (Well Driller)
NAME McCalla Bros., Division of Layne Western Co.
(Person, firm, or corporation) (Typed or printed)
Address _____
City _____ ZIP _____
License No. _____ Date of this report _____

DWR 188 (REV. 12-86) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM 86 96355

CONFIDENTIAL NOT FOR PUBLIC USE WATER CODE SEC. 13752

QUADRUPLICATE
Use of comply with local requirements

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
WATER WELL DRILLERS REPORT

Do not fill in
No. 157622

Notice of Intent No.
Log Permit No. or Date 12809 Herbert
State Well No. 2S/2W-13P
Other Well No.

(1) OWNER: Name [redacted]
Address [redacted]
City Redlands, CA Zip 92373

(2) LOCATION OF WELL (See instructions):
County Riverside Owner's Well Number
Well address if different from above
Township Range Section
Distance from cities, roads, railroads, fences, etc.

WELL LOCATION SKETCH

(3) TYPE OF WORK:
New Well ☒ Deepening ☐
Reconstruction ☐
Reconditioning ☐
Horizontal Well ☐
Destruction ☐ (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:
Domestic ☒
Irrigation ☐
Industrial ☐
Test Well ☐
Stock ☐
Municipal ☐
Other ☐

(5) EQUIPMENT:
Rotary ☐ Reverse ☐
Cable ☐ Air ☒
Other ☐ Bucket ☐

(6) GRAVEL PACK:
Yes ☐ No ☐ Size
Diameter of bore
Packed from to ft.

(7) CASING INSTALLED:
Steel ☒ Plastic ☒ Concrete ☐

From ft.	To ft.	Dia. in.	Gage or Wall
0	300	4	

(8) PERFORATIONS:
Type of perforation or size of screen

From ft.	To ft.	Slot size
300	100	1/8
100	0	1/8

(9) WELL SEAL:
Was surface sanitary seal provided? Yes ☒ No ☐ If yes, to depth 20 ft.
Were strata sealed against pollution? Yes ☐ No ☐ Interval ft.
Method of sealing driven steel

(10) WATER LEVELS:
Depth of first water, if known 180 ft.
Standing level after well completion ft.

(11) WELL TESTS:
Was well test made? Yes ☒ No ☐ If yes, by whom? JJWP
Type of test Pump ☐ Bailer ☐ Air lift ☐
Depth to water at start of test ft. At end of test ft
10+ gal/min after hours Water temperature
Chemical analysis made? Yes ☐ No ☒ If yes, by whom?
Electric log made? Yes ☐ No ☒ If yes, attach copy to this report

(12) WELL LOG: Total depth ft. Depth of completed well ft.
from ft. to ft. Formation (Describe by color, character, size or material)

0-20 soft sandy topsoil to sandy& grav
20-40 colored gravel & sand some boulc
40-60 colored gravel & sand
60-80 colored gravel & sand (pit drop)
80-100 colored gravel & some grey clay
100-120 firm grey clay & sand
120-140 brown clay & sand (hard)
140-160 brown clay & sand stone
160-180 brown clay sand stone
180-200 hard clayish((brown) sandstone
200-220 Hard brown clayish sandstone
220-240 hard sandstone & clay
240-260 hard sandstone some clay
260-280 hard sand stone some clay
280-300 hard sand stone some clay

Work started 19 Completed 19

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

SIGNED (Well Driller)
NAME Jack Jones Wells & Pumps (Person, firm, or corporation) (Typed or printed)
Address P. O. Box 2031
City Hemet, CA 92343
License No. 436011 Date of this report 7-9-85

DSSI 172

88 (REV. 7-76) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

FOR PUBLIC RECORDS

well #48

ORIGINAL
File with DWR

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES

WATER WELL DRILLERS REPORT

Do not fill in
No. 341080

Notice of Intent No 243716
Local Permit No. or Date 016174

025/02W-24L025

State Well No. 025/02W-24L01S
Other Well No

(1) OWNER: Name [redacted]
Address [redacted]
City Yucaipa, CA ZIP 92399

(2) LOCATION OF WELL (See instructions):
County Riverside Owner's Well Number 48
Well address if different from above Singleton Road
Township 2S Range 2W Section 24
Distance from cities, roads, railroads, fences, etc.

(3) TYPE OF WORK:
New Well XX Deepening ☐
Reconstruction ☐
Reconditioning ☐
Horizontal Well ☐
Destruction ☐ (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:
Domestic ☐
Irrigation ☐
Industrial ☐
Test Well ☐
Municipal XX
Other ☐ (Describe)

WELL LOCATION SKETCH

(5) EQUIPMENT
Rotary XX Reverse ☐
Cable ☐ Air ☐
Other ☐ Rucket ☐

(6) GRAVEL PACK
Yes XX No ☐ Size 4 x 8
Diameter of bore 26
Packed from 0 ft. to 1180 ft.

(7) CASING INSTALLED
Steel XX Plastic ☐ Concrete ☐

From ft.	To ft.	Dia. in.	Gage or Wall
0	380	16 5/8	5/16
870	930	"	"
1160	1180	"	"

(8) PERFORATIONS
Type of perforation or size of screen

From ft.	To ft.	Slot size
380	870	.060
930	1160	.060

(9) WELL SEAL:
Was surface sanitary seal provided? Yes XX No ☐ If yes, to depth 50 ft.
Were strata sealed against pollution? Yes ☐ No ☐ Interval ft.
Method of sealing concrete grout

(10) WATER LEVELS:
Depth of first water if known ft.
Standing level after well completion ft.

(11) WELL TESTS:
Was well test made? Yes ☐ No ☐ If yes, by whom?
Type of test Pump ☐ Bailer ☐ Air lift ☐
Depth to water at start of test ft. At end of test ft.
Discharge gal/min after hours Water temperature
Chemical analysis made? Yes ☐ No ☐ If yes, by whom?
Was electric log made Yes ☐ No ☐ If yes, attach copy to this report

(12) WELL LOG: Total depth 1230 ft. Completed depth 1180 ft.

from ft.	to	ft.	Formation (Describe by color, character, size or material)
0	-	30	Sand & gravel
30	-	32	Silty clay and sand
32	-	63	Sand & gravel
63	-	115	Silty clay and sand
115	-	129	Sand and gravel
129	-	137	Silty clay with sand
137	-	150	Sand and gravel
150	-	162	Silty clay
162	-	188	Sand and gravel
188	-	201	Sand, gravel and cobbles
201	-	224	Silty clay with sand
224	-	243	Sand, gravel and cobbles
243	-	258	Silty clay with sand
258	-	286	Sand, gravel and cobbles
286	-	321	Silty clay with sand
321	-	338	Sand and gravel
338	-	371	Silty clay with sand
371	-	385	Silty clay (greenish)
385	-	414	Sand and gravel
414	-	451	Sand and gravel (rough)
451	-	508	Sand and gravel
508	-	545	Sand, gravel and silt
545	-	562	Sand, gravel and silty clay
562	-	674	Sand and gravel
674	-	698	Silty clay with sand
698	-	711	Sand and gravel
711	-	757	Silty clay with sand
757	-	770	Sand and gravel
770	-	783	Silty clay
783	-	825	Sand and gravel
825	-	860	Silty clay with interbedded sand layers
860	-	875	Silty clay, more sand
875	-	1132	Silty clay with interbedded sand layers
1132	-	1161	Sand & gravel with silty clay
1161	-	1230	Silty clay with sand

Work started 2-12 19 90 Completed 3-9 19 90

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
Signed Gary S. Hall, Jr. (Well Driller)
NAME Howard Pump, Inc. (Person, firm, or corporation) (Typed or printed)
Address P.O. Box 1249
City Barstow, CA ZIP 92312-1249
License No 356814 Date of this report

DWR 188 (REV. 12-88) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

VOID UNLESS PUBLIC WATER SYSTEM DO NOT COPY

MW #48

TRIPLICATE
Owner's Copy

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES

WATER WELL DRILLERS REPORT

Do not fill in
No. 341080

Notice of Intent No. 243716
Local Permit No. or Date 016174

2S/2W - 24L2

State Well No. _____
Other Well No. _____

(1) OWNER: Name [redacted]
Address [redacted]
City Yucaipa, CA ZIP 92399

(2) LOCATION OF WELL (See instructions):
County Riverside Owner's Well Number 48
Well address if different from above Singleton Road
Township 2S Range 2W Section 24
Distance from cities, roads, railroads, fences, etc. _____

WELL LOCATION SKETCH

(3) TYPE OF WORK:
New Well XX Deepening ☐
Reconstruction ☐
Reconditioning ☐
Horizontal Well ☐
Destruction ☐ (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:
Domestic ☐
Irrigation ☐
Industrial ☐
Test Well ☐
Municipal XX
Other ☐
(Describe)

(5) EQUIPMENT:
Rotary XX Reverse ☐
Cable ☐ Air ☐
Other ☐ Bucket ☐

(6) GRAVEL PACK:
Yes XX No ☐ Size 4 x 8
Diameter of bore 26"
Packed from 0 to 1180 ft.

(7) CASING INSTALLED:
Steel XX Plastic ☐ Concrete ☐

From ft.	To ft.	Dia. in.	Gage or Wall
0	380	16 5/8	5/16
870	930	"	"
1160	1180	"	"

(8) PERFORATIONS
Type of perforation or size of screen

From ft.	To ft.	Slot size
380	870	.060
930	1160	.060

(9) WELL SEAL:
Was surface sanitary seal provided? Yes XX No ☐ If yes, to depth 50 ft.
Were strata sealed against pollution? Yes ☐ No ☐ Interval _____ ft.
Method of sealing concrete grout

(10) WATER LEVELS:
Depth of first water, if known _____ ft.
Standing level after well completion _____ ft.

(11) WELL TESTS:
Was well test made? Yes ☐ No ☐ If yes, by whom? _____
Type of test Pump ☐ Bailer ☐ Air lift ☐
Depth to water at start of test _____ ft. At end of test _____ ft.
Discharge _____ gal/min after _____ hours Water temperature _____
Chemical analysis made? Yes ☐ No ☐ If yes, by whom? _____
Was electric log made Yes ☐ No ☐ If yes, attach copy to this report

(12) WELL LOG: Total depth 1230 ft. Completed depth 1180 ft.

from ft.	to	ft.	Formation (Describe by color, character, size or material)
0	–	30	Sand & gravel
30	–	32	Silty clay and sand
32	–	63	Sand & gravel
63	–	115	Silty clay and sand
115	–	129	Sand and gravel
129	–	137	Silty clay with sand
137	–	150	Sand and gravel
150	–	162	Silty clay
162	–	188	Sand and gravel
188	–	201	Sand, gravel and cobbles
201	–	224	Silty clay with sand
224	–	243	Sand, gravel and cobbles
243	–	258	Silty clay with sand
258	–	286	Sand, gravel and cobbles
286	–	321	Silty clay with sand
321	–	338	Sand and gravel
338	–	371	Silty clay with sand
371	–	385	Silty clay (greenish)
385	–	414	Sand and gravel
414	–	451	Sand and gravel (rough)
451	–	508	Sand and gravel
508	–	545	Sand, gravel and silt
545	–	562	Sand, gravel and silty clay
562	–	674	Sand and gravel
674	–	698	Silty clay with sand
698	–	711	Sand and gravel
711	–	757	Silty clay with sand
757	–	770	Sand and gravel
770	–	783	Silty clay
783	–	825	Sand and gravel
825	–	860	Silty clay with interbedded sand layers
860	–	875	Silty clay, more sand
875	–	1132	Silty clay with interbedded sand layers
1132	–	1161	Sand & gravel with silty clay
1161	–	1230	Silty clay with sand

Work started 2-12 19 90 Completed 3-9 19 90

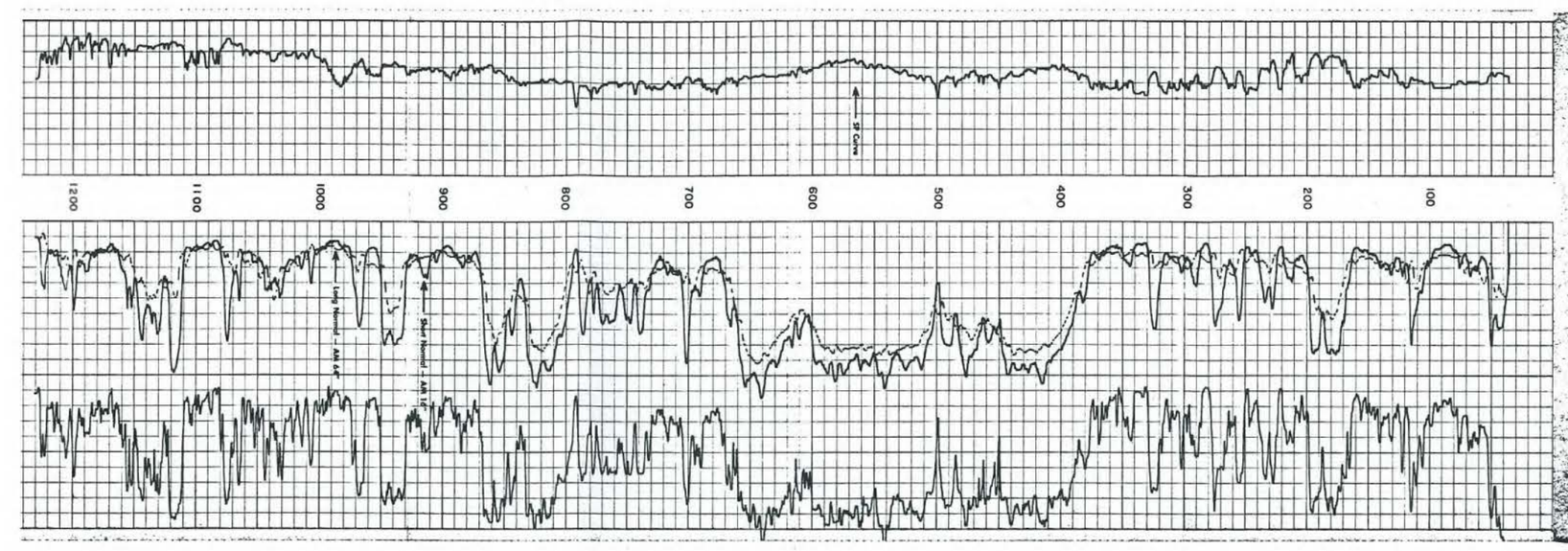
WELL DRILLER'S STATEMENT:

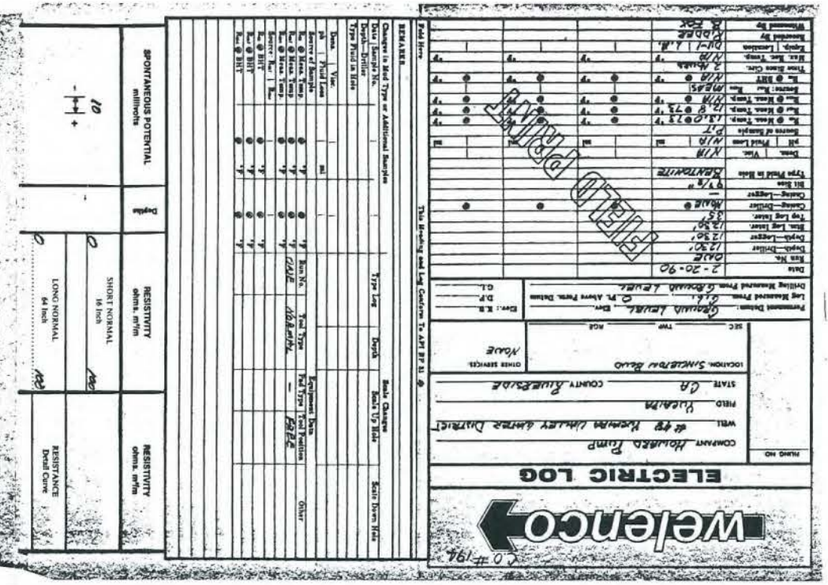
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

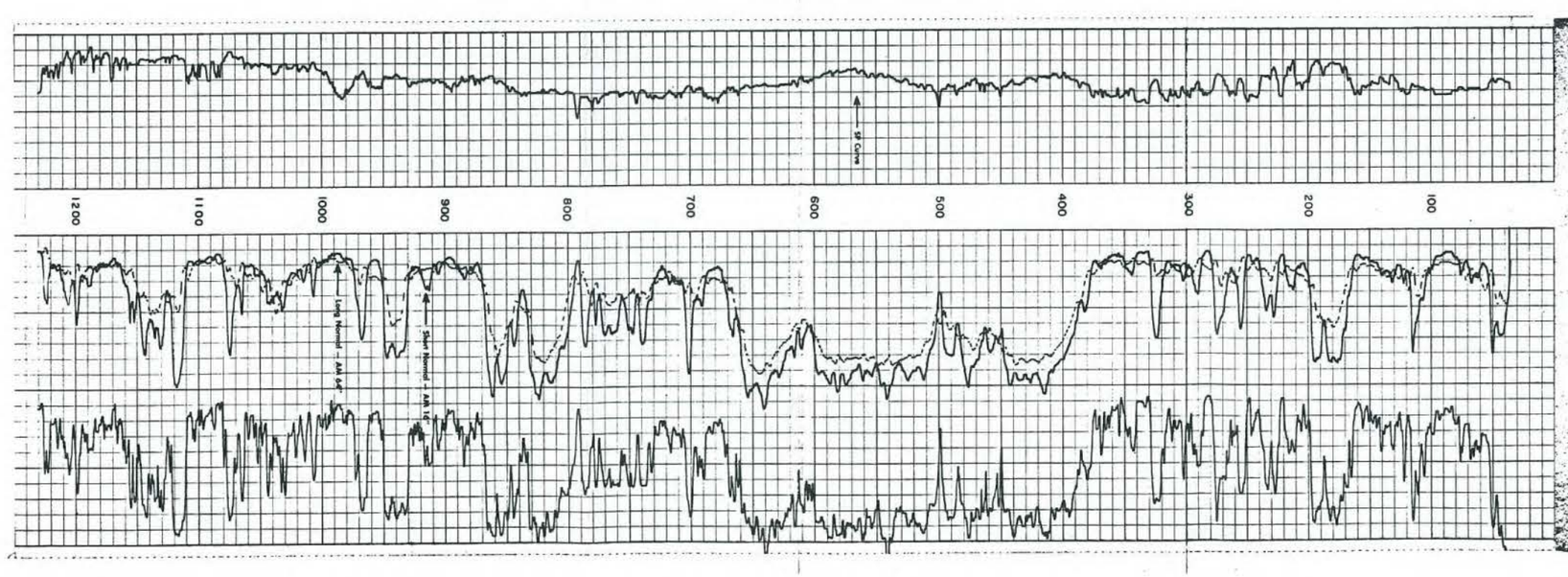
Signed Gary S. Hall, Jr. (Well Driller)
NAME Howard Pump, Inc. (Person, firm, or corporation) (Typed or printed)
Address P.O. Box 1249
City Barstow, CA ZIP 92312-1249
License No. _____ Date of this report _____

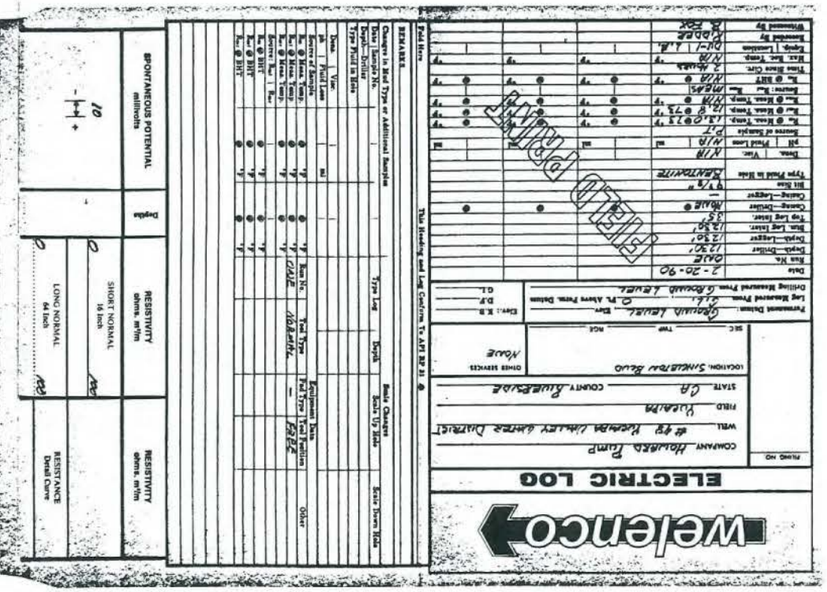
COPY
VOID IN PUBLIC USE
NOT FOR PUBLIC DISCLOSURE
WATER CODE SECTION 13752

DWR 188 (REV. 12-86) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM 86 96355



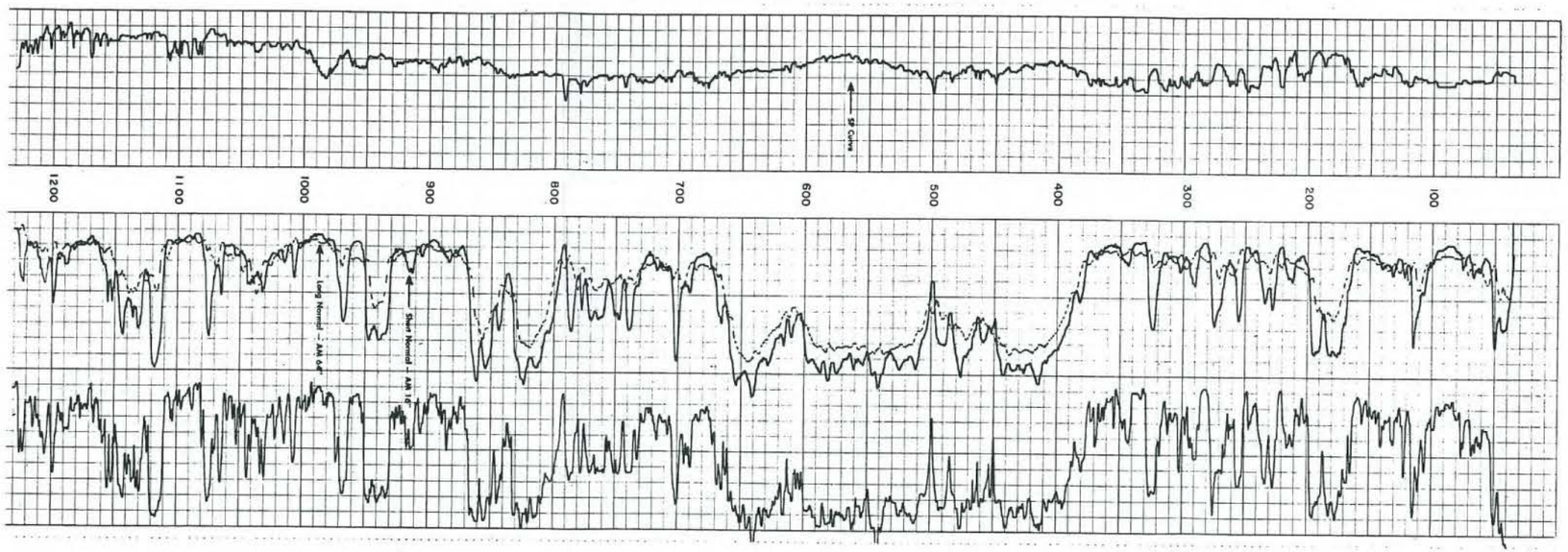


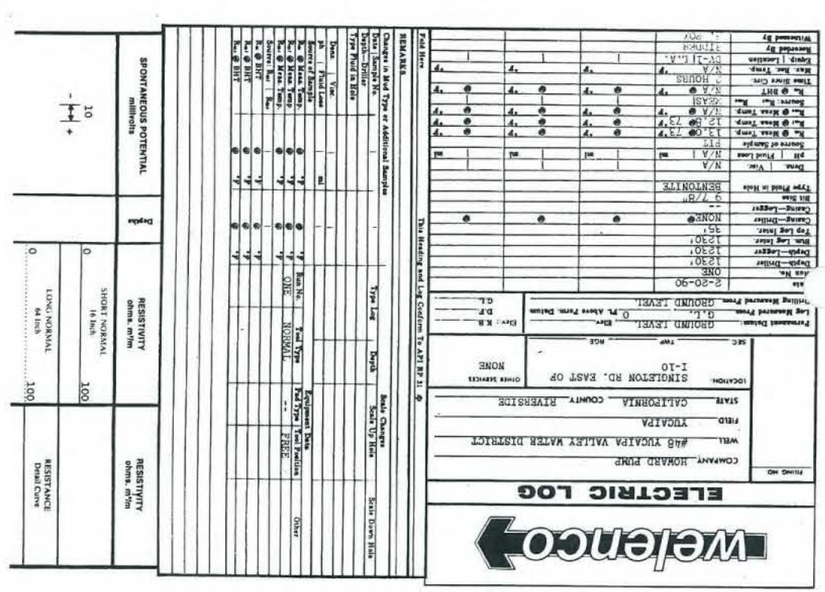




25/2W-24L2

Well 48


SP Curve
1200
1100
1000
900
800
700
600
500
400
300
200
100
Long Normal - AM 64"
Short Normal - AM 16"


SPONTANEOUS POTENTIAL millivolts
Dipole
RESISTIVITY ohms. m²/m
LONG NORMAL 64 inch
SHORT NORMAL 16 inch
RESISTANCE Detail Curve
RESISTIVITY ohms. m²/m
Run No.
Tool Type
Equipment Data
Tool Position
Other
Type Log
Depth
Basic Changes
Scale Up Data
Scale Down Data
This Heading and Log Conform To API RP 31. G
ELECTRIC LOG
welenco
COMPANY HOWARD PUMP
WELL #48 YUCAIPA VALLEY WATER DISTRICT
FIELD YUCAIPA
STATE CALIFORNIA COUNTY RIVERSIDE
LOCATION SINDLESTON RD. EAST OF I-10
SEC TWP RGE
OTHER SERVICES NONE
Permanent Datum GROUND LEVEL Elev.
Log Measured From G.L. 0 Ft. Above Perm. Datum
Drilling Measured From GROUND LEVEL
Elev.: K.B. D.F. G.L.
Date 2-20-90
Run No. ONE
Depth—Driller 1230'
Depth—Logger 1230'
Btm. Log Interval 1230'
Top Log Interval 36'
Casing—Driller NONE
Casing—Logger
Bit Size 7 7/8"
Type Fluid in Hole BENTONITE
Dens. | Visc. N/A
pH | Fluid Loss N/A | ml ml | ml ml | ml
Source of Sample PIT
Rm @ Meas Temp. 12.0@ 73°F
Rmf @ Meas Temp. 12.0@ 73°F
Rmc @ Meas Temp. N/A @
Source Rmf | Rmc ASAS
Rm @ Meas Temps. N/A @
Rmf @ Meas Temps. N/A @
Rmc @ Meas Temps. N/A @
Source Rmf | Rmc
Rm @ BHT N/A @
Time Since Circ. 9 HOURS
Max. Rec. Temp. N/A @
Equip. | Location SVC-31 S.A.
Recorded By JIMMY
Witnessed By J. ROY
Fold Here
REMARKS
Charges for Each Type of Additional Sample
Open Hole Run No.
Depth—Driller
Type Fluid in Hole
Dens. | Visc.
pH | Fluid Loss | ml
Source of Sample
Rm @ Meas Temp.
Rmf @ Meas Temp.
Rmc @ Meas Temp.
Source Rmf | Rmc
Rm @ BHT

#49

2S/2W-3J1

DUPLICATE
Driller's Copy

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES

WATER WELL DRILLERS REPORT

Do not fill in
No. 341209

Notice of Intent No. 243729
Local Permit No. or Date

State Well No.
Other Well No.

(1) OWNER: Name [redacted]
Address [redacted]
City Yucaipa, Ca 92399 ZIP

(2) LOCATION OF WELL (See instructions):
County San Bernardino Owner's Well Number #49
Well address if different from above
Township 2S Range 2W Section 3
Distance from cities, roads, railroads, fences, etc.
Parcel # 318-051-43

WELL LOCATION SKETCH

(3) TYPE OF WORK:
New Well ☐ Deepening ☐
Reconstruction ☐
Reconditioning ☐
Horizontal Well ☐
Destruction ☐ (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:
Domestic ☐
Irrigation ☐
Industrial ☐
Test Well ☒
Municipal ☐
Other ☐
(Describe)

(5) EQUIPMENT:
Rotary ☒ Reverse ☐
Cable ☐ Air ☐
Other ☐ Bucket ☐

(6) GRAVEL PACK:
Yes ☐ No ☐ Size
Diameter of bore
Packed from ft. to ft.

(7) CASING INSTALLED:
Steel ☐ Plastic ☐ Concrete ☐

From ft.	To ft.	Dia. in.	Gage or Wall
0	400		
520	670		
830	910		
1160	1180		

(8) PERFORATIONS:
Type of perforation or size of screen

From ft.	To ft.	Slot size
400	622	
670	800	
910	1180	

(9) WELL SEAL:
Was surface sanitary seal provided? Yes ☒ No ☐ If yes, to depth 50 ft.
Were strata sealed against pollution? Yes ☐ No ☐ Interval ft.
Method of sealing

(10) WATER LEVELS:
Depth of first water, if known ft.
Standing level after well completion ft.

(11) WELL TESTS:
Was well test made? Yes ☐ No ☐ If yes, by whom?
Type of test Pump ☒ Bailer ☐ Air lift ☐
Depth to water at start of test ft. At end of test ft.
Discharge gal/min after hours Water temperature
Chemical analysis made? Yes ☒ No ☐ If yes, by whom?
Was electric log made Yes ☐ No ☐ If yes, attach copy to this report

(12) WELL LOG: Total depth ft. Completed depth ft.

from ft.	to ft.	Formation (Describe by color, character, size or material)
0'	390'	7.5hr Sand and gravel & cobbles
390'	439'	22hr Drlg slowed down
439'	459'	22hr Sand & gravel & cobbles w/some clay
459'	470'	22hr Sand & gravel w/some cobbl and silt
470'	473'	22 hr Sand & gravel w/some clay
473'	490'	18hr Fine t. med sand & silt
490	520	18hr Med to course sand & silt
520	535	Looks like chipped rock sharp cobbles
535	615	Med to course sand w/cobbles and silt
615	627	Sand & Gravel w/some clay
627	700	Sand & gravel w/some cobbles & silt
700	765	Med to course sand
765	845	Med to course sand& gravel
854		TD
854	935	Sand, Gravel and silts
935	1198	Med to course sand

Work started 19 Completed 19 90

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief

Signed Mark C. (Well Driller)
NAME Howard Pump Inc. (Person, firm, or corporation) (Typed or printed)
Address PO Box 1249
City Barstow Ca ZIP 92311
License No 231314 Date of this report

DWR 188 (REV. 12-86) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

86 96355

THIS WELL DRILLED PRIOR TO PERMITTING OR PRESITE BY DEHS.

County of San Bernardino — Environmental Public Works Agency
DEPARTMENT OF ENVIRONMENTAL HEALTH SERVICES
385 North Arrowhead Avenue, San Bernardino, CA 92415-0160

25/24-3J1

DO NOT FILL IN
Permit Number 04129021
Expiration 4-12-91
FF
FA
SN

WELL PERMIT
(Please Print)

DO NOT FILL IN CK #9787 $ 275 - 137.50
Date 4-12-90
Amount $ 412.50
Receipt Number 041291-2
By Howard Kump #19787

1. OWNER: Name [redacted]
Mailing Address [redacted]
City Yucaipa, CA Zip 92399
Site Address Well #49
City Yucaipa Zip
Telephone Number (714) 797-5117

2. WELL DRILLER:
Contractor Howard Pump, Inc. (Name)
Date Start April 1990
Date Complete May 1990

3. WELL USE *(check)*:
☒ Community ☐ Horizontal ☐ Other
☐ Individual ☐ Test
☐ Agricultural ☐ Monitoring
☐ Dairy ☐ Public Water Supply

4. TYPE OF WORK *(check)*:
☒ New ☐ Reconstruction ☐ Destruction

Items 6 through 10 to be estimated for new wells, exact for all other wells.

5. ANNULAR SEAL: Seal Depth 50 ft.
Furnished by: ☐ Owner ☒ Contractor
☐ Driven Conductor Dia. ____ in., Wall (Gage) ____
☒ Sealing Material cement, Thickness 2 in.

6. DEPTH OF WELL *(feet)*:
Proposed 1000 Existing 0
DIAMETER OF BORE *(in.)*: 28"

7. CASING INSTALLED:
☒ Steel ☐ Plastic ☐ Other

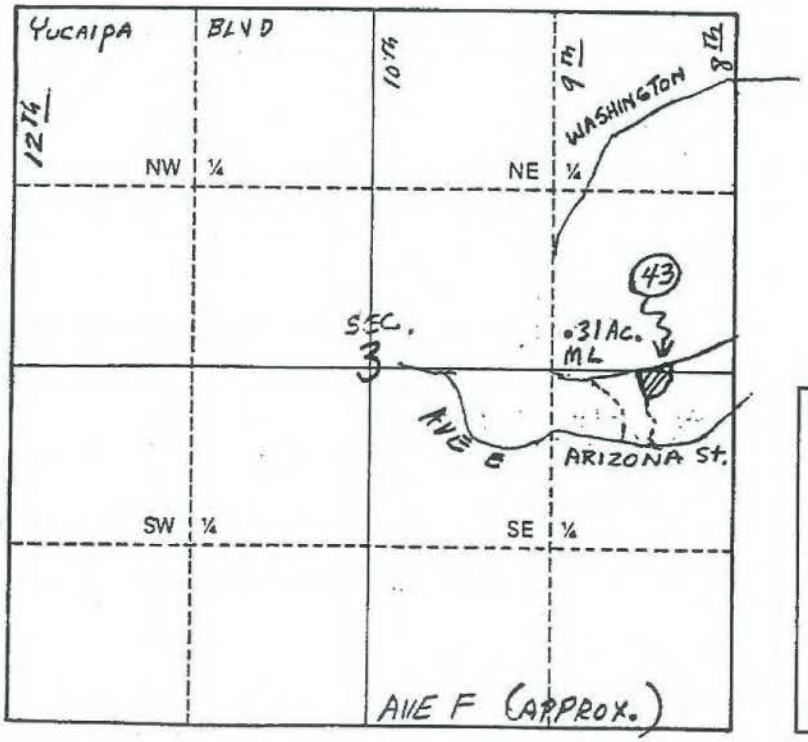
From (ft.)	To (ft.)	Dia. (in.)	Wall (Gage)
0	650	14"	

GRAVEL PACK: ☒ Yes ☐ No
From 50 to 1000 ft.

8. PERFORATIONS *(if applicable)*:
From 650 to 1000 ft.

9. SEALED ZONES *(if applicable)*:
From 0 to 50 ft.

SECTION MAP — DO NOT FILL IN *Scale: 1 inch = ¼ mile*



10. LOCATION INFORMATION: 31-A6
(a) Township 2S N/S Range 2W E/W
Section 3
(b) Assessor's Parcel No. 318-051-43
(c) Solid or liquid waste disposal site within two miles?
☐ Yes ☒ No
Location ____

(Continue on reverse side)

NO M.A.V.

DO NOT FILL IN
Seal
Cap
Check Valve
Electricals
Slab
Tag
Building and Safety Notified

Well 49
25/2W-3J1

welenco

ELECTRIC LOG

FILING NO.

COMPANY HOWARD PUMP
WELL #49 (RUN TWO)
FIELD YUCAIPA
STATE CA COUNTY SAN BERNARDINO
LOCATION: @ 7TH AVE & AVE E.
OTHER SERVICES: E-LOG
SEC. TWP. RGE.
Permanent Datum: GROUND LEVEL Elev.
Log Measured From: GL. 0 Ft. Above Perm. Datum
Drilling Measured From: GROUND LEVEL
Elev.: K.B. D.F. G.L.

	4-6-90				
Depth—Driller	ONE				
Depth—Logger	1178'				
Btm. Log Inter.	1174'				
Top Log Inter.	1172'				
Casing—Driller	30'				
Casing—Logger	NONE @				
Bit Size	—				
Type Fluid in Hole	9 7/8"				
Dens. / Visc.	BENTONITE				
pH / Fluid Loss	N/A				
Source of Sample	N/A	ml		ml	ml
Rm @ Meas. Temp.	MUD				
Rmf @ Meas. Temp.	1178	@65 °F	°F	°F	°F
Rmc @ Meas. Temp.	1174	@66 °F	°F	°F	°F
Source: Rmf Rmc	N/A	@ °F	°F	°F	°F
Rm @ BHT	MEAS				
Time Since Circ.	N/A	@ °F	°F	°F	°F
Max. Rec. Temp.	2 HOURS				
Equip. / Location	N/A	°F	°F	°F	°F
Recorded By	DV-11, R.				
Witnessed By	RIDDED				

FIELD PRINT

This Reading and Log Conforms To API RP 31 @

Run No. | Bit | Csg. | Type Log | Depth | Scale Up/2" Hole | Scale Down Hole | Equipment Data | Tool Type | Tool Position | Other

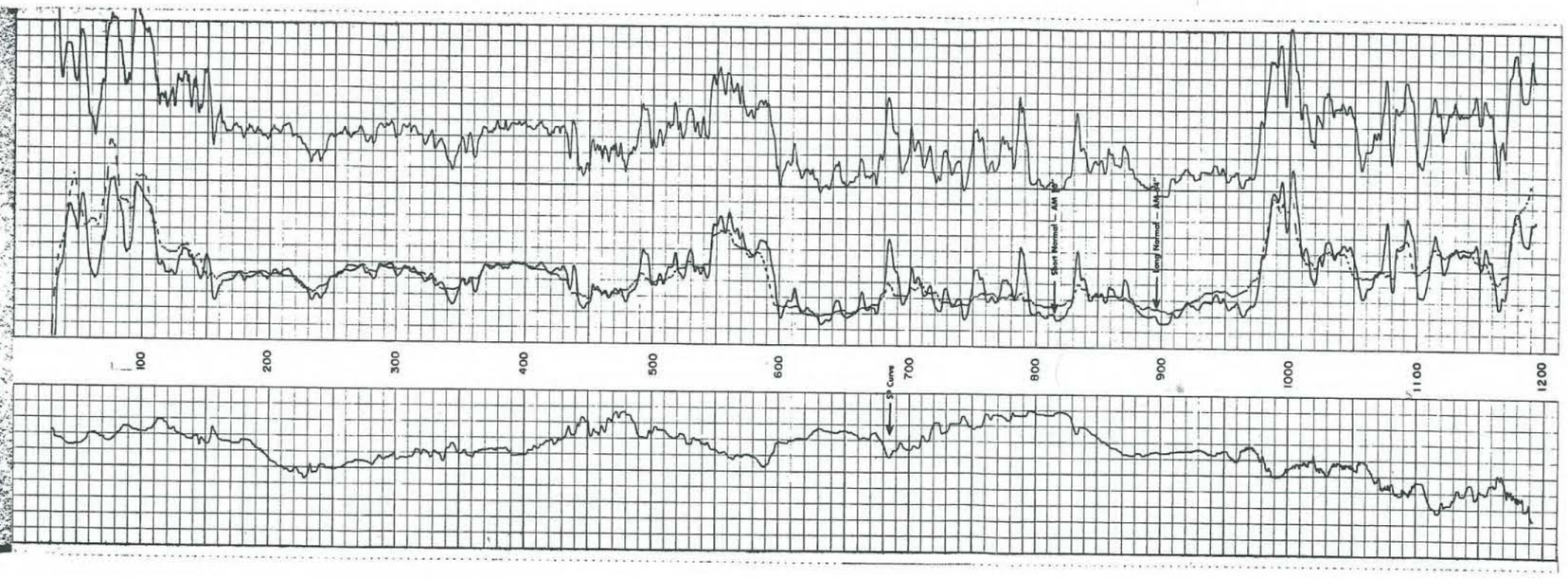
Rm @ Meas. Temp. | Rmf @ Meas. Temp. | Rmc @ Meas. Temp. | Source: Rmf | Rmc | Rm @ BHT | Time Since Circ. | Max. Rec. Temp. | Equip. / Location | Recorded By | Witnessed By

Field Intrp.

REMARKS

Charges in Bed Type or Additional Samples
Date | Sample No.
Depth—Driller
Type Fluid in Hole
Dens. / Visc.
pH / Fluid Loss
Source of Sample
Rm @ Meas. Temp.
Rmf @ Meas. Temp.
Rmc @ Meas. Temp.
Source: Rmf | Rmc
Rm @ BHT
Time Since Circ.
Max. Rec. Temp.

RESISTIVITY ohms. m²/m
RESISTANCE Detail Curve
SHORT NORMAL 16 Inch
LONG NORMAL 64 Inch
Depths
SPONTANEOUS POTENTIAL millivolts



welenco

ELECTRIC LOG

FILING NO

COMPANY HOWARD PUMP

WELL #49

FIELD YUCAIPA

STATE CALIFORNIA COUNTY SAN BERNARDINO

LOCATION: 8th AVE. @ AVE E

OTHER SERVICES: NONE

SEC. ____ TWP ____ RGE ____

Permanent Datum: G.L. Elev. ____ Elev.: K.B. ____

Log Measured From G.L. 0 Ft. Above Perm. Datum D.F. ____

Drilling Measured From G.L. G.L. ____

Date	3-30-90			
Run No.	ONE			
Depth—Driller	854'			
Depth—Logger	853'			
Btm. Log Inter.	850'			
Top Log Inter.	100'			
Casing—Driller	NONE @	@	@	@
Casing—Logger	-			
Bit Size	9 7/8"			
Type Fluid in Hole	BENTONITE			
Dens. | Visc.	N/A			
pH | Fluid Loss	N/A | ml	ml	ml	ml
Source of Sample	PIT			
R_m @ Meas. Temp.	11.0 @ 70 °F	@ °F	@ °F	@ °F
R_{mf} @ Meas. Temp.	11.2 @ 71 °F	@ °F	@ °F	@ °F
R_{mc} @ Meas. Temp.	N/A @ °F	@ °F	@ °F	@ °F
Source: R_{mf} R_{mc}	MEAS |			
R_m @ BHT	N/A @ °F	@ °F	@ °F	@ °F
Time Since Circ.	0 HOURS			
Max. Rec. Temp.	N/A °F	°F	°F	°F
Equip. | Location	OV-1 | LA			
Recorded By	RIDDER			
Witnessed By				

This Reading and Log Conform To API RP 31.

Fold Here

Scale Changes: Type Log | Depth | Scale Up Hole | Scale Down Hole

Equipment Data: Run No. | Tool Type | Pad Type | Tool Position | Other

Run No.	Tool Type	Pad Type	Tool Position	Other
ONE	NORMAL		FREE	

REMARKS

Changes in Mud Type or Additional Samples

Date | Sample No. | Depth—Driller | Type Fluid in Hole | Dens. | Visc. | pH | Fluid Loss | Source of Sample | R_m @ Meas. Temp. | R_{mf} @ Meas. Temp. | R_{mc} @ Meas. Temp. | Source: R_{mf} | R_{mc} | R_m @ BHT | R_{mf} @ BHT | R_{mc} @ BHT

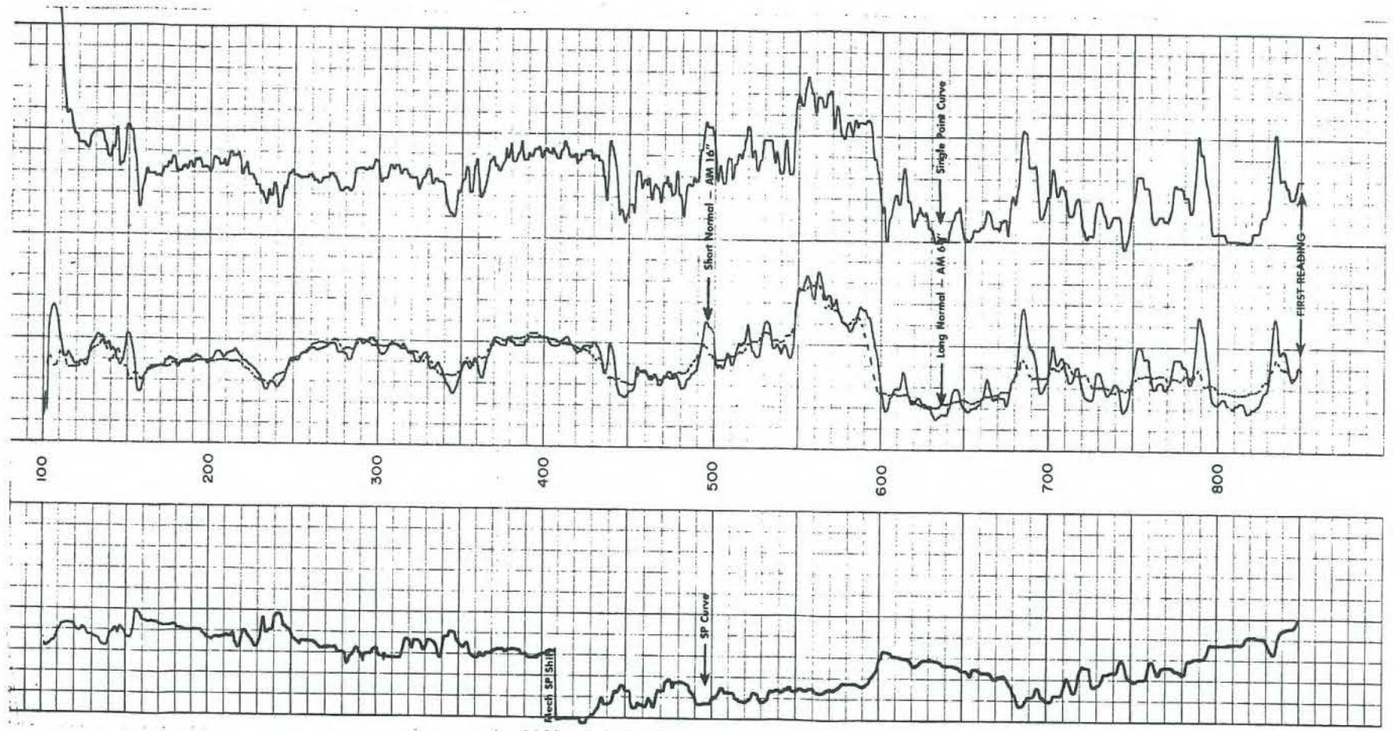
RESISTIVITY ohms. m²/m | RESISTIVITY ohms. m²/m | RESISTANCE Detail Curve

SHORT NORMAL 16 Inch: 0 — 200

LONG NORMAL 64 Inch: 0 — 200

Depths

SPONTANEOUS POTENTIAL millivolts: -5 — 0 — +



25/2W-1Q1 - notes say changed to 25/2W-1K1 in 2003 per Yucaipa well database = 25/2W-1Q1 #50

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES

WATER WELL DRILLERS REPORT

Do not fill in

No. 341098

Notice of Intent No. 249930
Local Permit No. or Date

State Well No.
Other Well No.

(1) OWNER: Name [redacted]
Address [redacted]
City [redacted] ZIP 92399

(2) LOCATION OF WELL (See instructions):
County San Bernardino Owner's Well Number #50
Well address if different from above
Township Range Section
Distance from cities, roads, railroads, fences, etc.
Parcel # 310-132-25

(3) TYPE OF WORK:
New Well XX Deepening
Reconstruction
Reconditioning
Horizontal Well
Destruction (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:
Domestic
Irrigation
Industrial
Test Well XX
Municipal
Other
(Describe)

WELL LOCATION SKETCH

(5) EQUIPMENT:
Rotary XX Reverse
Cable Air
Other Bucket

(6) GRAVEL PACK:
Yes No Size
Diameter of bore
Packed from ft. to ft.

(7) CASING INSTALLED:
Steel XX Plastic Concrete

From ft.	To ft.	Dia. in.	Gage or Wall
0	330	6 5/8	.134

(8) PERFORATIONS:
Type of perforation or size of screen

From ft.	To ft.	Slot size
330	358	.080

(9) WELL SEAL:
Was surface sanitary seal provided? Yes X No If yes, to depth 20' ft.
Were strata sealed against pollution? Yes No Interval ft.
Method of sealing Hole plug

(10) WATER LEVELS:
Depth of first water, if known ft.
Standing level after well completion ft.

(11) WELL TESTS:
Was well test made? Yes No If yes, by whom?
Type of test Pump Bailer Air lift
Depth to water at start of test ft. At end of test ft.
Discharge gal/min after hours Water temperature
Chemical analysis made? Yes No If yes, by whom?
Was electric log made? Yes X No If yes, attach copy to this report

(12) WELL LOG: Total depth ft. Completed depth ft.

from ft.	to ft.	Formation (Describe by color, character, size or material)
0	5	Clay (brown silty)
5	80	Sand and gravel
80	270	Sand gravel & cobbles
270	291	Sand, gravel & boulders
291	300	Silty clay and asand
300	334	Sand gravel and boulders
334	341	Silty clay and sand
341	372	Sand & gravel and cobbles
372	388	Dark green rock (hard)
388	420	Sand & gravel and cobbles
420	450	Sand & gravel & cobbles
450	451	Granite
451		Granite w/silts

Work started 4-9 19 90 Completed 4-13 19 90

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

Signed Gary Hall (Well Driller)
NAME Howard Pump, Inc.
(Person, firm, or corporation) (Typed or printed)
Address PO Box 1219
City Barstow, Ca ZIP 92311
License No. 221311 Date of this report

DWR 188 (REV. 12-8) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM 86 96355

COPY
VOID UNLESS
NOT FOR PUBLIC USE
WATER CODE SECTION 13752

2S/2W-10Q1

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES

WATER WELL DRILLERS REPORT

Do not fill in
No. 341098

Notice of Intent No. 249930
Local Permit No. or Date

State Well No.
Other Well No.

(1) OWNER: Name [redacted]
Address [redacted]
City [redacted] ZIP 92399

(2) LOCATION OF WELL (See instructions):
County San Bernardino Owner's Well Number #50
Well address if different from above
Township Range Section
Distance from cities, roads, railroads, fences, etc.
Parcel # 310-132-25

(3) TYPE OF WORK:
New Well XX Deepening ☐
Reconstruction ☐
Reconditioning ☐
Horizontal Well ☐
Destruction ☐ (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:
Domestic ☐
Irrigation ☐
Industrial ☐
Test Well XX
Municipal ☐
Other ☐
(Describe)

WELL LOCATION SKETCH

(5) EQUIPMENT:
Rotary XX Reverse ☐
Cable ☐ Air ☐
Other ☐ Bucket ☐

(6) GRAVEL PACK:
Yes ☐ No ☐ Size
Diameter of bore
Packed from ft. to ft.

(7) CASING INSTALLED:
Steel XX Plastic ☐ Concrete ☐

From ft.	To ft.	Dia. in.	Gage or Wall
0	330	6 5/8	.134

(8) PERFORATIONS:
Type of perforation or size of screen

From ft.	To ft.	Slot size
330	350	.080

(9) WELL SEAL:
Was surface sanitary seal provided? Yes ☒ No ☐ If yes, to depth 20' ft.
Were strata sealed against pollution? Yes ☐ No ☐ Interval ft.
Method of sealing Hole plug

(10) WATER LEVELS:
Depth of first water, if known ft.
Standing level after well completion ft.

(11) WELL TESTS:
Was well test made? Yes ☐ No ☐ If yes, by whom?
Type of test Pump ☐ Bailer ☐ Air lift ☐
Depth to water at start of test ft. At end of test ft.
Discharge gal/min after hours Water temperature
Chemical analysis made? Yes ☐ No ☐ If yes, by whom?
Was electric log made Yes ☒ No ☐ If yes, attach copy to this report

(12) WELL LOG: Total depth ft. Completed depth ft.

from ft.	to ft.	Formation (Describe by color, character, size or material)
0	5	Clay (brown silty)
5	80	Sand and gravel
80	270	Sand gravel & cobbles
270	291	Sand, gravel & boulders
291	300	Silty clay and asand
300	334	Sand gravel and boulders
334	341	Silty clay and sand
341	372	Sand & gravel and cobbles
372	388	Dark green rock (hard)
388	420	Sand & gravel and cobbles
420	430	Sand & gravel & cobbles
430	450	Granite
450	461	Granite w/silts

Work started 4-9 19 90 Completed 4-13 19 90

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
Signed Gary Hall (Well Driller)
NAME Howard Pump, Inc. (Person, firm, or corporation) (Typed or printed)
Address PO Box 1219
City Barstow, Ca ZIP 92311
License No. 281214 Date of this report

DWR 188 (REV. 12-86) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM 84 96355

COPY
VOID UNTIL
NOT FOR PUBLIC USE
WATER CODE SEC 13752

ORIGINAL
File with DWR

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES

WATER WELL DRILLERS REPORT

Do not fill in
No. 341098

Notice of Intent No. 249930
Local Permit No. or Date
025/02W-01K001 (1st)
State Well No. ~~025/02W01K001~~
Other Well No.

(1) OWNER: Name [redacted]
Address [redacted]
City [redacted] ZIP 92399

(2) LOCATION OF WELL (See instructions):
County San Bernardino Owner's Well Number #50
Well address if different from above
Township 2S Range 2W Section 1
Distance from cities, roads, railroads, fences, etc.
Parcel # 319-132-25

changed 3/28/03 plate in K 01K001 gg

(3) TYPE OF WORK:
New Well XX Deepening ☐
Reconstruction ☐
Reconditioning ☐
Horizontal Well ☐
Destruction ☐ (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:
Domestic ☑
Irrigation ☐
Industrial ☐
Test Well XX
Municipal ☐
Other ☐
(Describe)

WELL LOCATION SKETCH

(5) EQUIPMENT:
Rotary XX Reverse ☐
Cable ☐ Air ☐
Other ☐ Bucket ☐

(6) GRAVEL PACK:
Yes ☐ No ☑ Size
Diameter of bore
Packed from ft. to ft.

(7) CASING INSTALLED:
Steel XX Plastic ☐ Concrete ☐

From ft.	To ft.	Dia in.	Gage or Wall
0	330	6-5/8	.134

(8) PERFORATIONS:
Type of perforation or size of screen

From ft.	To ft.	Slot size
330	350	.080

(9) WELL SEAL:
Was surface sanitary seal provided? Yes ☒ No ☐ If yes, to depth 20' ft.
Were strata sealed against pollution? Yes ☐ No ☐ Interval ft.
Method of sealing Hole plug

(10) WATER LEVELS:
Depth of first water, if known ft.
Standing level after well completion ft.

(11) WELL TESTS:
Was well test made? Yes ☐ No ☐ If yes, by whom?
Type of test Pump ☐ Bailer ☐ Air lift ☐
Depth to water at start of test ft. At end of test ft.
Discharge gal/min after hours Water temperature
Chemical analysis made? Yes ☐ No ☐ If yes, by whom?
Was electric log made Yes ☒ No ☐ If yes, attach copy to this report

(12) WELL LOG: Total depth 481 ft. Completed depth 350 ft.

from ft.	to ft.	Formation (Describe by color, character, size or material)
0	5	Clay (brown silty)
5	80	Sand and gravel
80	270	Sand gravel & cobbles
270	291	Sand, gravel & boulders
291	300	Silty clay and sand
300	334	Sand gravel and boulders
334	341	Silty clay and sand
341	372	Sand & gravel and cobbles
372	388	Dark green rock (hard)
388	420	Sand - gravel and cobbles
420	450	Sand & gravel & cobbles
420	450	Granite
450	481	Granite w/silts

Work started 4-9 19 98 Completed 4-13 19 98

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
Signed Gary Hall
NAME Howard Pump, Inc. (Well Driller)
(Person, firm, or corporation) (Typed or printed)
Address PO Box 1249
City Barstow, Ca ZIP 92311
License No. 281814 Date of this report

DWR 188 (REV. 12-86) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM 86 94355

1S/2W -29C1

ORIGINAL
File with DWR

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES

WATER WELL DRILLERS REPORT

Do not fill in

No. 341364

Notice of Intent No. 243729
Local Permit No. or Date 04129021

State Well No.
Other Well No.

(1) OWNER: Name [redacted]
Address [redacted]
City [redacted] ZIP 92399

(2) LOCATION OF WELL (See instructions):
County San Bernardino Owner's Well Number #51
Well address if different from above
Township Range Section
Distance from cities, roads, railroads, fences, etc.

WELL LOCATION SKETCH

(3) TYPE OF WORK:
New Well ☐ Deepening ☐
Reconstruction ☐
Reconditioning ☐
Horizontal Well ☐
Destruction ☐ (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:
Domestic ☐
Irrigation ☐
Industrial ☐
Test Well ☐
Municipal ☐
Other ☐
(Describe)

(5) EQUIPMENT:
Rotary ☐ Reverse ☐
Cable ☐ Air ☐
Other ☐ Bucket ☐

(6) GRAVEL PACK:
Yes ☐ No ☑ Size
Diameter of bore
Packed from to ft.

(7) CASING INSTALLED:
Steel ☐ Plastic ☐ Concrete ☐

From ft.	To ft.	Dia. in.	Gage or Wall

(8) PERFORATIONS:
Type of perforation or size of screen

From ft.	To ft.	Slot size

(9) WELL SEAL:
Was surface sanitary seal provided? Yes ☐ No ☐ If yes, to depth ft.
Were strata sealed against pollution? Yes ☐ No ☐ Interval ft.
Method of sealing

(10) WATER LEVELS:
Depth of first water, if known ft.
Standing level after well completion ft.

(11) WELL TESTS:
Was well test made? Yes ☐ No ☐ If yes, by whom?
Type of test Pump ☐ Bailer ☐ Air lift ☐
Depth to water at start of test ft. At end of test ft.
Discharge gal/min after hours Water temperature
Chemical analysis made? Yes ☐ No ☐ If yes, by whom?
Was electric log made Yes ☐ No ☐ If yes, attach copy to this report

(12) WELL LOG: Total depth ft. Completed depth ft.

from ft.	to ft.	Formation (Describe by color, character, size or material)
0	18	Clay
18	45	Sand, Gravel and Cobbles
45	65	Clay w/sand
65	84	Sand, gravel and cobbles
84	110	Clay w/sand
110	291	Sand, gravel and cobbles
291	298	Clay w/sand and gravel
298	345	Sand and Gravel
345	360	Sand and gravel w/ clay
360	482	Sand and gravel and cobbles
482	490	Sand and gravel (green)
490	600	Sand and gravel
600	610	Sand and gravel w/sharp chips of rock. very hard DRLG
610	683	Very hard Rock CHips No sand or clay (granite)
	683	T D

Work started 4-23 19 90 Completed 19

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

Signed (Well Driller)
NAME Howard Pump, Inc (Person, firm, or corporation) (Typed or printed)
Address P.O. Box 1249 Barstow, Ca 92312-1249
City ZIP
License No. 281814 Date of this report

DWR 188 (REV. 12-86) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

86 96355

VOID UNLESS SIGNED
NOT FOR DOMESTIC USE
WATER CODE SECTION 13751

1S/2W-24C1

#51

TRIPLICATE
Owner's Copy

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES

WATER WELL DRILLERS REPORT

Do not fill in
No. 341364

Notice of Intent No. 243729
Local Permit No. or Date 04129021

State Well No. _____
Other Well No. _____

(1) OWNER: Name [redacted]
Address [redacted]
City [redacted] ZIP 92399

(2) LOCATION OF WELL (See instructions):
County San Bernardino Owner's Well Number #51
Well address if different from above Kadota & Bryant
Township 1S Range 2W Section 24
Distance from cities, roads, railroads, fences, etc.

302-311-04

WELL LOCATION SKETCH

(3) TYPE OF WORK:
New Well ☒ Deepening ☐
Reconstruction ☐
Reconditioning ☐
Horizontal Well ☐
Destruction ☐ (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:
Domestic ☐
Irrigation ☐
Industrial ☐
Test Well ☐
Municipal ☒
Other ☐
(Describe)

(5) EQUIPMENT:
Rotary ☒ Reverse ☐
Cable ☐ Air ☐
Other ☐ Bucket ☐

(6) GRAVEL PACK:
Yes ☒ No ☐ Size All Amer. Rancho
Diameter of bore 30"
Packed from 0 ft. to XXX 610 ft.

(7) CASING INSTALLED:
Steel ☒ Plastic ☐ Concrete ☐

From ft.	To ft.	Dia. in.	Gage or Wall
0	230	12"	.
590	610		

(8) PERFORATIONS:
Type of perforation or size of screen

From ft.	To ft.	Slot size
230	590	.080

(9) WELL SEAL:
Was surface sanitary seal provided? Yes ☒ No ☐ If yes, to depth 50 ft.
Were strata sealed against pollution? Yes ☐ No ☒ Interval _____ ft
Method of sealing 30" conductor cemented in place

(10) WATER LEVELS:
Depth of first water, if known 82.1 ft.
Standing level after well completion 90.1 ft.

(11) WELL TESTS:
Was well test made? Yes ☒ No ☐ If yes, by whom? HPI
Type of test Pump ☒ Bailer ☐ Air lift ☐
Depth to water at start of test 82.1 At end of test 90.1 ft
Discharge 1500 gal/min after 65 hours Water temperature
Chemical analysis made? Yes ☐ No ☒ If yes, by whom?
Was electric log made Yes ☒ No ☐ If yes, attach copy to this report

(12) WELL LOG: Total depth _____ ft. Completed depth _____ ft.

from ft.	to ft.	Formation (Describe by color, character, size or material)
0	18	Clay
18	45	Sand, Gravel and Cobbles
45	55	Clay w/sand
55	84	Sand, gravel and cobbles
84	110	Clay w/sand
110	291	Sand, gravel and cobbles
291	295	Clay w/sand and gravel
295	345	Sand and Gravel
345	350	Sand and gravel w/ clay
350	482	Sand and gravel and cobbles
482	492	Sand and gravel (green)
492	500	Sand and gravel
500	515	Sand and gravel w/sharp chips of rock. very hard DRLG
515	633	Very hard Rock CHips No sand or clay (granite)
	633	T D

Work started 1 19 91 Completed _____ 19 _____

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
Signed Cary Hall (Well Driller)
NAME Howard Pump, Inc (Person, firm, or corporation) (Typed or printed)
Address P.O. Box 1249 Barstow, Ca 92312-1249
City _____ ZIP _____
License No. 231914 Date of this report 1-22-91

DWR 188 (REV. 12-86) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM 86 96355

VOID PENDING PUBLIC USE
NOT FOR PUBLIC USE
WATER CODE 13752
COPY

Yucaipa Valley Water District
12770 Second Street • P. O. Box 730 • Yucaipa, California 92399-0730
(909) 797-5117 • • E-mail: yvwd@eee.org

FAX COVER SHEET
YVWD ENGINEERING FAX NO.: 909-797-5937

Date: 02-05-99

Number of Pages Including Cover 6

To: MR. TONG
Geo Science

FAX NO.: (909) 920-0403

FROM: B. Antonl / Ray

REGARDING: Well #53 (YVWD)
Ray - Asked Me to Send Him
E-Log & Driller's Log

Carefully account for the number of pages faxed to you. If there are any missing or illegible pages, please notify the sender immediately.

Directors and Officers

TOM SHALHOUB Division 1 | STEVE COPELAN Division 2 | DAVID LESSER Division 3 | CONRAD NELSON Division 4 | HANK WOCHHOLZ Division 5 | JOSEPH B. ZOBA General Manager and Secretary

TRIPLICATE
Owner's Copy
Page 1 of 1

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet
No. 477777

DWR USE ONLY — DO NOT FILL IN
STATE WELL NO./STATION NO.
LATITUDE LONGITUDE
APN/TRS/OTHER

Owner's Well No. 53
Date Work Began 11-10-92 Ended 1-30-93
Local Permit Agency San Bernardino Environment Health
Permit No. 1109211 Permit Date 11-4-92

GEOLOGIC LOG

ORIENTATION (∠) X VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)
DEPTH TO FIRST WATER 331 (Ft) BELOW SURFACE

DEPTH FROM SURFACE Ft. to Ft.	DESCRIPTION *Describe material, grain size, color, etc.*
0 : 50	TOP SOIL
50 : 60	FINE SAND AND GRAVEL
60 : 110	FINE SAND, COARSE SAND, GRAVEL
110 : 150	FINE & COARSE SAND
150 : 250	FINE SAND, COARSE SAND, GRAVEL
250 : 290	FINE SAND, GRAVEL, CLAY
290 : 440	FINE SAND, GRAVEL, ROCK
440 : 490	SAND, GRAVEL, ROCK
490 : 500	DECOMPOSED GRANITE, HARD
500 : 520	DECOMPOSED GRANITE, SAND, GRAVEL
520 : 640	SAND, GRAVEL, CLAY
640 : 680	SAND, GRAVEL, ROCK, CLAY
680 : 710	SAND, GRAVEL, CLAY
710 : 740	SAND, GRAVEL, CLAY, ROCK
740 : 800	GRAVEL, ROCK, GRANITE, BOULDERS
800 : 840	SAND, GRAVEL, ROCK, CLAY
840 : 860	CEMENTED SAND, GRAVEL, ROCK
860 : 1030	SAND, GRAVEL, SMALL & LARGE ROCK, CLAY
1030 : 1140	SAND, GRAVEL, CLAY, BOULDERS
1140 : 1210	SAND, GRAVEL, CLAY
1210 : 1220	CEMENTED SAND, GRAVEL, GRANITE

TOTAL DEPTH OF BORING 1225 (Ft.)
TOTAL DEPTH OF COMPLETED WELL 970 (Feet)

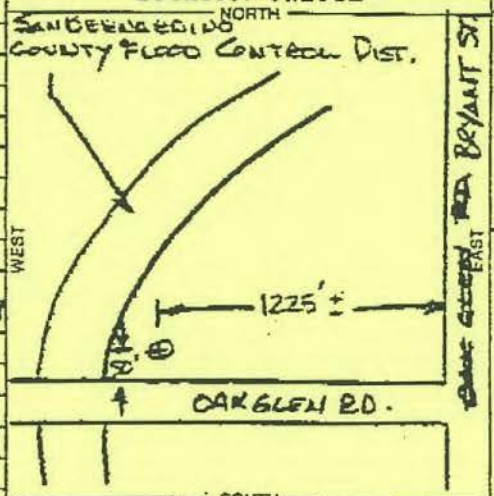
WELL OWNER

Name [redacted]
Mailing Address
CITY STATE ZIP

WELL LOCATION

Address East Side of Oak Glen Road, between Sunnyside & Bryant in City of Yucaipa
City San Bernardino
County
APN Book 303 Page 51 Parcel 45
or Township 1S Range 2W Section 5
or Latitude ___ ° ___ ' ___ " NORTH Longitude ___ ° ___ ' ___ " WEST
DEG. MIN. SEC. DEG. MIN. SEC.

LOCATION SKETCH



Illustrate or Describe Distance of Well from Landmarks such as Roads, Buildings, Fences, Rivers, etc.
PLEASE BE ACCURATE & COMPLETE

ACTIVITY (∠)

X NEW WELL
___ MODIFICATION/REPAIR
___ Deepen
___ Other (Specify)
___ DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")

PLANNED USE(S) (∠)

___ MONITORING
WATER SUPPLY
X Domestic
___ Public
___ Irrigation
___ Industrial
___ "TEST WELL"
___ CATHODIC PROTECTION
___ OTHER (Specify)

DRILLING METHOD Reverse FLUID Water

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH OF STATIC WATER LEVEL 331' (Ft.) & DATE MEASURED 1-4-93
ESTIMATED YIELD* 1750 (GPM) & TEST TYPE constant
TEST LENGTH 24 (Hrs.) TOTAL DRAWDOWN 115 (Ft.)
* May not be representative of a well's long-term yield.

CASING(S)

DEPTH FROM SURFACE Ft. to Ft.	BORE-HOLE DIA. (Inches)	TYPE (∠) BLANK	SCREEN	CONDUCTOR	FILL PIPE	MATERIAL/ GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)
0 : 50	40"			X		M.S.	30"	5/16	
0 : 450	30"	X				M.S.	16"	5/16	
450 : 950	30"		X			M.S.	16"	5/16	.080
950 : 970	30"	X				M.S.	16"	5/16	

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft. to Ft.	TYPE CEMENT (∠)	BENTONITE (∠)	FILL (∠)	FILTER PACK (TYPE/SIZE)
0 : 50	X			10 sack slurr
0 : 970			X	4x12 valley
970 : 1225			X	Natural

ATTACHMENTS (∠)

___ Geologic Log
___ Well Construction Diagram
___ Geophysical Log(s)
___ Soil Water Chemical Analyses
___ Other
ATTACH ADDITIONAL INFORMATION IF IT EXISTS

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.
NAME Stevan A. Hicks - McCalla (PERSON, FIRM OR CORPORATION) (TYPED OR PRINTED)
ADDRESS 900 Nevada St. CITY Redlands STATE CA ZIP 92373
Signed Stevan A. Hicks (WELL DRILLER AUTHORIZED REPRESENTATIVE) DATE SIGNED 2-1-93
C57 LICENSE NUMBER 510011

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

welenco

ELECTRIC LOG

25R4

COUNTY:SAN BERNARDINO CA.
FIELD:YUCAIPA
LOCATION:OAK GLEN AVE SOUTH OF BR
WELL:#53
COMPANY:McCALLA BROS. DRILLING
[redacted]

COMPANY MCCALLA BROS. DRILLING
WELL #53
FIELD YUCAIPA
COUNTY SAN BERNARDINO STATE CA.

LOCATION
OAK GLEN AVE SOUTH OF BRYAN

Other Services
NONE

Sec. Twp. Rge.

Permanent datum GROUND LEVEL Elev. N/A
Log Measured From GROUND LEVEL Above Perm. Datum
Drilling Measured From GROUND LEVEL

Elev.: K.B. D.F. G.L.

Date	11/23/92			
Run No.	ONE			
Depth-Driller	1180'			
Depth-Logger	1180'			
Btm Log Interval	1178'			
Top Log Interval	50'			
Casing Driller	30" @ 50'	@	@	@
Casing Logger	50'			
Bit Size	17.5"			
Type Fluid in Hole	WATER			
Density | Viscosity	N/A | N/A			
pH | Fluid Loss	N/A | N/A cc	cc	cc	cc
Source of Sample	PIT			
Rm @ Meas. Temp.	16.8 @ 70 °F	@ °F	@ °F	@ °F
Rmf @ Meas. Temp.	16.8 @ 70 °F	@ °F	@ °F	@ °F
Rmc @ Meas. Temp.	N/A @ N/A °F	@ °F	@ °F	@ °F
Source of Rmf and Rmc	MEAS | N/A			
Rm @ BHT	N/A @ N/A °F	@ °F	@ °F	@ °F
Time End Circulation	11/22 21:00			
Time Logger on bottom	11:59			
Max Rec Temp Deg. F	N/A °F	°F	°F	°F
Equip No. | Location	L-14 | L.A.			
Recorded By	RIDDER			

CWP DRS 1.2616

Fold Here

Changes in Mud Type or Additional Samples

ate | Sample No			
epth Driller			
ype Fluid			
ens | Visc			
H | Fluid Loss			
ource of Sample			
m @ Meas Temp		o	o
mf @ Meas Temp		o	o
mc @ Meas Temp		o	o
ource RMF | Rmc			
m @ BHT		o	o
mf @ BHT		o	o
mc @ BHT		o	o

Scale Changes

Type Log	Depth	Scale Up Hole	Scale Down Hole

EQUIPMENT DATA

Run No.	Tool No.	Tool Type	Tool Pos.		Gamma Ray Tool No.
ONE	--	NORMAL	FREE		

CALIBRATION DATA

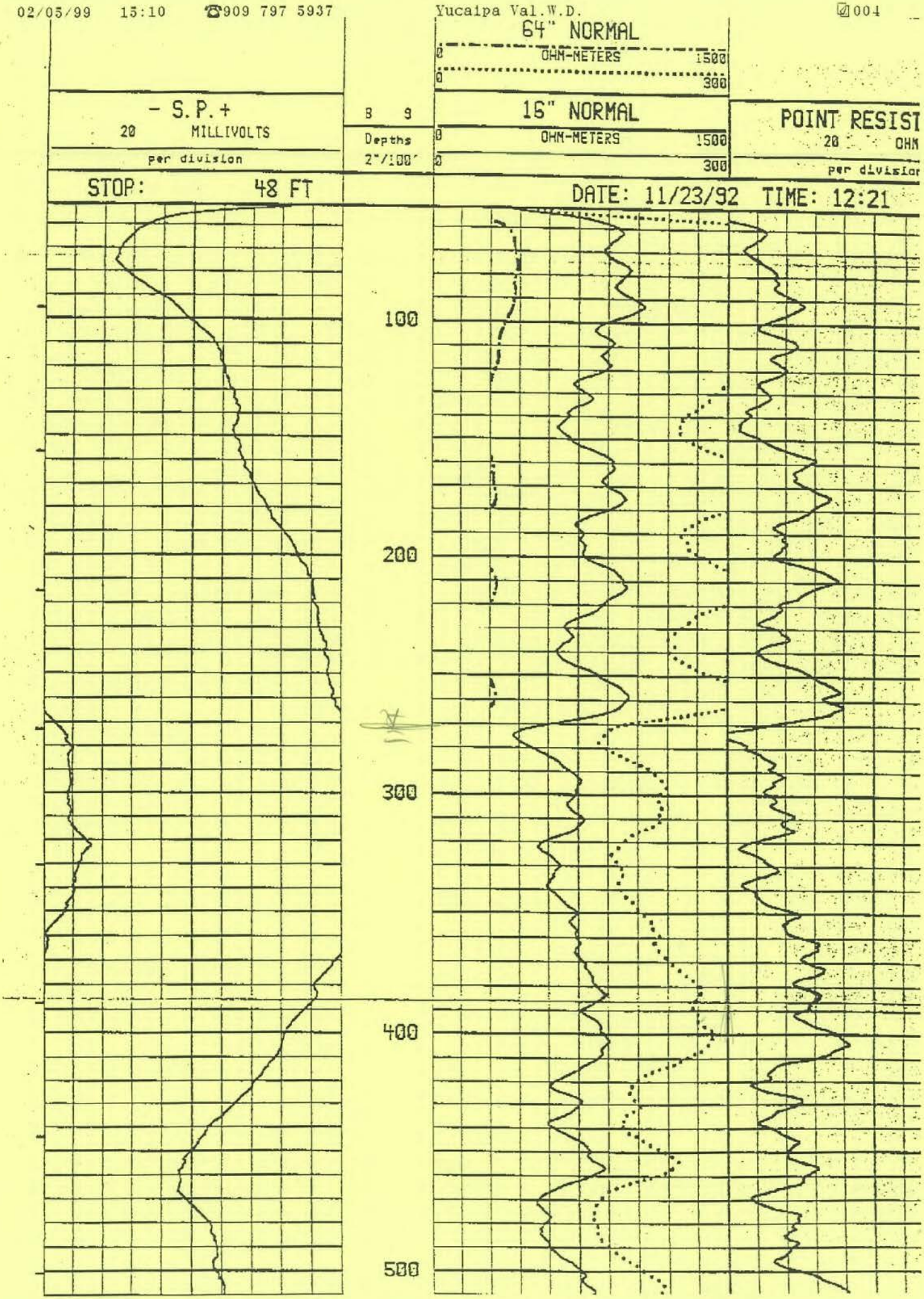
Run No.	16"Normal Zero	16"Normal Int. Cal	Induction Loop Cal	Induction Tool Zero	Induction Tool Cal	GAMMA RAY API SCALE	BKG CPS	STD C[illegible]

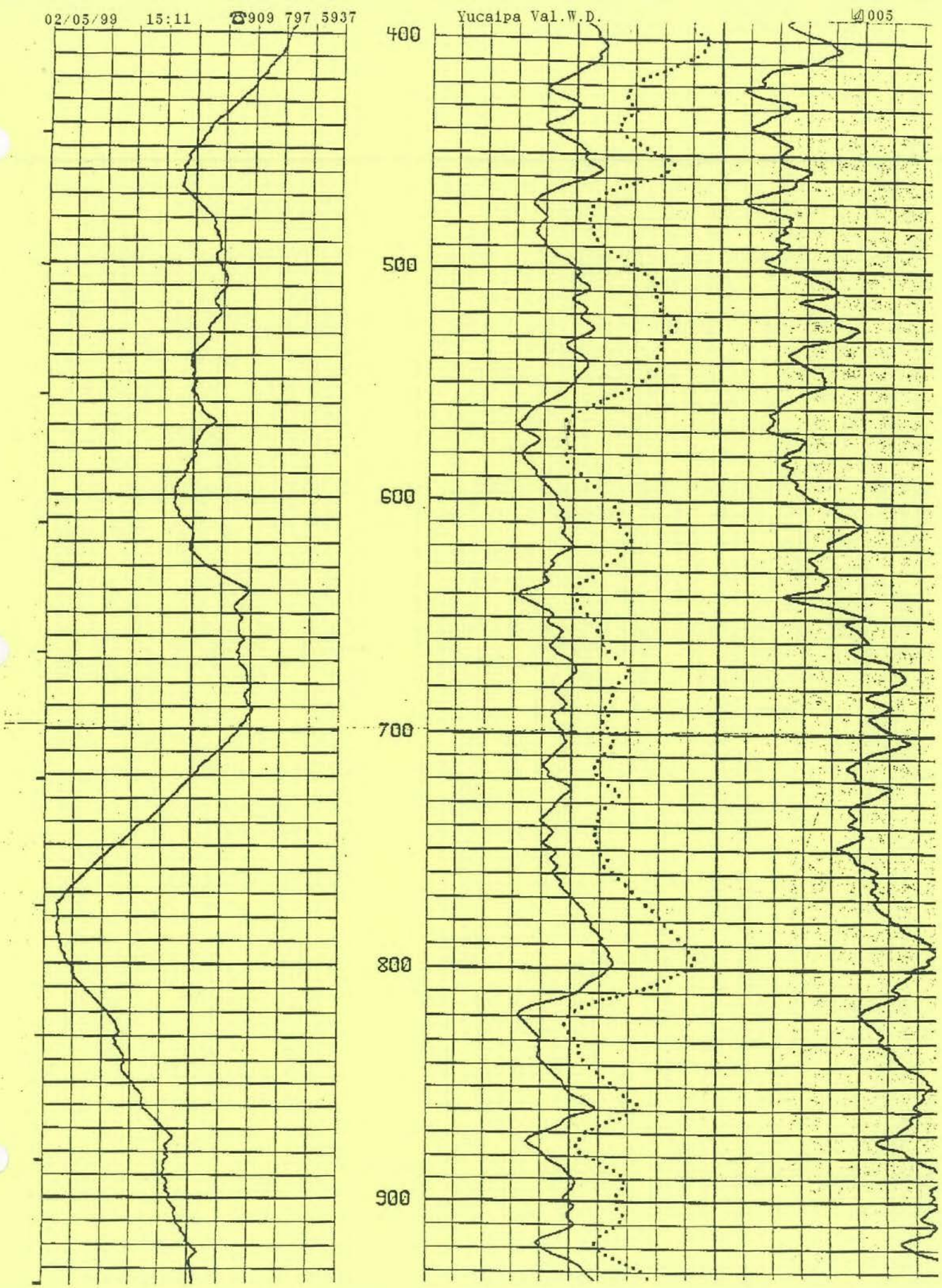
REFERENCE LITERATURE:

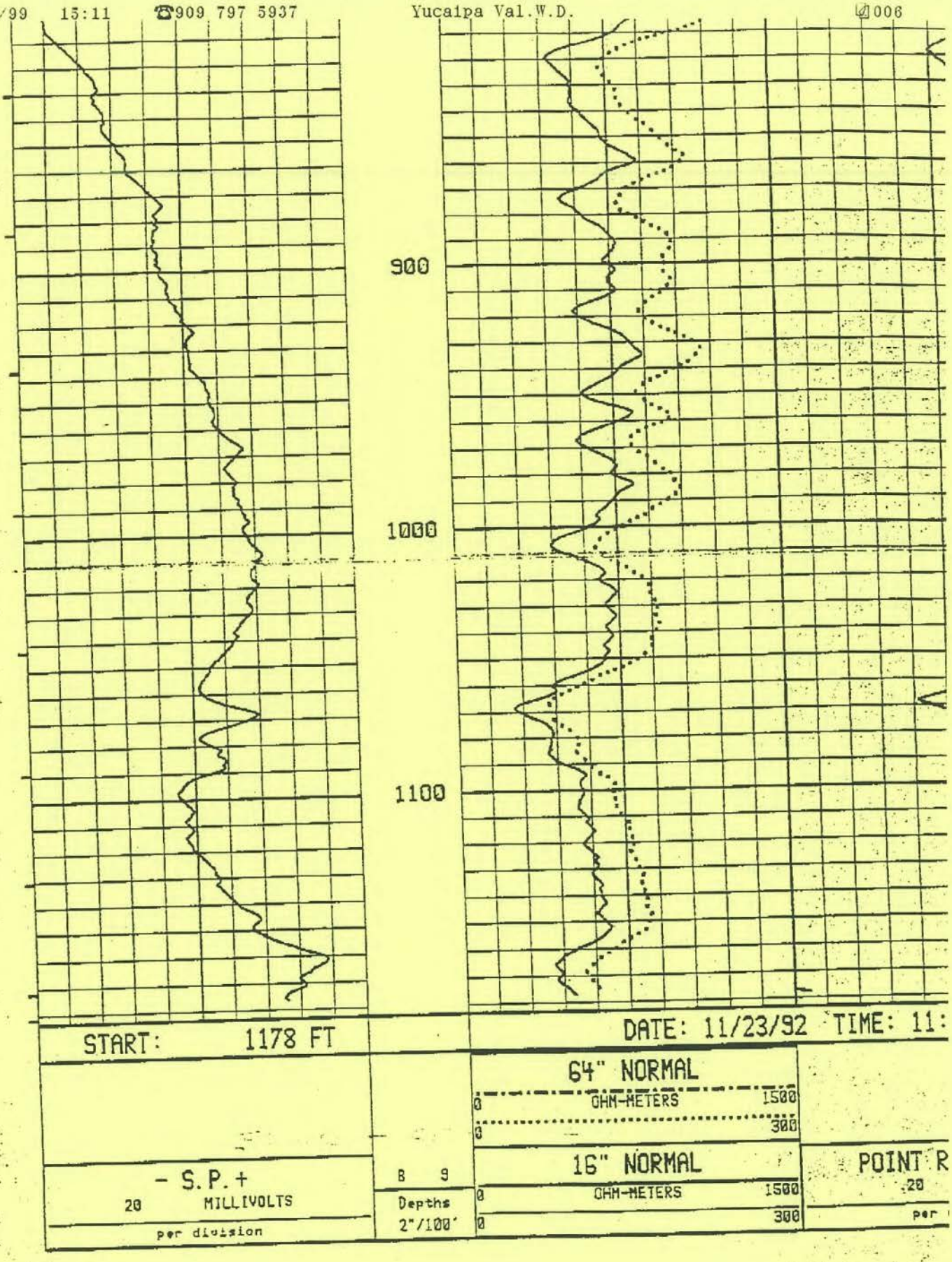
REMARKS:

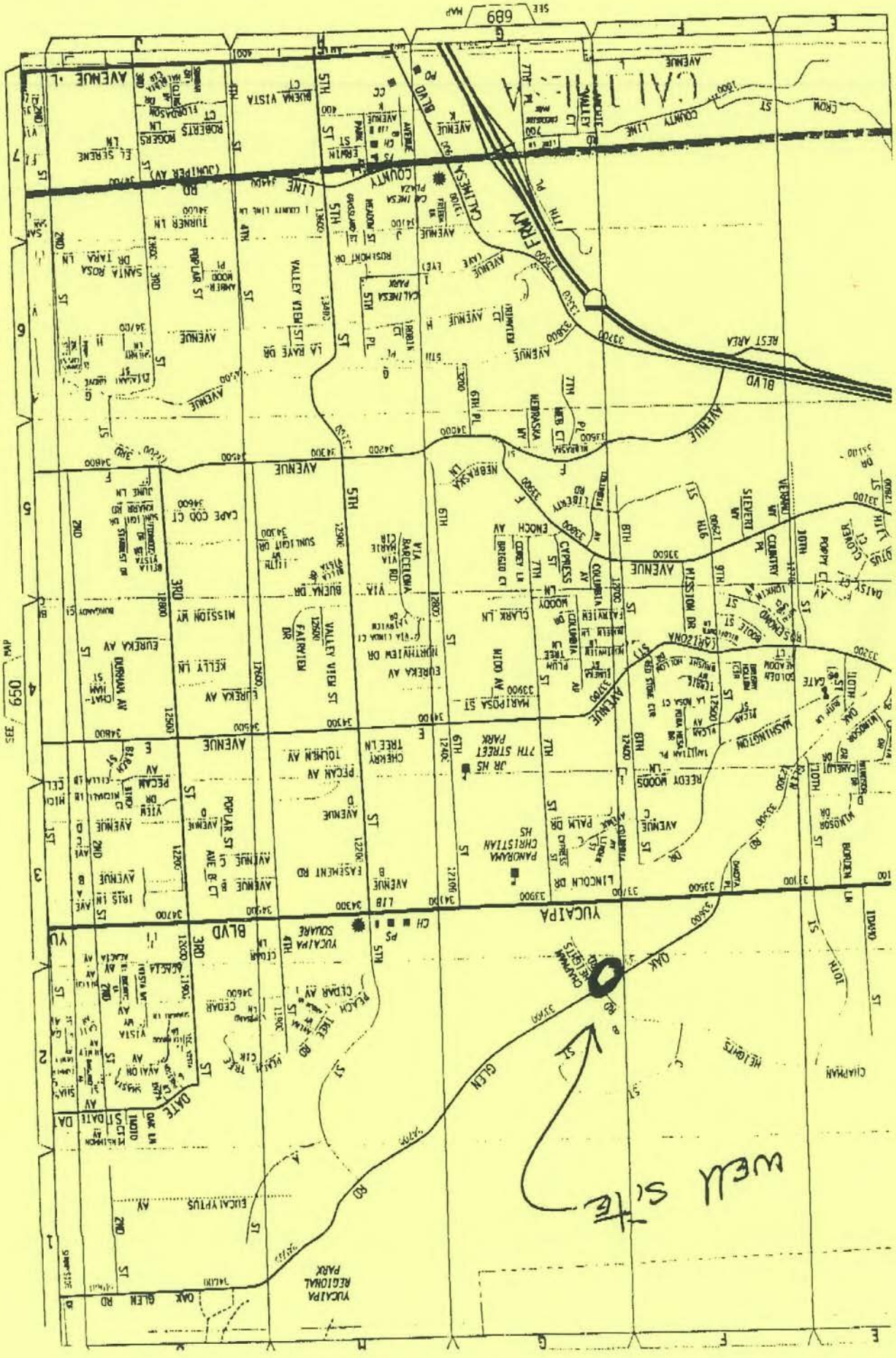
NOTICE: All interpretations are opinions based on inferences from electrical or other measurements and we cannot, and do not, guarantee the accuracy or correctness of any interpretations, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, damages or expenses incurred or sustained by anyone resulting from any interpretation made by one of our officers, agents or employees. These interpretations are also subject to our General Terms and Conditions as set out in our current Price Schedule.
Welenco

64" NORMAL
0 OHM-METERS 500


64" NORMAL
OHM-METERS
1500
300
- S.P. +
20 MILLIVOLTS
per division
B 9
Depths
2"/100'
16" NORMAL
OHM-METERS
1500
300
POINT RESIST
20 OHM
per division
STOP: 48 FT
DATE: 11/23/92 TIME: 12:21
100
200
300
400
500


02/05/99 15:11 ☎909 797 5937
Yucaipa Val.W.D.
005
400
500
600
700
800
900


900
1000
1100
START: 1178 FT
DATE: 11/23/92 TIME: 11:
64" NORMAL
0 OHM-METERS 1500
0 300
16" NORMAL
0 OHM-METERS 1500
0 300
POINT R
.20
per
- S.P. +
20 MILLIVOLTS
per division
8 9
Depths
2"/100'



REF. 449 G-2

INLAND EMPIRE

1S/2W-35H3

ORIGINAL
File with DWR

Page 1 of 1

Owner's Well No. 55

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet

No. 748842

DWR USE ONLY — DO NOT FILL IN
011S01 2W13 5 1H 10 13
STATE WELL NO./STATION NO.
LATITUDE LONGITUDE
APN/TRS/OTHER

Work Began 1-22-01, Ended 7-28-01

Local Permit Agency San Bernardino County Dept. of Public Health

Permit No. 2001 010028 Permit Date 1-18-01

GEOLOGIC LOG

ORIENTATION (✓) X VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)

DRILLING METHOD Reverse Cir. FLUID Polybore

DEPTH FROM SURFACE Ft.	to Ft.	DESCRIPTION (Describe material, grain size, color, etc.)
0	50	Top Soil Rock
50	100	Sand & Gravel
100	180	Sand, Gravel, & Rock
180	200	Sand, Clay, & Granite
200	230	Sand, Gravel, & Granite
230	250	Sand, Hard
250	270	Sand & Gravel
270	290	Hard Sand
290	380	Sand, Gravel, & Rock
380	430	Sand & small Gravel
430	480	Sand & Gravel
480	490	Sand
490	550	Hard Sand & Gravel
550	630	Sand & Gravel
630	700	Hard Sand & Gravel
700	770	Sand & Gravel
770	870	Gravel & Rocks
870	950	Sand & Gravel Granite
950	1000	Sand & Gravel
1000	1050	Hard Sand & Gravel
1050	1070	Granite & Rocks

TOTAL DEPTH OF BORING 1070 (Feet)
TOTAL DEPTH OF COMPLETED WELL 1050 (Feet)

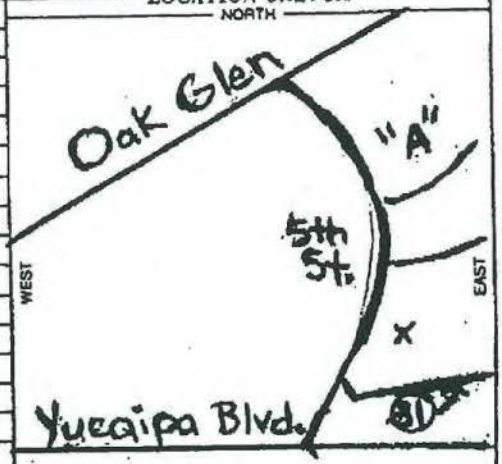
WELL OWNER

Name [redacted]
Mailing Address [redacted]
[redacted] CA 92399
CITY STATE ZIP

WELL LOCATION

Address ½ mile South Oak Glen Rd 100 East of 5th
City Yucaipa
County San Bernardino
APN Book 0303 Page 151 Parcel 31
Township 1S Range 2W Section 35
Latitude ___ DEG. ___ MIN. ___ SEC. NORTH
Longitude ___ DEG. ___ MIN. ___ SEC. WEST

LOCATION SKETCH



Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. PLEASE BE ACCURATE & COMPLETE.

ACTIVITY (✓)

X NEW WELL
MODIFICATION/REPAIR
___ Deepen
___ Other (Specify)
___ DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")

PLANNED USES (✓)

WATER SUPPLY
___ Domestic X Public
___ Irrigation ___ Industrial
MONITORING ___
TEST WELL ___
CATHODIC PROTECTION ___
HEAT EXCHANGE ___
DIRECT PUSH ___
INJECTION ___
VAPOR EXTRACTION ___
SPARGING ___
REMEDIATION ___
OTHER (SPECIFY) ___

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER 232' (Ft.) BELOW SURFACE
DEPTH OF STATIC WATER LEVEL 232' (Ft.) & DATE MEASURED 6-18-01
ESTIMATED YIELD * 1500 (GPM) & TEST TYPE Constant
TEST LENGTH 24 (Hrs.) TOTAL DRAWDOWN 144 (Ft.)
* May not be representative of a well's long-term yield.

CASING (S)

DEPTH FROM SURFACE Ft.	to Ft.	BORE-HOLE DIA. (Inches)	TYPE (✓) BLANK	SCREEN	CONDUCTOR	FILL PIPE	MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)
0	50	42			x		A53 GradeB	30	5/16	
+2	460	26	x				CopperBearing	16	5/16	
460	1030	26		x			FulFlo	16	5/16	.050
1030	1050	26	x				CopperBearing	16	5/16	
+2	459	26				x	A53 GradeB	2	Sch 40	

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft.	to Ft.	TYPE: CEMENT (✓)	BENTONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
0	50	x			
50	1070				6x16 Tacna Sand & Gravel

ATTACHMENTS (✓)

___ Geologic Log
___ Well Construction Diagram
___ Geophysical Log(s)
___ Soil/Water Chemical Analyses
___ Other ___

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME Bakersfield Well & Pump Co. (PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

7212 Fruitvale Ave. Bakersfield CA 93308
ADDRESS CITY STATE ZIP

Signed [signature] (WELL DRILLER/AUTHORIZED REPRESENTATIVE) 8-6-01 (DATE SIGNED) 440537 (C-57 LICENSE NUMBER)

DWR 188 REV. 11-97

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

AUG. 06 '01 (MON) 13:19 COMMUNICATION No:19 PAGE. 2

ORIGINAL
File with DWR

1S/2W-35

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet

Page 1 of 2

Owner's Well No. 57

No. 788723

Date Work Began 1-18-01 Ended 7-30-02

Local Permit Agency San Bernardino Environmental Health Services

Permit No. 2001010029 Permit Date 1-18-01

STATE WELL NO./STATION NO.

LATITUDE LONGITUDE

APN TRS OTHER

GEOLOGIC LOG

ORIENTATION (✓) X VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)

DRILLING METHOD Reverse Circulation FLUID Poly Bore

DEPTH FROM SURFACE Ft. to Ft.	DESCRIPTION — Describe material, grain size, color, etc.
40 to 130	sand & gravel
130 to 140	coarse gravel, sand, rock
140 to 160	sand, gravel, & rock
160 to 170	sand
170 to 180	gravel, sand , & rock
180 to 190	sand and small gravel
190 to 200	sand, some short cut gravel
200 to 210	sand, little clay, & gravel
210 to 230	sand with clay and small gravel
230 to 240	sand and gravel
240 to 250	sand and small gravel
250 to 260	sand, gravel, and different colors
260 to 270	sand, gravel, & granite
270 to 280	sand, gravel, sharp cuttings
280 to 290	sand and gravel
290 to 300	sand and large gravel
300 to 310	sand and mediam sharp
310 to 320	sand and gravel
320 to 330	sand and gravel (fine sharp)
330 to 390	sand and gravel
390 to 410	sand and mediam gravel
410 to 420	gravel and rock
420 to 440	sand and gravel
440 to 450	large gravel and different colors
450 to 470	sand and gravel
470 to 480	granite and gravel
480 to 490	sand and hard gravel
490 to 500	sand, gravel and little clay
500 to 520	sand and hard gravel
520 to 540	sand and mediam gravel

TOTAL DEPTH OF BORING 900 Feet

TOTAL DEPTH OF COMPLETED WELL N/A Feet

WELL OWNER

Name [redacted]

Mailing Address [redacted]

Yucaipa CA. 92399
CITY STATE ZIP

WELL LOCATION

Address 100' South of Oak Glen Rd. 250' West Chapman

City Yucaipa

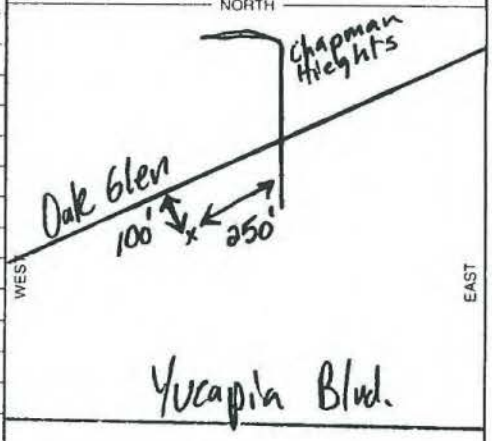
County San Bernardino

APN Book 0303 Page 131 Parcel 66

Township 1S Range 2W Section 35

Latitude ___ DEG ___ MIN ___ SEC NORTH Longitude ___ DEG ___ MIN ___ SEC WEST

LOCATION SKETCH



Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. PLEASE BE ACCURATE & COMPLETE.

ACTIVITY (✓)

X NEW WELL

MODIFICATION/REPAIR
___ Deepen
___ Other (Specify)

___ DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")

PLANNED USES (✓)

WATER SUPPLY
___ Domestic ___ Public
___ Irrigation ___ Industrial

MONITORING ___
TEST WELL X
CATHODIC PROTECTION ___
HEAT EXCHANGE ___
DIRECT PUSH ___
INJECTION ___
VAPOR EXTRACTION ___
SPARGING ___
REMEDIATION ___
OTHER (SPECIFY) ___

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER 259 (Ft.) BELOW SURFACE

DEPTH OF STATIC WATER LEVEL 259 (Ft.) & DATE MEASURED 2-29-01

ESTIMATED YIELD * 100 (GPM) & TEST TYPE Air Lift

TEST LENGTH 3 (Hrs.) TOTAL DRAWDOWN N/A (Ft.)

* May not be representative of a well's long-term yield.

CASING (S)

DEPTH FROM SURFACE Ft. to Ft.	BORE-HOLE DIA. (Inches)	TYPE (✓) BLANK	SCREEN	CONDUCTOR	FILL PIPE	MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)
0 to 50	42			x		A53 Grade B	30	5/16	
0 to 100	17½	x				PVC	5	Sch.40	
100 to 650	17½		x			PVC	5	Sch.40	.040

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft. to Ft.	TYPE: CEMENT (✓)	BENTONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
0 to 50	x			
50 to 650				
650 to 900			x	

ATTACHMENTS (✓)

___ Geologic Log
___ Well Construction Diagram
___ Geophysical Log(s)
___ Soil/Water Chemical Analyses
___ Other

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME Bakersfield Well & Pump Co.
(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

7212 Fruitvale Ave Bakersfield CA. 93308
ADDRESS CITY STATE ZIP

Signed [signature] 8-10-02 440537
WELL DRILLER/AUTHORIZED REPRESENTATIVE DATE SIGNED C-57 LICENSE NUMBER

DWR [illegible]

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

ORICINAL
File with DWR

Page 2 of 2

Owner's Well No. 57

Date Work Began 1-18-02 Ended 7-30-02

Local Permit Agency San Bernardino Environmental Health services

Permit No. 2001010029 Permit Date 1-18-02

STATE OF CALIFORNIA

WELL COMPLETION REPORT

Refer to Instruction Pamphlet

No. 788724

STATE WELL NO/STATION NO

LATITUDE LONGITUDE

APN/TRS/OTHER

GEOLOGIC LOG

ORIENTATION (✓) X VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)

DRILLING METHOD Reverse Circulation FLUID Poly Bore

DEPTH FROM SURFACE Ft	to Ft	DESCRIPTION *Describe material, grain size, color, etc.*
540	550	rock
550	560	sand, gravel, and little clay
560	570	some white gravel and clay
570	580	white gravel and granite
580	600	brown clay and white gravel
600	610	sand and fine gravel
610	630	granite and brwn clay
630	640	clay and mediam gravel
640	650	gravel and little clay
650	670	gravel and black & green clay
670	680	gravel and small cuttings
680	690	gray clay
690	700	gravel
700	710	clay brown green gravel
710	720	brown clay
720	730	sand, gravel & sharp cuttings
730	740	gravel and sand
740	750	sand and gravel & clay
750	760	granite
760	770	sand and clay
770	780	sand gravel and smallcuttings
780	800	granite
800	840	gravel and sand
840	860	mediam cuttings, sand & gravel
860	870	coarse large granite cut.
870	880	granite and some gravel
880	900	granite

TOTAL DEPTH OF BORING _____ (Feet)

TOTAL DEPTH OF COMPLETED WELL _____ Feet

WELL OWNER

Name [redacted]

Mailing Address [redacted]

Yucaipa CA. 92399

CITY STATE ZIP

WELL LOCATION

Address _____

City _____

County _____

APN Book _____ Page _____ Parcel _____

Township _____ Range _____ Section _____

Latitude _____ DEG MIN SEC NORTH Longitude _____ DEG MIN SEC WEST

LOCATION SKETCH

NORTH

WEST EAST

SOUTH

Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary ***PLEASE BE ACCURATE & COMPLETE.***

ACTIVITY (✓)

___ NEW WELL

MODIFICATION/REPAIR

___ Deepen

___ Other (Specify) _____

___ DESTROY *(Describe Procedures and Materials Under GEOLOGIC LOG)*

PLANNED USES (✓)

WATER SUPPLY

___ Domestic ___ Public

___ Irrigation ___ Industrial

___ MONITORING

___ TEST WELL

___ CATHODIC PROTECTION

___ HEAT EXCHANGE

___ DIRECT PUSH

___ INJECTION

___ VAPOR EXTRACTION

___ SPARGING

___ REMEDIATION

___ OTHER (SPECIFY)

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER _____ (Ft.) BELOW SURFACE

DEPTH OF STATIC WATER LEVEL _____ (Ft.) & DATE MEASURED _____

ESTIMATED YIELD * _____ (GPM) & TEST TYPE _____

TEST LENGTH _____ (Hrs.) TOTAL DRAWDOWN _____ (Ft.)

* *May not be representative of a well's long-term yield.*

CASING (S)

DEPTH FROM SURFACE Ft	to Ft	BORE HOLE DIA. (Inches)	TYPE (✓) BLANK	SCREEN	CONDUCTOR	FILL PIPE	MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft	to Ft	TYPE CEMENT (✓)	BENTONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)

ATTACHMENTS (✓)

___ Geologic Log

___ Well Construction Diagram

___ Geophysical Log(s)

___ Soil/Water Chemical Analyses

___ Other _____

ATTACH ADDITIONAL INFORMATION IF IT EXISTS

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME Bakersfield Well & Pump Co.
(PERSON FIRM OR CORPORATION) (TYPED OR PRINTED)

7212 Fruitvale Ave. Bakersfield CA. 93308

ADDRESS CITY STATE ZIP

Signed _____
WELL DRILLER/AUTHORIZED REPRESENTATIVE

8-10-02 DATE SIGNED

440537 C-57 LICENSE NUMBER

DWR 188 REV 11/98

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

ORIGINAL
File with DWR

Page 1 of 1

Owner's Well No. 57

Date Work Began 8-29-02 Ended 9-20-02

Local Permit Agency San Bernardino Environmental Health Services

Permit No. 2002 08 0700 Permit Date 8-29-02

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet

No. 788719

DWR USE ONLY — DO NOT FILL IN
STATE WELL NO./STATION NO.
LATITUDE LONGITUDE
APN/TRS/OTHER

GEOLOGIC LOG

ORIENTATION (✓) X VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)

DRILLING METHOD Abandon Well FLUID ___

DEPTH FROM SURFACE Ft.	to Ft.	DESCRIPTION *Describe material, grain size, color, etc.*
0	10	fill
10	650	cement

TOTAL DEPTH OF BORING: 650 (Feet)

TOTAL DEPTH OF COMPLETED WELL: 650 (Feet)

WELL OWNER

Name [redacted]

Mailing Address [redacted]

Yucaipa CA. 92399
CITY STATE ZIP

WELL LOCATION

Address 100' South of Oak Glen Rd. 250' West Chapman

City Yucaipa

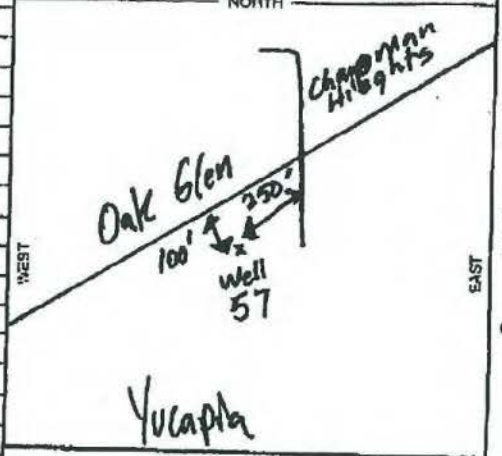
County San Bernardino

APN Book 0303 Page 131 Parcel 66

Township 1S Range 2W Section 35

Latitude ___ DEG. ___ MIN. ___ SEC. NORTH Longitude ___ DEG. ___ MIN. ___ SEC. WEST

LOCATION SKETCH



Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. PLEASE BE ACCURATE & COMPLETE.

ACTIVITY (✓)

___ NEW WELL

MODIFICATION/REPAIR
___ Deepen
___ Other (Specify)

X DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")

PLANNED USES (✓)

WATER SUPPLY
___ Domestic ___ Public
___ Irrigation ___ Industrial

___ MONITORING
___ TEST WELL
___ CATHODIC PROTECTION
___ HEAT EXCHANGE
___ DIRECT PUSH
___ INJECTION
___ VAPOR EXTRACTION
___ SPARGING
___ REMEDIATION
___ OTHER (SPECIFY)

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER 259 (Ft.) BELOW SURFACE

DEPTH OF STATIC WATER LEVEL ___ (Ft.) & DATE MEASURED ___

ESTIMATED YIELD * ___ (GPM) & TEST TYPE ___

TEST LENGTH ___ (Hrs.) TOTAL DRAWDOWN ___ (Ft.)

* May not be representative of a well's long-term yield.

CASING (S)

DEPTH FROM SURFACE Ft.	to Ft.	BORE-HOLE DIA. (Inches)	TYPE (✓) BLANK	SCREEN	CON-DUCTOR	FILL PIPE	MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft.	to Ft.	TYPE CEMENT (✓)	BENTONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
0	10			X	
10	650	X			

ATTACHMENTS (✓)

___ Geologic Log
___ Well Construction Diagram
___ Geophysical Log(s)
___ Soil/Water Chemical Analyses
___ Other ___

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME Bakersfield Well & Pump Co.
(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

ADDRESS 7212 Fruitvale Ave. Bakersfield CA. 93308
CITY STATE ZIP

Signed ___ 11-20-02
WELL DRILLER/AUTHORIZED REPRESENTATIVE DATE SIGNED

440537
C-57 LICENSE NUMBER

DWR 188 REV. 11-97

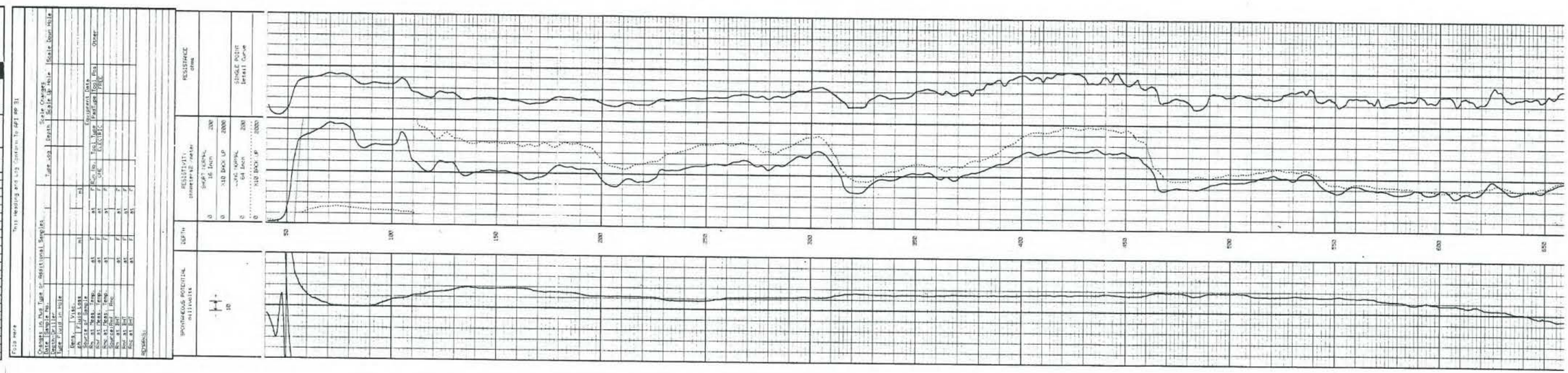
IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

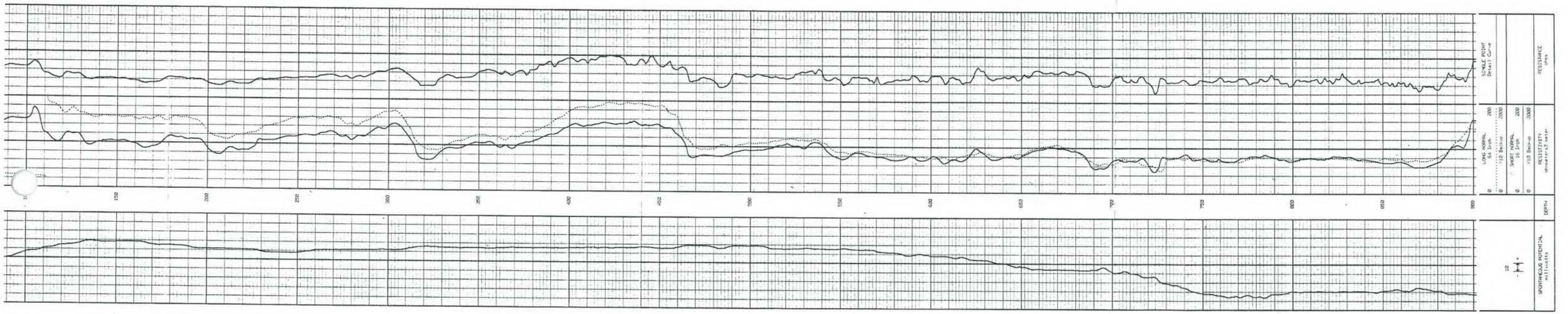
well 57
1s/2w-35

welenco

ELECTRIC LOG

FILING NO.	COMPANY KRIEGER & STEWART			
	WELL 57			
	FIELD YUCAIPA			
	COUNTY RIVERSIDE STATE CALIFORNIA			
	LOCATION: OAK GLEN ROAD			OTHER SERV
				GAMMA RAY
JOB NO.				SONIC-VDL
33869	SEC TWP RGE			
Permanent Datum: GROUND LEVEL Elev.:				K.B.
Log Measured From G.L. 0 Ft Above Perm Datum				D.F.
Drilling Measured From GROUND LEVEL				G.L.
Date	02-10-2001	- -		- - -
Run No.	ONE			
Depth - Driller	980'			
Depth - Logger	980'			
Btm. Log Inter.	980'			
Top Log Inter.	40'			
Casing-Driller	30" at 58'	at		at
Casing-Logger	at 58'	at		at
Bit Size	17.5"			
Type Fluid In Hole	POLY BORE			
Dens. / Visc.	N/A / N/A			
pH / Fluid Loss	N/A / N/A ml		ml	ml
Source of Sample	PIT			
Rm at Meas.Temp	16.6 at 75 F	at 75 F		at 75 F
Rmf at Meas.Temp	15.2 at 75 F	at 75 F		at 75 F
Rmc at Meas.Temp	N/A at -- F	at F		at F
Source:Rmf Rmc	MEAS / N-A			
Rm at BHT	N/A at F	at F		at F
Time Since Circ.	14 HOURS			
Max. Rec. Temp.	N/A F		F	F
Equip. Location	L-16 / BFL			
Recorded By	D. JACKSON			
Witnessed By	R. S. L.			




SINGLE POINT
Detail Curve
LONG NORMAL
64 Inch
SHORT NORMAL
16 Inch
RESISTIVITY
RESISTANCE
DEPTH
SPONTANEOUS POTENTIAL

well 57

1S/2W-35

welenco

GAMMA RAY - SONIC - VDL LOG

FILING NO.	COMPANY KRIEGER & STEWART		
	WELL 57		
	FIELD YUCAIPA		
	COUNTY RIVERSIDE	STATE CALIFORNIA	
	LOCATION: OAK GLEN ROAD		OTHER SERV.
			ELOG
JOB NO. 33969	SEC TWP RGE		
PERMANENT DATUM: GROUND LEVEL	ELEV.		ELEVATION:
LOG MEASURED FROM G.L. 0 FT ABOVE PERM DATUM			KB
DRILLING MEASURED FROM GROUND LEVEL			DF
			GL

	02-10-2001	02-10-2001	
TYPE OF LOG	GAMMA RAY	SONIC - VDL	
RUN NO.	ONE	ONE	
DEPTH - DRILLER	988'	988'	
DEPTH - LOGGER	988'	988'	
BOTTOM LOGGED INT	788'	932'	
TOP LOGGED INT	0'	0'	
TYPE FLUID IN HOLE	POLY BORE	POLY BORE	
FLUID LEVEL	FULL	FULL	
MAX TEMP DEG F	N-A	N-A	
OPERATING RIG TIME	1 HOUR	1 1/2 HOURS	
EQUIP. LOCATION	L--16 RFL	L-16 RFL	
OPERATOR	D. JACKSON	D. JACKSON	
WITNESSED BY	M. S. L.	M. S. L.	

RUN	BORE HOLE RECORD			CASING RECORD			
NO.	BIT	FROM	TO	SIZE	TYPE	FROM	TO
ONE	17.5"	58'	988'	10"	STEEL	5'	58'

EQUIPMENT DATA

LOG TYPE	GAMMA RAY	SONIC - VDL			
RUN NO.	ONE	ONE			
TOOL MODEL NO.	ORS	MLS			
TOOL SERIAL NO.	T-34	T-22			
DIAMETER	1.8"	2.125"			
DETECTOR TYPE	SCINT.	PIEZO			
DETECTOR LENGTH	8"	3' & 5'			
UNITS/DIV.	10 API	20 uSec/Ft.			
SENSITIVITY	100-122	4			
ZERO DIV L OR R	0 - L	2 - R			
SPEED-FPM	30	17			
DATA SAMPLES/FT	10	10			
FORMATION FACTOR	N-A	N-A			
TIME CONSTANT	3	N-A			
PUMP RATE-GPM	N-A	N-A			
PUMP RATE-GPM	N-A	N-A			
PUMP RATE-GPM	N-A	N-A			

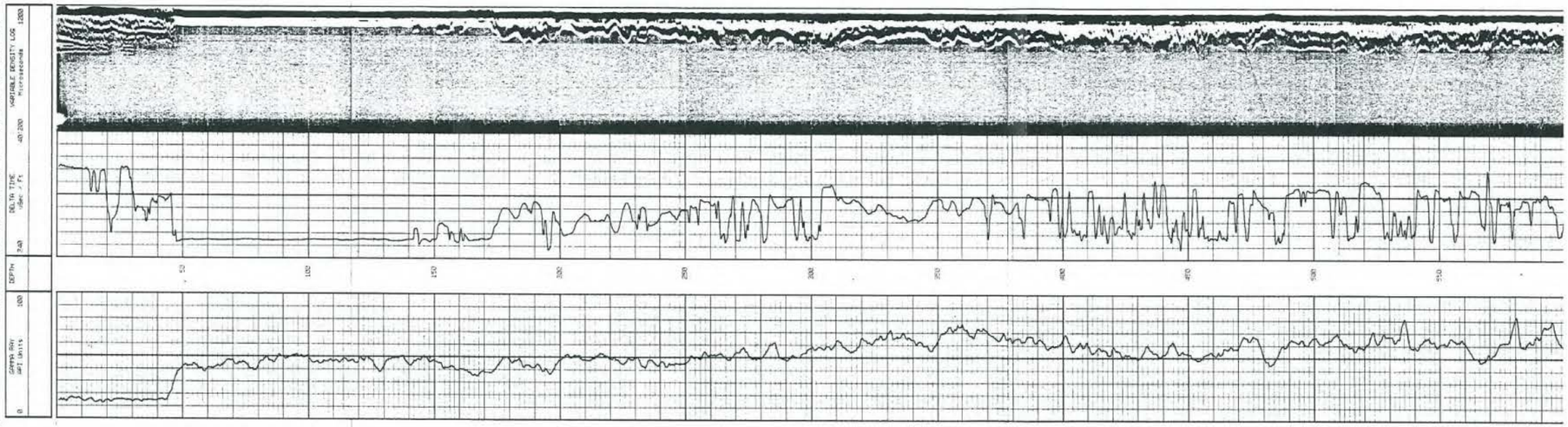
SOURCE TYPE	STRENGTH	SPACING	MODEL NO	SERIAL NO.

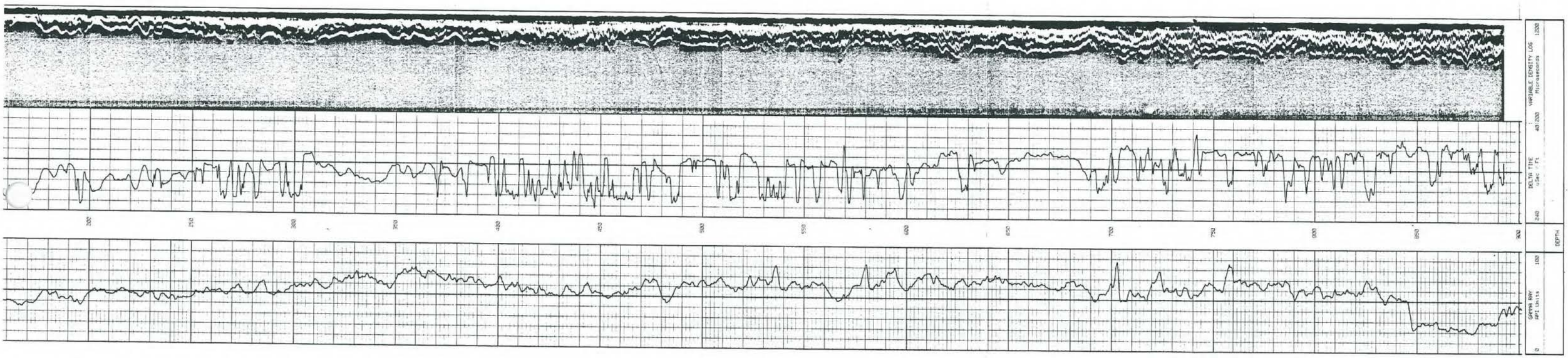
PERFORATIONS:

REMARKS: VDL RECORDED FROM 5' RECIEVER

NOTICE:
All interpretations are opinions based on inferences from electrical or other measurements and we cannot, and do not guarantee the accuracy or correctness of any interpretations, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, damages or expenses incurred or sustained by anyone resulting from any interpretation made by one of our officers, agents or employees. These interpretations are also subject to our General Terms and Conditions as set out in our current Price Schedule.

WELENCO, INC




VARIABLE DENSITY LOG
DELTA TIME
GAMMA RAY
API Units
DEPTH

...PLICATE
Owner's Copy

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES

WATER WELL DRILLERS REPORT

Do not fill in

No. 253147

Notice of Intent No. F

Local Permit No. or Date 014773

State Well No. 03S-01W-15F02S

Other Well No.

(1) OWNER: Name [redacted]
Address [redacted]
City LOS ANGELES, CA. ZIP 90004

(2) LOCATION OF WELL (See instructions):
County RIVERSIDE Owner's Well Number #26
Well address if different from above OFF WILDWOOD CYN. RD.
Township 2S Range 1W Section 15F02
Distance from cities, roads, railroads, fences, etc.

W-60

WELL LOCATION SKETCH

(3) TYPE OF WORK:
New Well [X] Deepening [ ]
Reconstruction [ ]
Reconditioning [ ]
Horizontal Well [ ]
Destruction [ ] (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:
Domestic [ ]
Irrigation [ ]
Industrial [ ]
Test Well [ ]
Municipal [ ]
Other [X]
(Describe) COMMERCIAL

(5) EQUIPMENT:
Rotary [ ] Reverse [ ]
Cable [ ] Air [X]
Other [ ] Bucket [ ]

(6) GRAVEL PACK:
Yes [X] No [ ] Size 3/8"
Diameter of bore
Packed from 50 ft. to 462 ft.

(7) CASING INSTALLED:
Steel [X] Plastic [ ] Concrete [ ]

From ft.	To ft.	Dia. in.	Gage or Wall
0	462	9 5/8	188

(8) PERFORATIONS:
Type of perforation or size of screen

From ft.	To ft.	Slot size
189	399	.060
399	462	.0120

(9) WELL SEAL:
Was surface sanitary seal provided? Yes [X] No [ ] If yes, to depth 50 ft.
Were strata sealed against pollution? Yes [ ] No [X] Interval ft.
Method of sealing STEEL CASING & CEMENT

(10) WATER LEVELS:
Depth of first water, if known 140 ft.
Standing level after well completion 140 ft.

(11) WELL TESTS:
Was well test made? Yes [X] No [ ] If yes, by whom? DRILLER
Type of test Pump [ ] Bailer [ ] Air lift [X]
Depth to water at start of test 140 ft. At end of test ft.
Discharge 500 gal/min after 2 hours Water temperature
Chemical analysis made? Yes [ ] No [X] If yes, by whom?
Was electric log made Yes [ ] No [X] If yes, attach copy to this report

(12) WELL LOG: Total depth 0 ft. Completed depth 462 ft.
from ft. 0 to 462 Formation (Describe by color, character, size or material)

0-20' - FIRM BROWN DIRT
20-25' - FIRM BLUE DG
25-115' - FIRM BROWN DG
115-140' - BROKEN UP BLUE GRANITE/LITTLE WATER
140-180' - BROKEN UP BLACK GRANITE/WHITE QUARTZ
180-260' - BROKEN UP BLUE GRANITE
260-280' - BLUE & GREEN GRANITE/LITTLE WATER
280-340' - HARD BLUE GRANITE
340-360' - HARD BLACK GRANITE
360-380' - BROKEN UP BLUE-GREEN GRANITE/WATER
380-400' - BROKEN UP BLUE & WHITE GRANITE/WATER
400- 420' - BROKEN UP BLUE-GREEN GRANITE/WATER
420-440' - BROKEN UP BLUE, GREEN, WHITE GRANITE/WA
440-462' - HARD BLUE GRANITE

Work started 11-29 19 88 Completed 12-8 19 88

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

Signed (Well Driller)

NAME SAM CRUM WATER WELL DRILLING
(Person, firm, or corporation) (Typed or printed)

Address 1803 MARYVALE LN.

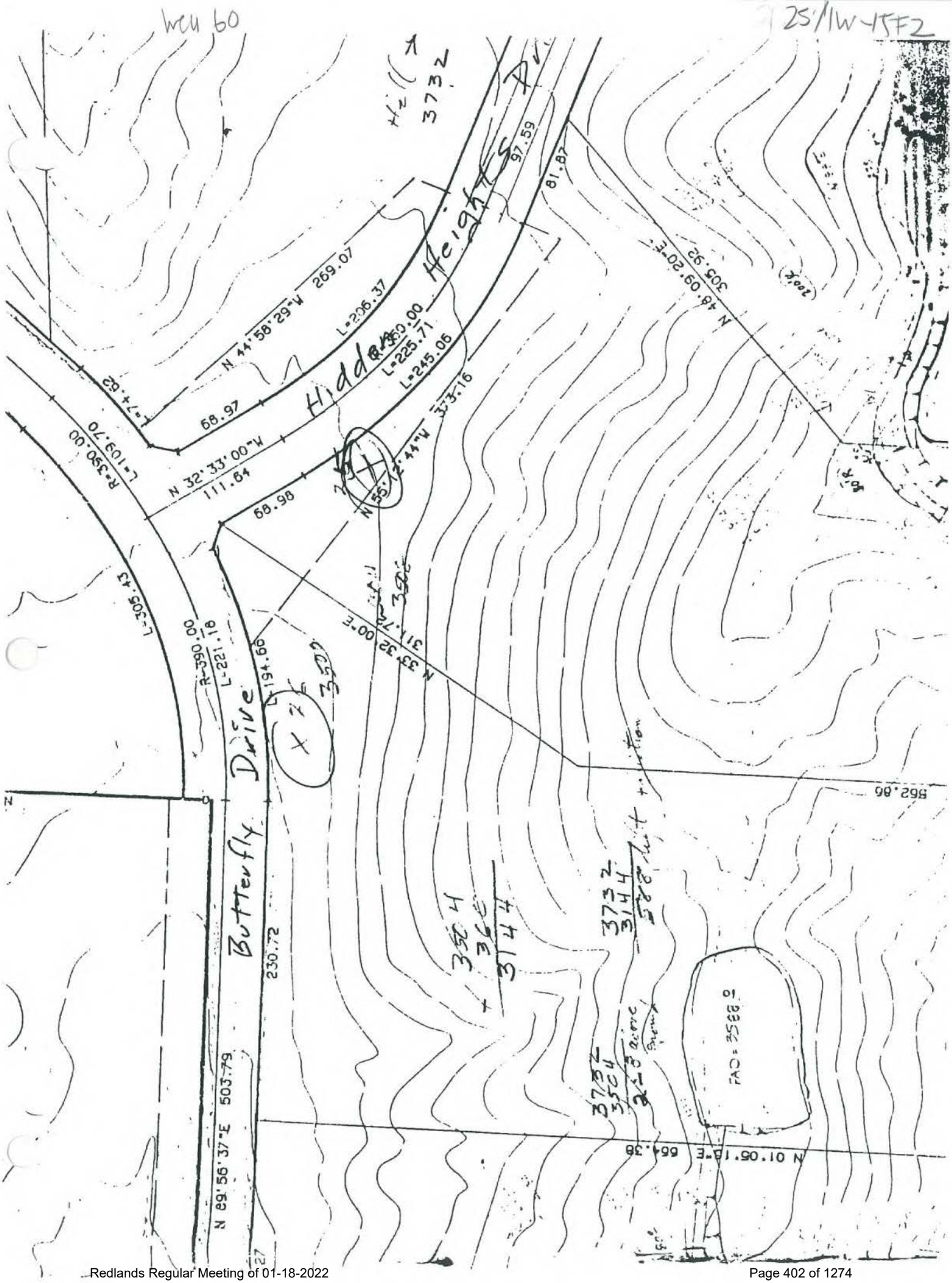
City HEMET, CA. ZIP 92344

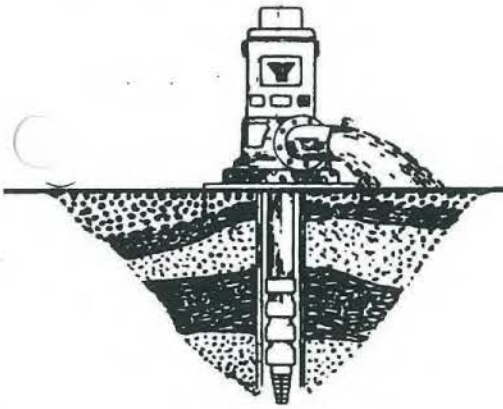
License No. 534298 Date of this report 12-13-88

DWR 188 (REV. 12-86) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

86 96355

COPY NOT FOR PUBLIC USE
WATER CODE SEC. 13752


Butterfly Drive
Hidden Heights Dr.
N 89°56'37"E 503.79
230.72
L=194.66
R=390.00
L=221.18
L=305.43
R=390.00
L=109.70
N 32°33'00"W
111.64
68.98
68.97
L=74.82
N 41°58'29"W 269.07
L=206.37
R=350.00
L=225.71
L=245.06
N 55°12'44"W 323.16
N 48°09'20"E 305.92
81.87
97.59
862.86
N 01°05'10"E 664.38
FAD = 3568.0



Miller Pump Service

Deep Well Turbine Specialists

January 16, 1989

[redacted]
Los Angeles,Ca. 90004

SUBJECT: Well test information:

Dear Mr. [redacted];

Please find enclosed test reports on Wells # 25, and # 26, tested on January 12th., and 13th., 1989.

Well # 25 - I would suggest a pump setting of 300 feet at 150 GPM. Pressure above ground would determine the horse-power of the pump.

Well # 26 - I would suggest a pump setting of 300 feet at 550 GPM maximum in order to stay away from the air being produced from cascading water. I believe the well is capable of producing 800 GPM on a daily basis, 24 hours a day. Pressure above ground would determine the horse-power of the pump.

If you have any questions, please feel free to call me.

Sincerely,

Robert W. Miller

RWM/gf

24041 Mesa View Street • San Jacinto, California 92383 • Telephone (714) 654-8466

well-61

...LICATE
...wner's Copy

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES

WATER WELL DRILLERS REPORT

Do not fill in
No. 253143

...ice of Intent No. _____
Local Permit No. or Date 014770

State Well No. 025/010-15F01S
Other Well No _____

(1) OWNER: Name [redacted]
Address [redacted]
City LOS ANGELES, CA. ZIP 90004

(2) LOCATION OF WELL (See instructions): W-61
County RIVERSIDE Owner's Well Number #25
Well address if different from above OFF WILDWOOD CYN. RD.
Township 2S Range 1W Section 15F01
Distance from cities, roads, railroads, fences, etc. _____

(3) TYPE OF WORK:
New Well [X] Deepening [ ]
Reconstruction [ ]
Reconditioning [ ]
Horizontal Well [ ]
Destruction [ ] (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:
Domestic [ ]
Irrigation [ ]
Industrial [ ]
Test Well [ ]
Municipal [ ]
Other [X]
(Describe) COMMERCIAL

WELL LOCATION SKETCH

(5) EQUIPMENT:
Rotary [ ] Reverse [ ]
Cable [ ] Air [X]
Other [ ] Bucket [ ]

(6) GRAVEL PACK:
Yes [XX] No [ ] Size 3/8"
Diameter of bore 12"
Packed from 50 ft. to 462 ft.

(7) CASING INSTALLED
Steel [XX] Plastic [ ] Concrete [ ]

From ft	To ft	Dia in	Gage or Wall
0	480	85/8	188

(8) PERFORATIONS
Type of perforation or size of screen

From ft	To ft	Slot size
189	399	.060
399	462	.0120

(9) WELL SEAL:
Was surface sanitary seal provided? Yes [X] No [ ] If yes, to depth DRILLER ft.
Were strata sealed against pollution? Yes [ ] No [X] Interval _____ ft.
Method of sealing STEEL CASING & CEMENT

(10) WATER LEVELS:
Depth of first water, if known 260 ft.
Standing level after well completion 143 ft.

(11) WELL TESTS:
Was well test made? Yes [X] No [ ] If yes, by whom? DRILLER
...of test Pump [ ] Bailer [ ] Air lift [XX]
...h to water at start of test 143 ft. At end of test _____ ft.
...ld large 475 gal/min after 2 hours Water temperature _____
...emical analysis made? Yes [ ] No [X] If yes, by whom? _____
Was electric log made Yes [ ] No [X] If yes, attach copy to this report

(12) WELL LOG: Total depth 480 ft. Completed depth 480 ft.
from ft. 0 to 480 Formation (Describe by color, character, size or material)

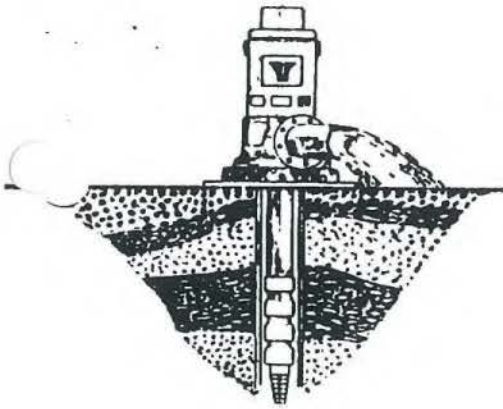
0-40' - SOFT BROWN DG
40-120' FIRM BROWN DG
120-180' FIRM BLUE DG
180-240' HARD BLUE DG
240-260' BROKEN-UP BLUE DG
260-320' BROKEN-UP BLUE & GREEN DG/WATER
320-340' BLUE & BROWN DG MIX
340-380' BROKEN-UP BLUE DG/WHITE QUARTZ & MORE WATER
380-480' BROKEN-UP BLUE & GREEN DG WITH LOTS OF WATER

Work started 12-8 19 88 Completed 12-14 19 88

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
Signed _____ (Well Driller)
NAME SAM CRUM WATER WELL DRILLING (Person, firm or corporation) (Typed or printed)
Address 1803 MARYVALE LN.
City HEMET, CA. ZIP 92344
License No 534298 Date of this report _____

VOID
NOT FOR PUBLIC USE
WATER CODE SEC. 13752

DWR 188 (REV. 12-86) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM 86 26355



Miller Pump Service

Deep Well Turbine Specialists

January 16, 1989

[redacted]
Los Angeles,Ca. 90004

SUBJECT: Well test information:

Dear Mr. Dickinson;

Please find enclosed test reports on Wells # 25, and # 26, tested on January 12th., and 13th., 1989.

Well # 25 - I would suggest a pump setting of 300 feet at 150 GPM. Pressure above ground would determine the horse-power of the pump.

Well # 26 - I would suggest a pump setting of 300 feet at 550 GPM maximum in order to stay away from the air being produced from cascading water. I believe the well is capable of producing 800 GPM on a daily basis, 24 hours a day. Pressure above ground would determine the horse-power of the pump.

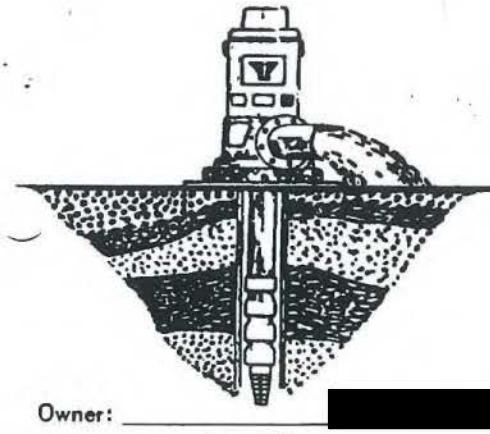
If you have any questions, please feel free to call me.

Sincerely,

Robert W. Miller

RWM/gf

24041 Mesa View Street • San Jacinto, California 92383 • Telephone (714) 654-8466



Miller Pump Service

Deep Well Turbine Specialists

FIELD TEST REPORT

Owner: [redacted] Well No. 25

Pump Mfr. Goulds Ser. No. _____ Well Dia. 8" Depth 462

Motor Mfr. _____ Ser. No. _____ Frame _____

H.P. 25 RPM 3500 Volts 400 Amps _____ Cycle _____

Power Co. _____ Meter No. _____ Kh _____ C.T. Ratio _____

Engine Mfr. Generator

TEST DATES: 1/12/89 1/13/89 _____ _____ _____

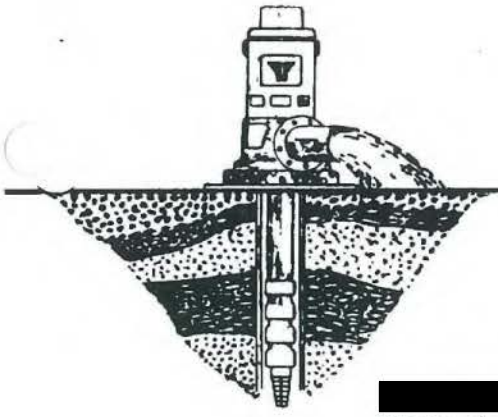
Pressure Readings in Lbs.	Airline, Static	109	104			
	Airline, Pumping					
	Discharge Head					
Airline Length – Feet		395	395			
Airline Static Pressure – Feet						
STATIC WATER LEVEL		144	155			
Airline Length – Feet						
Airline Pumping Pressure – Feet						
PUMPING LEVEL		201	252			
Discharge Head – Feet						
TOTAL HEAD – Feet		Ø	Ø			
Pumping Level – Feet		201	252			
Static Level – Feet		144	155			
DRAWDOWN		57	97			
Flow Reading	Pitot					
	Orifice					
	Other					
CAPACITY	GPM	185	165			
	Miners Inches					
GPM Per Foot Drawdown		3.24	1.70			
METER DATA: Revs/Sec						
KW Input						
HP Input						
BHP Input to Pump @ % Motor eff.						
PUMP RPM						
LOAD Volts						
LOAD Amps						
Water Horsepower						
Pump Efficiency						
Overall Efficiency						
KWH per Acre Foot						

Pump Setting: 395 ft. 395 ft. _____ _____ _____

Column Size: 3" Discharge dia. 4" meter

Bowl Assembly (Stages & Type) _____

Remarks:



Miller Pump Service

Deep Well Turbine Specialists

[redacted]

Well # 25

1/12/89

SWL - standing	water level	144 ft.	
9:30 A:M	100 GPM	109 PSI	144 ft. p/L
10:30 A:M	200 GPM	108 PSI	145 ft.
11:30 A:M	220 GPM	106 PSI	149 ft.
12:30 P:M	220 GPM	106 PSI	149 ft.
1:30 P:M	220 GPM	104 PSI	155 ft.
2:30 P:M	200 GPM	94 PSI	179 ft.
3:30 P:M	190 GPM	88 PSI	192 ft.
4:30 P:M	185 GPM	84 PSI	201 ft.

1/13/89

SWL - standing	water level	155 ft.	
8:30 A:M	220 GPM	104 PSI	155 ft. p/L
9:30 A:M	185 GPM	84 PSI	201 ft.
10:30 A:M	177 GPM	76 PSI	219 ft.
11:30 A:M	170 GPM	72 PSI	229 ft.
12:30 P:M	165 GPM	70 PSI	233 ft.
1:30 P:M	165 GPM	66 PSI	243 ft.
2:30 P:M	165 GPM	62 PSI	252 ft.
4:00 P:M	165 GPM	62 PSI	252 ft.

24041 Mesa View Street • San Jacinto, California 92383 • Telephone (714) 654-8466

Now YVWD Well #64

H

TRIPLICATE
Owner's Copy

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
WATER WELL DRILLERS REPORT

Do not fill in
No. 074476

tice of Intent No. Well #6
al Permit No. or Date 08037902

State Well No.
Other Well No.

OWNER: Name [redacted]
Address [redacted]
City Los Angeles, Ca. Zip 90057

(2) LOCATION OF WELL (See instructions):
County San Bernardino Owner's Well Number
Well address if different from above
Township 2S Range 1W Section 2
Distance from cities, roads, railroads, fences, etc.

X Glen Rd
Oak Glen

WELL LOCATION SKETCH

(3) TYPE OF WORK:
New Well ☐ Deepening ☐
Reconstruction ☐
Reconditioning ☐
Horizontal Well ☐
Destruction ☒ (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:
Domestic ☐
Irrigation ☐
Industrial ☐
Test Well ☒
Stock ☐
Municipal ☐
Other ☐

(5) EQUIPMENT:
Rotary ☐ Reverse ☐
Cable ☐ Air ☒
Other ☐ Bucket ☐

(6) GRAVEL PACK:
Yes ☐ No ☑ Size
Diameter of bore 6.25B
Packed from ft. to ft.

(7) CASING INSTALLED:
Steel ☐ Plastic ☐ Concrete ☐

From ft.	To ft.	Dia. in.	Gage or Wall

(8) PERFORATIONS:
Type of perforation or size of screen

From ft.	To ft.	Slot size

(9) WELL SEAL:
Was surface sanitary seal provided? Yes ☐ No ☒ If yes, to depth ft.
Were strata sealed against pollution? Yes ☐ No ☒ Interval ft.
Method of sealing

(10) WATER LEVELS:
Depth of first water, if known ft.
Standing level after well completion ft.

(11) WELL TESTS:
Was well test made? Yes ☐ No ☒ If yes, by whom?
Type of test Pump ☐ Bailer ☐ Air lift ☐
Depth to water at start of test ft. At end of test ft.
Discharge 5-6 gal/min after hours Water temperature
Chemical analysis made? Yes ☐ No ☒ If yes, by whom?
Was electric log made? Yes ☐ No ☒ If yes, attach copy to this report

(12) WELL LOG: Total depth 360 ft. Depth of completed well 360 ft.

from ft.	to ft.	Formation (Describe by color, character, size or material)
0	145	DG
145	168	White Quartz, & black rock
168	200	DG
200	210	Fractured granite & DG
210	230	DG
230	258	Fractured granite & DG
258	265	Firmer DG
265	280	Softer- lots of white clay
280	360	Granite & DG
360		STOP

-Method of Destruction-
Hole filled in with earth & natural cuttings, as per County requirements.

Work started 8-13 19 79 Completed 8-14 19 79

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
Signed Joseph W. Grammer (Well Driller)
NAME Jack Jones Wells & Pumps (Person, firm, or corporation) (Typed or printed)
Address P.O. Box 2031
City Hemet, Ca. Zip 92343
License No. 281601 Date of this report 9-19-79

188 (REV. 7-72) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

CONFIDENTIAL NOT FOR PUBLIC USE WATER CODE SEC. 13752

Well 5 V Completed

CATE
or's Copy

Well 5

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
WATER WELL DRILLERS REPORT

Very Good

Do not fill in
No. 068637

ice of Intent No.
oeal Permit No. or Date

State Well No.
Other Well No.

(1) OWNER: Name [redacted]
Address [redacted]
City Los Angeles CA. Zip 90057

(2) LOCATION OF WELL (See instructions):
County San Bernardino Owner's Well Number Oak Glen Piggah Peak Truck Tr.
Well address if different from above
Township Range Section
Distance from cities, roads, railroads, fences, etc.

X Oak Glen Rd.

WELL LOCATION SKETCH

(3) TYPE OF WORK:
New Well [X] Deepening [ ]
Reconstruction [ ]
Reconditioning [ ]
Horizontal Well [ ]
Destruction [ ] (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:
Domestic [ ]
Irrigation [ ]
Industrial [ ]
Test Well [ ]
Stock [ ]
Municipal [ ]
Other [ ]

(5) EQUIPMENT:
Rotary [ ] Reverse [ ]
Cable [ ] Air [X]
Other [ ] Bucket [ ]

(6) GRAVEL PACK:
Yes [ ] No [ ] Size
Diameter of bore
Packed from ft. to ft.

(7) CASING INSTALLED:
Steel [ ] Plastic [X] Concrete [ ]

From ft.	To ft.	Dia. in.	Gage or Wall
0	200	6	.125

(8) PERFORATIONS:
Type of perforation or size of screen

From ft.	To ft.	Slot size
0	200	.188

(9) WELL SEAL:
Was surface sanitary seal provided? Yes [X] No [ ] If yes, to depth ft.
Were strata sealed against pollution? Yes [ ] No [X] Interval ft.
Method of sealing Concrete & Steel

(10) WATER LEVELS:
Depth of first water, if known 115 ft.
Standing level after well completion 140 ft.

(11) WELL TESTS:
Was well test made? Yes [X] No [ ] If yes, by whom?
Type of test Pump [ ] Bailer [ ] Air lift [X]
Depth to water at start of test ft. At end of test ft
Discharge 120 gal/min after hours Water temperature
Chemical analysis made? Yes [ ] No [X] If yes, by whom?
Was electric log made? Yes [ ] No [ ] If yes, attach copy to this report

(12) WELL LOG: Total depth 200 ft. Depth of completed well 200 ft.

from ft.	to ft.	Formation (Describe by color, character, size or material)
0	50	Sealed Off
50	95	Fractured Granite & DG
95		Hard Granite
98		Broken Up
99		Hard
105		Broken Granite
115	118	Soft Broken (First Water)
120		15 GPM Hard White Rock
122	123	Broken Up
123		Hard Gray Rock
125		Hard Black Rock
127		Broken Up (More Water)
128		Hard
135		Softer Black (Broken up)
138		DG (Brown) Firm
140		50 GPM
155		Grey DG & Quartz (Firm to Soft)
160		60 GPM
165		Light Gray Rock Almost Quartz (Firm to 50 Ft.)
180		60 GPM
182		Fairly Hard
200	STOP	

Work started ~~xxxx~~ 10-3-79 Completed 10-8 19 79

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
Jack Jones Wells & Pumps
SIGNED (Well Driller)
NAME Wayne DeBruyne (Person, firm, or corporation) (Typed or printed)
Address P.O. Box 2 2031
City Hemet Zip Ca. 92343
License No. 281601 Date of this report 10-20-80

DWR 188 (REV. 7-76) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

SOLD FOR PUBLIC USE
NOT FOR RESALE
WATER CODE 13752

Well 5 Vert

No Good

PLICATE
Owner's Copy

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
WATER WELL DRILLERS REPORT

Do not fill in
No. 074477

Notice of Intent No. Well #7
Permit No. or Date 08147901

State Well No.
Other Well No.

(1) OWNER: Name [redacted]
Address [redacted]
City Los Angeles, Ca. Zip 90057

(2) LOCATION OF WELL (See instructions):
County San Bernardino Owner's Well Number
Well address if different from above
Township 2S Range 1W Section 2
Distance from cities, roads, railroads, fences, etc.

(3) TYPE OF WORK:
New Well [X] Deepening [ ]
Reconstruction [ ]
Reconditioning [ ]
Horizontal Well [ ]
Destruction [X] (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:
Domestic [ ]
Irrigation [ ]
Industrial [ ]
Test Well [X]
Stock [ ]
Municipal [ ]
Other [ ]

WELL LOCATION SKETCH

(5) EQUIPMENT:
Rotary [ ] Reverse [ ]
Cable [ ] Air [X]
Other [ ] Bucket [ ]

(6) GRAVEL PACK:
Yes [ ] No [ ] Size
Diameter of bore 6.218
Packed from ft. to ft.

(7) CASING INSTALLED:
Steel [ ] Plastic [ ] Concrete [ ]

From ft.	To ft.	Dia. in	Gage or Wall

(8) PERFORATIONS:
Type of perforation or size of screen

From ft.	To ft.	Slot size

(9) WELL SEAL:
Was surface sanitary seal provided? Yes [ ] No [X] If yes, to depth ft.
Were strata sealed against pollution? Yes [ ] No [X] Interval ft.
Method of sealing

(10) WATER LEVELS:
Depth of first water, if known ft.
Standing level after well completion ft.

(11) WELL TESTS:
Was well test made? Yes [ ] No [X] If yes, by whom?
Type of test Pump [ ] Bailer [ ] Air lift [ ]
Depth to water at start of test ft. At end of test ft.
Discharge 125 gal/min after hours Water temperature
Chemical analysis made? Yes [ ] No [X] If yes, by whom?
Was electric log made? Yes [ ] No [X] If yes, attach copy to this report

(12) WELL LOG: Total depth 180 ft. Depth of completed well 180 ft.

ft.	to ft.	Formation (Describe by color, character, size or material)
0	65	Broken rock & clay
65	115	Broken rock & some clay
115	160	Fractured rock (60-120 GPM)
160	180	Hard rock
130		STOP----------

-Method of Destruction-

Hole filled in with earth & Natural cuttings, as per County requirements.

Work started 8-15 19 79 Completed 8-16 19 79

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief

SIGNED (Well Driller)
NAME Jack Jones Wells & Pumps
P.O. Box 2031 (Operation) (Typed or printed)
Address Hemet, Ca.
City Zip 92343
License No. 281601 Date of this report 9-19-79

(REV. 7-76) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

TRIPLICATE
Owner's Copy

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES

WATER WELL DRILLERS REPORT

Do not fill in
No. 074475

Notice of Intent No. Well #5
cal Permit No. or Date 08107901

State Well No.
Other Well No.

(1) OWNER: Name [redacted]
[redacted]
City Los Angeles, Ca. Zip 90057

(2) LOCATION OF WELL (See instructions):
County San Bernardino Owner's Well Number
Well address if different from above
Township 2S Range 1W Section 2
Distance from cities, roads, railroads, fences, etc.

X) OAK Glen Rd.

WELL LOCATION SKETCH

(3) TYPE OF WORK:
New Well ☒ Deepening ☐
Reconstruction ☐
Reconditioning ☐
Horizontal Well ☐
Destruction ☒ (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:
Domestic ☐
Irrigation ☐
Industrial ☐
Test Well ☒
Stock ☐
Municipal ☐
Other ☐

EQUIPMENT:
Rotary ☐ Reverse ☐
Cable ☐ Air ☒
Other ☐ Bucket ☐

(6) GRAVEL PACK:
Yes ☐ No ☐ Size
Diameter of bore 6 218
Packed from to ft.

(7) CASING INSTALLED:
Steel ☐ Plastic ☐ Concrete ☐

From ft.	To ft.	Dia. in.	Gage or Wall

(8) PERFORATIONS:
Type of perforation or size of screen

From ft.	To ft.	Slot size

(9) WELL SEAL:
Was surface sanitary seal provided? Yes ☐ No ☒ If yes, to depth ft.
Were strata sealed against pollution? Yes ☐ No ☒ Interval ft.
Method of sealing

(10) WATER LEVELS:
Depth of first water, if known ft.
Standing level after well completion ft.

(11) WELL TESTS:
Was well test made? Yes ☐ No ☒ If yes, by whom?
Type of test Pump ☐ Bailer ☐ Air lift ☐
Depth to water at start of test ft. At end of test ft.
Discharge 1 gal/min after hours Water temperature
Chemical analysis made? Yes ☐ No ☒ If yes, by whom?
Was electric log made? Yes ☐ No ☒ If yes, attach copy to this report

(12) WELL LOG: Total depth 240 ft. Depth of completed well 240 ft.

from ft.	to ft.	Formation (Describe by color, character, size or material)
0	18	Clay & Broken rock
18	29	Red clay
29	70	Clay, DG, & broken rock
70	115	Soft brittle rock
115	140	Darker-Broken rock
140	145	Fractured black rock
145	154	Black Rock
154	185	Large fractured area
185	200	Soft black rock
200	210	Fractured rock
210	218	Black rock
218	220	White Quartz
220	230	Soft Rock
230	231	White Quartz
231	240	Granite & fractured rock
240		STOP

Method of Destruction-
Hole filled in with earth & natural cuttings, as per County requirements.

Work started 8-10 19 79 Completed 8-10 19 79

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
SIGNED Joseph W. Crammer (Well Driller)
NAME Jack Jones Wells & Pumps (Person, firm, or corporation) (Typed or printed)
Address P.O. Box 2031
City Hemet, Ca. Zip 92343
License No. 281601 Date of this report 9-19-79

VOID

CONTROLLED BY PUBLIC WORKS
NOT FOR PUBLIC USE
WATER CODE SEC. 13750

R 188 (REV. 7-76) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

WELL #3

NOW YVWD WELL 66

WATER WELL DRILLERS REPORT

(Sections 7879, 7880, 7881, 7882, Water Code)

THE RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES

Do Not Fill In

No 48782

State Well No.

Other Well No.

(1) OWNER:

Name [redacted]

Address [redacted]

ANAHEIM, CA. 92807

(2) LOCATION OF WELL:

County SAN BERNARDINO Owner's number, if any 3

Township, Range, and Section T1S, R1W, SEC. 2

Distance from cities, roads, railroads, etc. ANAHEIM, 1/2 MI. IN A NORTHERLY DIRECTION FROM INTERSECTION OF

(3) TYPE OF WORK (check): MONONGO CYN & CAMINO ROS.

New Well ☑ Deepening ☐ Reconditioning ☐ Destroying ☐

If destruction, describe material and procedure in Item 11.

(4) PROPOSED USE (check):

Domestic ☑ Industrial ☐ Municipal ☐

Irrigation ☐ Test Well ☐ Other ☐

(5) EQUIPMENT:

Rotary ☑

Cable ☐

Other ☐

(6) CASING INSTALLED:

STEEL ☑ OTHER:

SINGLE ☑ DOUBLE ☐

~~If gravel packed~~

From ft.	To ft.	Diam.	Gage or Wall	Diameter of Bore	From ft.	To ft.
0	180	2" I.D.	STD.	2 7/8"	0	180
		GALV.	PIPE	2"	180	506
				1 1/2"	506	550

Size of shoe or well ring:

Size of gravel

Describe joint COUPLED

(7) PERFORATIONS OR SCREEN:

Type of perforation or name of screen 1/8" ED. STD. GALV. PIPE

From ft.	To ft.	Perf. per row	Rows per ft.	Size in. x in.
300	394 1/2	7	13	3/16" DRILLED HOLES
		(PERFORATIONS FROM 311' TO 378')		

(8) CONSTRUCTION:

Was a surface sanitary seal provided? Yes ☑ No ☐ To what depth 150 ft

Were any strata sealed against pollution? Yes ☑ No ☐ If yes, note depth of strata

ALL STRATA - ft. 0 TO 180 FT

From ft. to ft.

Method of sealing

(9) WATER LEVELS: SEE NOTE ——— *

Depth at which water was first found, if known ft

Standing level before perforating, if known ft

Standing level after perforating or developing ft

(10) WELL TESTS: SEE NOTE ——— *

Was a pump test made? Yes ☑ No ☐ If yes, by whom? PIERSON DRILLING

Yield: 44 gal./min. with ft. drawdown after hrs.

Temperature of water 60° Was a chemical analysis made? Yes ☐ No ☑

Was electric log made of well? Yes ☐ No ☑ If yes, attach copy

(11) WELL LOG:

Total depth 550 ft. Depth of completed well 550 ft.

Formations: Describe by color, character, size of material, and structure

FT. TO FT.	ft. to ft.
0 - 30 - OVERBURDEN	
30 - 156 FT. - MED. RK.	
156 - 157 FT. - CLAY	
157 - 190 FT. - MED. RK.	
190 - 196 FT. - ALT. MED. & HARD RK.	
196 - 256 FT. - MED. RK.	
256 - 309 1/2 FT. - ALT. MED. & HARD RK.	
309 1/2 FT. - 310 FT. - CLAY	
310 - 325 FT. - ALT. MED. & HARD RK.	
325 - 326 FT. - CLAY	
326 - 497 FT. ALT. MED. & HARD RK.	
497 - 550 FT. - HARD RK.	

** WATER PICKUPS (INITIAL FLOWS)

FROM - TO FLOW

0 - 180 FT. - 1 GPM (SEALED OFF)

180 - 196 FT. - 2 GPM

196 - 310 FT. - 1 GPM

310 - 315 FT. - 2 GPM

315 - 430 FT. - 4 GPM

430 - 480 FT. - 10 GPM

480 - 512 FT. - 2 GPM

512 - 550 FT. - 17 GPM

TOTAL INITIAL FLOW - 44 GPM

NOTE: WHEN CAPPED, WELL WILL STORE WATER UNDERGROUND UNTIL THE PRESSURE AT COLLAR LEVEL REACHES 140 (+) PSI.

* DURING DRILLING OPERATIONS AND AFTER COMPLETION, WELL WAS ALLOWED TO FLOW UN-RESTRICTED FOR PERIODS OF UP TO 48 HRS. & FLOW NEVER DROPPED BELOW 28 GPM. WHEN CAPPED, WELL STORED BACK TO MAXIMUM PRESSURE OVER NIGHT.

Work started 2/26 1972 Completed 3/29 1972

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME PIERSON DRILLING

(Person, firm, or corporation) (Typed or printed)

Address 23003 OAK LN. (P.O. BOX 1028)

CRESTLINE, CALIF. 92325

[SIGNED] Gene P. Pierson

(Well Driller)

License No. 207691 Dated 9/30, 1972

SKETCH LOCATION OF WELL ON REVERSE SIDE

DWR 188 (REV. 9-68)

ORIGINAL File with DWR

WELL # 3

WATER WELL DRILLERS REPORT

(Sections 7079, 7080, 7081, 7082, Water Code)

THE RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES

Do Not Fill In

No 48782

State Well No.

Other Well No.

(1) OWNER:

Name [redacted]

Address [redacted]

[redacted] ANAHEIM, CA. 92803

(2) LOCATION OF WELL:

County SAN BERNARDINO Owner's number, if any 3

Township, Range, and Section T1S, R1W, SEC. 2

Distance from cities, roads, railroads, etc. APPROX. 1/2 MI. IN A NORTHERLY DIRECTION FROM INTERSECTION OF [illegible] AVE. & [illegible]

(3) TYPE OF WORK (check): BUILDWOOD CYN & OAK GLEN RDS.

New Well ☑ Deepening ☐ Reconditioning ☐ Destroying ☐

If destruction, describe material and procedure in Item 11.

(4) PROPOSED USE (check):

Domestic ☑ Industrial ☐ Municipal ☐

Irrigation ☐ Test Well ☐ Other ☐

(5) EQUIPMENT:

Rotary ☑

Cable ☐

Other ☐

(6) CASING INSTALLED:

STEEL ✓ OTHER:

SINGLE ☑ DOUBLE ☐

~~If gravel packed~~

From ft.	To ft.	Diam.	Gage or Wall	Diameter of Bore	From ft.	To ft.
0	180	2" I.D.	STD.	2 7/8"	0	180
		PLAST.	PIPE	2"	180	506
				1 1/2"	506	550

Size of shoe or well ring: Size of gravel

Describe joint COUPLED

(7) PERFORATIONS OR SCREEN:

Type of perforation or name of screen 1/4" PERF. STD. PLAST. PIPE

From ft.	To ft.	Perf. per row	Rows per ft	Size in. x in.
300	394 1/2	2	13	1/4" DRILLED HOLES
		(PERFORATIONS FROM 311' TO 338')		

(8) CONSTRUCTION:

Was a surface sanitary seal provided? Yes ☑ No ☐ To what depth 180 ft

Were any strata sealed against pollution? Yes ☑ No ☐ If yes, note depth of strata

ALL STRATA - ft 0 TO 180 FT

From ft to ft

Method of sealing

(9) WATER LEVELS: SEE NOTE

Depth at which water was first found, if known ft

Standing level before perforating, if known ft

Standing level after perforating and developing ft

(10) WELL TESTS: SEE NOTE

Was a pump test made? Yes ☑ No ☐ If yes, by whom? PIERSON DRILLING

Yield: 44 gal./min. with ft. drawdown after hrs.

Temperature of water 60° Was a chemical analysis made? Yes ☐ No ☑

Was electric log made of well? Yes ☐ No ☑ If yes, attach copy

(11) WELL LOG:

Total depth 550 ft. Depth of completed well 550 ft.

Formation Describe by color, character, size of material, and structure

ft. to ft.	
0 - 30	OVERBURDEN
30 - 156 FT.	MED. RK.
156 - 157 FT.	CLAY
157 - 190 FT.	MED. RK.
190 - 196 FT.	ALT. MED. & HARD RK.
196 - 256 FT.	MED. RK.
256 - 307½ FT.	ALT. MED. & HARD RK.
307½ FT. - 310 FT.	CLAY
310 - 325 FT.	ALT. MED. & HARD RK.
325 - 376 FT.	CLAY
376 - 497 FT.	ALT. MED. & HARD RK.
497 - 550 FT.	HARD RK.

** WATER PICKUPS (INITIAL FLOWS)

SMALL TO LARGE

0 - 180 FT. - 1 GPM (SEALED OFF)

180 - 196 FT. - 2 GPM

196 - 310 FT. - 1 GPM

310 - 315 FT. - 2 GPM

315 - 430 FT. - 4 GPM

430 - 480 FT. - 10 GPM

480 - 512 FT. - 2 GPM

512 - 550 FT. - 17 GPM

TOTAL INITIAL FLOW - 44 GPM

NOTE: WHEN CAPPED, WELL WILL STORE WATER UNDERGROUND UNTIL THE PRESSURE AGAINST LEVER REACHES 45-50 PSI.

+ DURING DRILLING OPERATIONS AND AFTER COMPLETION, WELL WAS ALLOWED TO FLOW UN-RESTRICTED FOR PERIODS OF UP TO 48 HRS. & FLOW NEVER DROPPED BELOW 28 GPM. WHEN CAPPED, WELL STORED BACK TO MAXIMUM PRESSURE OVER NIGHT.

Work started 2/26 19 73 Completed 3/29 19 73

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME PIERSON DRILLING
(Person, firm, or corporation) (Typed or printed)

Address 23023 OAK AVE. (P.O. BOX 1028)
CRESTLINE, CALIF. 92325

[SIGNED] Glenn P. Pierson
(Well Driller)

License No. 207691 Dated 5/30 19 73

SKETCH LOCATION OF WELL ON REVERSE SIDE

DWR 188 (REV 9-69)

ARROWHEAD

TRIPLICATE
Owner's Copy

NOW YVWD
WELL #68

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
WATER WELL DRILLERS REPORT

JUL 6 - 1982

DEPARTMENT OF HEALTH SERVICES * SAN BERNARDINO *

Do not fill in

No. 069416

Notice of Intent No. 193717
Permit No. or Date 05068201

State Well No.
Other Well No.

OWNER: Name [redacted]
Address [redacted]
City Los Angeles Zip 90057

(2) LOCATION OF WELL (See instructions):
County San Berdo. Owner's Well Number 10
Well address if different from above In S.W. ¼ of N.W. ¼
Township 2S Range 1W Section 2
Distance from cities, roads, railroads, fences, etc. Approx. ½ mi. N. of intersection of Oak Glen rd. & Wildwood Cyn. rd.



WELL LOCATION SKETCH

(3) TYPE OF WORK:
New Well [X] Deepening [ ]
Reconstruction [ ]
Reconditioning [ ]
Horizontal Well [X]
Destruction [ ] (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:
Domestic [X]
Irrigation [ ]
Industrial [ ]
Test Well [ ]
Stock [X]
Municipal [ ]
Other [ ]

(5) EQUIPMENT:
Rotary [X] Reverse [ ]
Cable [ ] Air [ ]
Other [ ] Bucket [ ]

(6) GRAVEL PACK:
Yes [ ] No [ ] 2½" - 0 to 284
Diameter of bore 2" - 284 to 400
Packed from ____ ft. to ____ ft.

(7) CASING INSTALLED:
Steel [X] Plastic [ ] Concrete [ ]

From ft.	To ft.	Dia. in.	Gage or Wall	From ft.	To ft.	Slot size
0	284	2	sch. 40	283	400	3/16" drilled holes

(8) PERFORATIONS: 7½" stdl. galv. pipe
Type of perforation or size of screen

(9) WELL SEAL:
Was surface sanitary seal provided? Yes [X] No [ ] If yes, to depth 284 ft.
Were strata sealed against pollution? Yes [ ] No [X] Interval ____ ft.
Method of sealing Grout under pressure

(10) WATER LEVELS: See note - - - - - - #
Depth of first water, if known ____ ft.
Standing level after well completion ____ ft.

(11) WELL TESTS: See note - - - - - - - ##
Was well test made? Yes [X] No [ ] If yes, by whom? Pierson Drilling
Type of test Flow Pump [ ] Bailer [ ] Air lift [ ]
Depth to water at start of test 67 ft. At end of test 60 ft.
Discharge 1 gal/min after ____ hours Water temperature ____
Chemical analysis made? Yes [ ] No [X] If yes, by whom? ____
Was electric log made? Yes [ ] No [ ] If yes, attach copy to this report

(12) WELL LOG: Total depth 400 ft. Depth of completed well 400 ft.

from ft.	to ft.	Formation (Describe by color, character, size or material)
0	10	rky overburden
10	30	decomposed granite
30	201	med. hard rk
201	203	clay
203	282	alt. med. & hard rk
282	283	clay
283	344	alt. med. & hard rk
344	354	unstable fault material
354	380	fract. med. rk
380	400	med. hard rk

\# Water Pick-ups (Initial Flows)

From	To	Flow
0	283	1½ gpm (sealed off)
283	344	4 gpm
344	350	55 gpm
350	380	8 gpm
380	400	0

Total initial flow - 67 gpm

Note: When capped, well will store water underground until the pressure at collar level reaches 28+ psi.

\## After completion, well was allowed to flow unrestricted for 72 hrs. During this time, flow dropped to 64 gpm. where it appeared to be holding steady.

Work started 5/10 19 82 Completed 5/21 19 82

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
Signed ____ (Well Driller)
NAME Pierson Drilling (Person, firm, or corporation) (Typed or printed)
Address P.O. Box 1028
City Crestline Zip 92325
License No. 304075 Date of this report 6/5/82

188 (REV. 7-76) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

YVWD #68

TRIPLICATE
Owner's Copy

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
WATER WELL DRILLERS REPORT

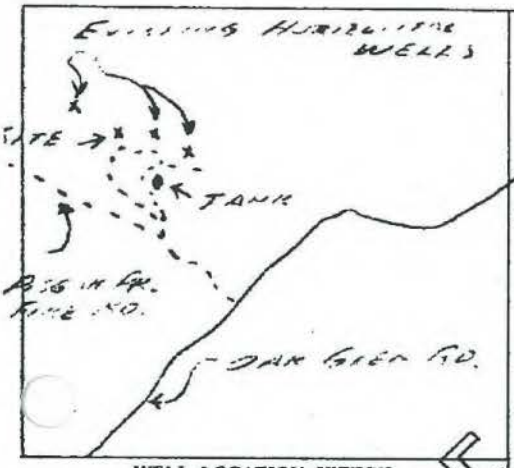
Do not fill in
No. 069416

Intent No. 193717
Local Permit No. or Date 05068201

State Well No.
Other Well No.

(1) OWNER: Name [redacted]
Address [redacted]
City Los Angeles Zip 90057

(2) LOCATION OF WELL (See instructions):
County San Bardo. Owner's Well Number 10
Well address if different from above In S.W. ¼ of N.W. ¼
Township 2S Range 1W Section 2
Distance from cities, roads, railroads, fences, etc. Approx. 1½ mi. N. of intersection of Oak Glen rd. & Wildwood Cyn. rd.



WELL LOCATION SKETCH

(3) TYPE OF WORK:
New Well X Deepening ☐
Reconstruction ☐
Reconditioning ☐
Horizontal Well X
Destruction ☐ (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:
Domestic X
Irrigation ☐
Industrial ☐
Test Well ☐
Stock ☐
Municipal ☐
Other ☐

(5) EQUIPMENT:
Rotary X Reverse ☐
Cable ☐ Air ☐
Other ☐ Bucket ☐

(6) CONSTRUCTION:
Yes ☐ No ☐ 24" dia. 0 to 284
Diameter of bore 24" - 284 to 400
Packed from ft. to ft.

(7) CASING INSTALLED:
Steel X Plastic ☐ Concrete ☐

From ft.	To ft.	Dia. in.	Gage or Wall	
0	284	24"	3/8"	

(8) PERFORATIONS:
Type of perforation or size of screen: 24" gal. galv. pipe

From ft.	To ft.	Slot size	
283	400	3/16"	drilled holes

(9) WELL SEAL:
Was surface sanitary seal provided? Yes X No ☐ If yes, to depth 284 ft.
Were strata sealed against pollution? Yes ☐ No X Interval ft.
Method of sealing Grout under pressure

(10) WATER LEVELS: See note - - - - - -
Depth of first water, if known ft.
Standing level after well completion Ft.

(11) WELL TESTS: See note - - - - - - -
Was well test made? Yes X No ☐ If yes, by whom: Pierson Drilling
Type of test Flow Pump ☐ Bailer ☐ Air lift ☐
Depth to water at start of test ft. At end of test ft
Discharge 67 gal. min after 1 hours Water temperature 60°
Chemical analysis made? Yes ☐ No X If yes, by whom?
Electric log made? Yes ☐ No X If yes, attach copy to this report

(12) WELL LOG: Total depth 400 ft. Depth of completed well 400 ft.

from ft.	to ft.	Formation (Describe by color, character, size or material)
0	10	- rky overburden
10	30	- decomposed granite
30	201	- med. hard rk
201	203	- clay
203	282	- alt. med. & hard rk
282	283	- clay
283	344	- alt. med. & hard rk
344	354	- unstable fault material
354	380	- fract. med. rk
380	400	- med. hard rk

* Water Pick-ups (Initial Flows)

From	To	Flow
0	283	- ½ gpm (sealed off)
283	344	- 4 gpm
344	350	- 55 gpm
350	380	- 8 gpm
380	400	- 0

Total initial flow - 67 gpm

Note: When capped, well will store water underground until the pressure at collar level reaches 284 psi.

** After completion, well was allowed to flow unrestricted for 72 hrs. During this time, flow dropped to 64 gpm. where it appeared to be holding steady.

Work started 5/10 19 82 Completed 5/21 19 82

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief
SIGNED [signature] (Well Driller)
NAME Pierson Drilling (Person, firm, or corporation) (Typed or printed)
Address P.O. Box 1028
City Crestline Zip 92325
License No. 304075 Date of this report 6/5/82

DWR 188 REV 7-76) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

DO NOT FILL IN
FOR PUBLIC USE
WATER COMMISSION 1952

TRIPLICATE
Owner's Copy

4 Horiz

YVWD # 69

THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
WATER WELL DRILLERS REPORT

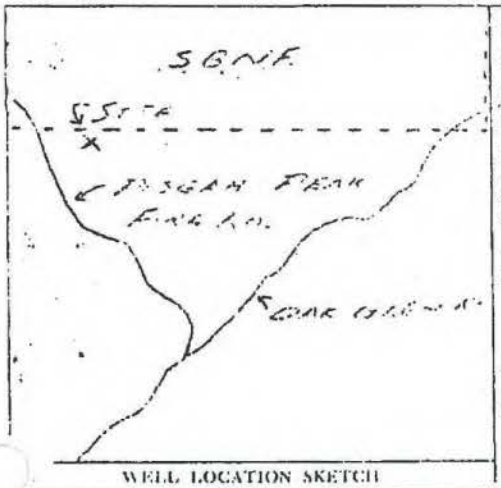
No. 04281

Source of Intent No. 10583
Local Permit No. or Date 09217802

State Well No.
Other Well No.

(1) OWNER: Name [redacted]
Address [redacted]
City Los Angeles Zip 90057

(2) LOCATION OF WELL (See instructions):
County San Berdo. Owner's Well Number #2
Well address if different from above Old Oak Glen Ranch
Township 2S. Range 1W. Section 2
Distance from cities, roads, railroads, fences, etc. Approx. 1⅓ mi. N. of intersection of Wildwood Cyn. Rd. & Oak Glen Rd.



WELL LOCATION SKETCH

(3) TYPE OF WORK:
New Well [X] Deepening [ ]
Reconstruction [ ]
Recondition [ ]
Horizontal Well [X]
Destruction [ ] (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:
Domestic [X]
Irrigation [ ]
Industrial [ ]
Test Well [ ]
Stock [ ]
Municipal [ ]
Other [ ]

(5) EQUIPMENT:
Rotary [X] Reverse [ ]
Cable [ ] Air [ ]
Other [X] Horizontal [ ]

(6) CASING RACE:
Yes [ ] No [ ] Size
Diameter of bore 2½" 0 to 333½'
2" 333½ to 455'
1½" 455 to 520'
Packed from

(7) CASING INSTALLED:
Steel [X] Plastic [ ] Concrete [ ]

(8) PERFORATIONS:
Type & size std. galv. pipe

From ft.	To ft.	Dia. in.	Cage or Wall	From ft.	To ft.	Slot size
0	333½ std.	2" galv.	I.D.	328-8	455 drilled	3/16" holes

(9) WELL SEAL:
Was surface sanitary seal provided? Yes [X] No [ ] If yes, to depth 333-6 ft.
Were strata sealed against pollution? Yes [ ] No [ ] Interval ft.
Method of sealing Grout under pressure

(10) WELL LEVELS: See note - - - - - - - *
Depth of first water, if known ft.
Standing level after well completion ft.

(11) WELL TESTS: See note - - - - - - - **
Was well test made? Yes [X] No [ ] If yes, by whom? Pierson Drilling
Type of test Flow Pump [ ] Bailer [ ] Air lift [ ]
Depth to water at start of test ft. At end of test ft.
Discharge 30 gal/min after hours Water temperature 59°
Chemical analysis made? Yes [ ] No [X] If yes, by whom?
Electric log made? Yes [ ] No [X] If yes, attach copy to this report

(12) WELL LOG: Total depth 520 ft. Depth of completed well 520 ft.

from ft.	to ft.	Formation (Describe by color, character, size or material)
0	5	loose fractured rk.
5	47	Med. hard rk.
47	49	tough clay
49	160	Med. hard rk.
160	196	alt. med. and hard rk.
196	200	very hard rk.
200	332	alt. med. & hard rk.
332	333	tough clay
333	452	Med. hard rk.
452	466	very hard rk.
466	520	alt. med.hard & hard rk.

* Water pick-ups (Initial Flows)

From	To	Flow
0	333	3 G.P.M. (sealed off)
333	390	35 G.P.M.
390	430	15 G.P.M.
430	470	10 G.P.M.

Total initial flow - 60 G.P.M.

Note - When capped, well will store water underground until the pressure at collar level reaches 30+ p.s.i.

** After completion, well was allowed to run unrestricted for periods of up to 72 hrs. several times. During these periods, the flow dropped off from its initial flow of 60 G.P.M. to approx. 30 G.P.M. within 12 hrs. and then held steady for the remainder of the test.

Work started 3/26 19 79 Completed 8/27 19 79

WELL DRILLERS STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

SIGNED (Well Driller)

NAME Pierson Drilling (Person, firm, or corporation) (Typed or printed)
Address P.O.Box 1028
City Crestline Zip 92325
License No. 304075 Date of this report 5/8/79

WR 188 (REV. 7-76) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

Well 4 1-1 NOW YVWD WELL #69

TRIPLICATE
Owner's Copy

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES

Do not fill in
No. 04281

WATER WELL DRILLERS REPORT

Notice of Intent No. 10583
Permit No. or Date 0921780?

State Well No.
Other Well No.

(1) OWNER: Name [redacted]
[redacted]
City Los Angeles Zip 90057

(2) LOCATION OF WELL (See instructions):
County San Berdo. Owner's Well Number #2
Well address if different from above Old Oak Glen Ranch
Township 2S. Range 1W. Section 2
Distance from cities, roads, railroads, fences, etc. Approx. 1½ mi. N. of intersection of Wildwood Cyn. Rd. & Oak Glen Rd.



WELL LOCATION SKETCH

(3) TYPE OF WORK:
New Well [X] Deepening [ ]
Reconstruction [ ]
Recondituoning [ ]
Horizontal Well [X]
Destruction [ ] (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:
Domestic [X]
Irrigation [ ]
Industrial [ ]
Test Well [ ]
Stock [ ]
Municipal [ ]
Other [ ]

(5) EQUIPMENT:
Rotary [X] Reverse [ ]
Cable [ ] Air [ ]
Other [X] Horizontal [ ]

(6) GRAVEL PACK:
Yes [ ] No [ ] Size
Diameter of hole 2½" 0 to 333½'
Packed from 2" 333½ to 455'
1½" 455 to 520'

(7) CASING INSTALLED:
Steel [X] Plastic [ ] Concrete [ ]
Type perforated std. galv. pipe

(8) PERFORATIONS:

From ft.	To ft.	Dia. in.	Gage or Wall	From ft.	To ft.	Slot size
0	333½	2"	I.D.	328-8	455	3/16"
	std.	galv.			drilled	holes

(9) WELL SEAL:
Was surface sanitary seal provided? Yes [X] No [ ] If yes, to depth 333-6 ft.
Were strata sealed against pollution? Yes [ ] No [ ] Interval ft.
Method of sealing Grout under pressure

(10) WATER LEVELS: See note - - - - - - - *
Depth of first water, if known ft.
Standing level after well completion ft.

(11) WELL TESTS: See note - - - - - - - **
Was well test made? Yes [X] No [ ] If yes, by whom? Pierson Drilling
Type of test Flow Pump [ ] Bailer [ ] Air [ ]
Depth to water at start of test ft. At end of test ft.
Discharge 30 gal/min after hours Water temperature 59°
Chemical analysis made? Yes [ ] No [X] If yes, by whom?
Was electric log made? Yes [ ] No [X] If yes, attach copy to this report

(12) WELL LOG: Total depth 520 ft. Depth of completed well 520 ft.
From ft. to ft. Formation (Describe by color, character, size or material)

From	To	Formation
0	5	- loose fractured rk.
5	47	- Med. hard rk.
47	49	- tough clay
49	160	- Med. hard rk.
160	196	- alt. med. and hard rk.
196	200	- very hard rk.
200	332	- alt. med. & hard rk.
332	333	- tough clay
333	452	- Med. hard rk.
452	466	- very hard rk.
466	520	- alt. med.hard & hard rk.

* Water pick-ups (Initial Flows)

From	To	Flow
0	333	- 3 G.P.M. (sealed off)
333	390	- 35 G.P.M.
390	430	- 15 G.P.M.
430	470	- 10 G.P.M.

Total initial flow - 60 G.P.M.

Note - When capped, well will store water underground until the pressure at collar level reaches 30+ p.s.i.

** After completion, well was allowed to run unrestricted for periods of up to 72 hrs. several times. During these periods, the flow dropped off from its initial flow of 60 G.P.M. to approx. 30 G.P.M. within 12 hrs. and then held steady for the remainder of the test.

Work started 3/26 19 79 Completed 4/27 19 79

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief

NAME Pierson Drilling
(Person, firm, or corporation) (Typed or printed)
Address P.O.Box 1028
City Crestline Zip 92325
License No. 304075 Date of this report 5/8/79

DWR 188 (REV. 7-76) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

NOW YVWD WELL # 70

TRIPLICATE
Owner's Copy

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES

WATER WELL DRILLERS REPORT

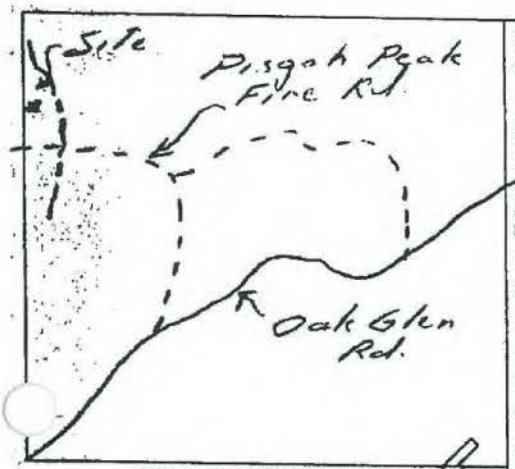
Do not fill in
No. 069452

State Well No.
Other Well No.

4 Intent No. 173755
Local Permit No. or Date 01288601

(1) OWNER: Name [redacted]
Address [redacted]
City Los Angeles Zip 90057

(2) LOCATION OF WELL (See instructions):
County San Bernardino Owner's Well Number 13
Well address if different from above
Township 2S Range 1W Section 2
Distance from cities, roads, railroads, fences, etc. In the westerly portion of the SW¼ of NW¼ of NW¼, Sec. 2



WELL LOCATION SKETCH

(3) TYPE OF WORK:
New Well ☒ Deepening ☐
Reconstruction ☐
Reconditioning ☐
Horizontal Well ☐
Destruction ☐ (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:
Domestic ☐
Irrigation ☒
Industrial ☐
Test Well ☐
Stock ☐
Municipal ☐
Other ☐

(5) EQUIPMENT:
Rotary ☒ Reverse ☐
Cable ☐ Air ☐
Other Mud Rotary Bucket ☐

(6) GRAVEL PACK:
Yes ☐ No ☒ Size
Diameter of bore 7" 273-496
Packed from ft. to ft.

(7) CASING INSTALLED:
Steel ☒ Plastic ☐ Concrete ☐

From ft.	To ft.	Dia. in.	Gage or Wall
0	273	8"	std.
			gal. pipe

(8) PERFORATIONS:
Type of perforation or size of screen 10 gauge

From ft.	To ft.	Slot size
272	476	5/16"
		drilled holes

(9) WELL SEAL:
Was surface sanitary seal provided? Yes ☒ No ☐ If yes, to depth 273 ft.
Were strata sealed against pollution? Yes ☐ No ☒ Interval ft.
Method of sealing Grout under pressure

(10) WATER LEVELS: See note **
Depth of first water, if known ft.
Standing level after well completion ft.

(11) WELL TESTS: See note **
Was well test made? Yes ☒ No ☐ If yes, by whom? Pierson Drlg.
Type of test Flow ☒ Pump ☐ Bailer ☐ Air lift ☐
Depth to water at start of test ft. At end of test ft.
Yield 38 gal/min after 72 hours Water temperature 66°
Chemical analysis made? Yes ☐ No ☒ If yes, by whom?
Was electric log made? Yes ☐ No ☒ If yes, attach copy to this report

(12) WELL LOG: Total depth 496 ft. Depth of completed well 476 ft.

from ft.	to ft.	Formation (Describe by color, character, size or material)
0	3	overburden
3	70	decomposed granite
70	128-6	Med. hk.
128-6	129	clay
129	272-6	alt. Med. & hard hk.
272-6	273	clay
273	330	Med. hk.
330	410	alt. Med. hard & hard hk.
410	456	Med. hk.
456 & 467		fault zone
467	476	alt. Med. & hard hk.

Water Pickups (Initial Flows)

From	To	Flow
0	273	0
273	370	2 gpm
374	456	2 gpm
456	467	38 gpm
467	480	45 gpm
488	496	45 gpm

Total Initial Flow - 45 gpm

Note: When capped, well will store water underground until the pressure at total level reaches 214 P.S.I.

** During drilling operations and after completion, well was allowed to flow unrestricted for periods of up to 72 hrs. Initial flow of 45 gpm drops to 42 gpm in 1 hr. and 38 gpm after 24 hrs. - then no further drop was noted.

Work started 1/27 19 86 Completed 2/10 19 86

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
SIGNED [signature] (Well Driller)
NAME Pierson Drilling (Person, firm, or corporation) (Typed or printed)
Address P.O. Box 1028
City Crestline Zip 92325
License No. 304075 Date of this report 3/4/86

DWR 188 (REV. 7-76) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

SUPERSEDED BY WELL NO. 70

YVWD # 71

TRIPLICATE
Owner's Copy

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
WATER WELL DRILLERS REPORT

Do not fill in
No. 069445

State Well No.
Other Well No.

Notice of Intent No. 193748
Local Permit No. or Date 030885O1

(1) OWNER: Name [redacted]
Address [redacted]
City Los Angeles Zip 90057

(2) LOCATION OF WELL (See instructions):
County San Bernardino Owner's Well Number 12
Well address if different from above
Township 2N Range 1W Section 2
Distance from cities, roads, railroads, fences, etc. In SW¼ of NW¼ of NW¼, Sec. 2, T2S, R1W.



WELL LOCATION SKETCH

(3) TYPE OF WORK:
New Well ☒ Deepening ☐
Reconstruction ☐
Reconditioning ☐
Horizontal Well ☒
Destruction ☐ (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:
Domestic
Irrigation ☐
Industrial ☐
Test Well ☐
Stock ☐
Municipal ☒
Other ☐

(5) EQUIPMENT:
Rotary ☒ Reverse ☐
Cable ☐ Air ☐
Other ☐ Bucket ☐

(6) GRAVEL PACK:
Yes ☐ No ☒ Size
Diameter of hole 3"-295 445
Packed from to ft.

(7) CASING INSTALLED:
Steel ☒ Plastic ☐ Concrete ☐

From ft.	To ft.	Dia. in.	Gage or Wall
0	295	8"	std.
0	399		Galv. pipe

(8) PERFORATIONS:
Type of perforation or size of screen: 3/16" galv. pipe

From ft.	To ft.	Slot size
294	394	none
399	445	3/16"
		drilled holes

(9) WELL SEAL:
Was surface sanitary seal provided? Yes ☒ No ☐ If yes, to depth 295 ft.
Were strata sealed against pollution? Yes ☐ No ☐ Interval ft.
Method of sealing Grout under pressure

(10) WATER LEVELS: See note — *
Depth of first water, if known ft.
Standing level after well completion ft.

(11) WELL TESTS: See note — **
Was well test made? Yes ☐ No ☐ If yes, by whom? Pierson Drilling
Type of test Pump ☐ Bailer ☐ Air lift ☐
Depth to water at start of test ft. At end of test ft.
Discharge 50 gal/min after 72 hours Water temperature 60°
Chemical analysis made? Yes ☐ No ☒ If yes, by whom?
Was electric log made? Yes ☐ No ☒ If yes, attach copy to this report

(12) WELL LOG: Total depth 445 ft. Depth of completed well 445 ft.

from ft.	to ft.	Formation (Describe by color, character, size or material)
0	3	overburden
3	105	decomposed granite
105	291	alt. Med. & Med Hard rk.
291	294	clay (fault)
294	380	alt. Hard & hard rk
380	400	hard rk & unstable (fault)
400	445	Hard rk.

*Water Pick-ups (Initial Flows)

From	To	Flow
0	294	10 gpm (sealed off)
294	350	15 gpm
350	400	15 gpm
400	410	25 gpm
410	445	10 gpm

Total Initial Flow - 60 gpm

Note: When stopped, well will store water under ground until the pressure at water level reaches 24(+) psi.

**After completion, well was allowed to flow unrestricted for 72 hrs. During first 12 hrs. initial flow dropped to 50 gpm. Then no further drop was noted.

Work started 3/10 19 85 Completed 3/31 19 85

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
SIGNED Gene P. Nelson (Well Driller)
NAME Pierson Drilling (Person, firm, or corporation) (Typed or printed)
Address P.O. Box 1028
City Crestline Zip 92325
License No. 304075 Date of this report 6/6/85

DWR 188 (REV. 7-76) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

SOLD FOR PUBLIC USE
NOT FOR RESALE

NOW YVWD WELL # 72

TRIPLICATE
Owner's Copy

2S/1W-3H1

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES

WATER WELL DRILLERS REPORT

Do not fill in
No. 322799

Notice of Intent No. _____
Local Permit No. or Date 02279013

State Well No. _____
Other Well No. _____

(1) OWNER: Name [redacted]
Address [redacted]
City SAN ANGELES, CA. ZIP 90004

(2) LOCATION OF WELL (See instructions):
County SAN BERNARDINO Owner's Well Number 28
Well address if different from above OFF OAK GLEN RD IN
Township 2S Range 1W Section 3
Distance from cities, roads, railroads, fences, etc. APP. 3 MILES OFF OAK GLEN RD. IN OAK GLEN CA.

WELL LOCATION SKETCH

(3) TYPE OF WORK:
New Well [X] Deepening [ ]
Reconstruction [ ]
Reconditioning [ ]
Horizontal Well [ ]
Destruction [ ] (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:
Domestic [ ]
Irrigation [ ]
Industrial [X]
Test Well [ ]
Municipal [ ]
Other [ ]
(Describe)

(5) EQUIPMENT:
Rotary [ ] Reverse [ ]
Cable [ ] Air [X]
Other [ ] Bucket [ ]

(6) GRAVEL PACK:
Yes [X] No [ ] Size 3/8"
Diameter of bore 8"
Packed from 50 ft. 500 ft.

(7) CASING INSTALLED:
Steel [X] Plastic [X] Concrete [ ]

From ft.	To ft.	Dia. in.	Gage or Wall
0	10	8-5/8"	.250
0	500	5"	200

(8) PERFORATIONS:
Type of perforation or size of screen

From ft.	To ft.	Slot size
300	500	.032

(9) WELL SEAL:
Was surface sanitary seal provided? Yes [X] No [ ] If yes, to depth 50 ft.
Were strata sealed against pollution? Yes [ ] No [X] Interval _____ ft.
Method of sealing STEEL & CONCRETE

(10) WATER LEVELS:
Depth of first water, if known 320 ft.
Standing level after well completion 300 ft.

(11) WELL TESTS:
Was well test made? Yes [X] No [ ] If yes, by whom? DRILLER
Type of test Pump [ ] Bailer [ ] Air lift [X]
Depth to water at start of test _____ ft. At end of test _____ ft.
Discharge 60 gal/min after _____ hours Water temperature _____
Chemical analysis made? Yes [ ] No [X] If yes, by whom? _____
Was electric log made Yes [ ] No [X] If yes, attach copy to this report

(12) WELL LOG: Total depth 500 ft. Completed depth 500 ft.
from ft. 0 to 500 ft. Formation (Describe by color, character, size or material)

0-160' - FIRM BROWN DG
160-200' BROKENUP BLUE GRANITE
200-280' BROKENUP BLACK GRANITE
280-360' BROKENUP BLUE GRANITE/WATER
360-440' BROKENUP BLUE & BLACK GRANITE
440-460' BROKENUP BLUE/GREEN GRANITE/WATER
460-500' BROKENUP BLACK & BLUE GRANITE
500' - STOP

CONFIDENTIAL
NOT FOR PUBLIC USE
WATER CODE SEC. 13752

Work started 2-8 19 90 Completed 313-90 19

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

Signed _____ (Well Driller)
NAME SAM CRUM WATER WELL DRILLING, INC.
(Person, firm, or corporation) (Typed or printed)
Address 1803 MARYVALE LN.
City HEMET, CA. ZIP 92344
License No. 534298 Date of this report 3-16-90

DWR 188 (REV. 12-86) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM 86 96355

#28

County of San Bernardino — Environmental Public Works Agency
ENVIRONMENTAL HEALTH SERVICES DEPARTMENT
385 North Arrowhead Avenue, San Bernardino, CA 92415-0160

Do Not Fill In
Permit No. 022 79013
Expiration 2-27-91
FF
FA
SN

WELL PERMIT

Wen #72

2S/1W-3H1

PLEASE PRINT:

1. OWNER: Name [redacted]
Mailing Address [redacted]
City Los Angeles Zip 90004
Phone No. (213) 463-1181

2. DATE OF WORK *(approximate)*:
Start 3/1/90 Complete 3/6/90

3. WELL DRILLER *(Check One)*:
☐ Owner ☒ Contractor SAM CRUM WATER WELL DRILLING
Name

4. WELL USE *(check)*:
☐ Community ☐ Horizontal ☐ Other
☐ Individual ☒ Test
☐ Agricultural ☐ Monitoring
☐ Dairy ☐ Public Water Supply

5. TYPE OF WORK *(check)*:
☒ New ☐ Reconstruction ☐ Destruction

Items 6 through 10 to be estimated for new wells, and exact for all other wells.

6. ANNULAR SEAL: Seal Depth _____ ft.
Furnished by: ☐ Owner ☐ Contractor
☐ Driven Conductor Dia. _____ in., Wall (Gage) _____
☐ Sealing Material _____, Thickness _____ in.

7. DEPTH OF WELL *(feet)*:
Proposed 500 Existing _____
DIAMETER OF BORE *(in.)*: 8

8. CASING INSTALLED:
☐ Steel ☐ Plastic ☐ Other

From (ft.)	To (ft.)	Dia. (in.)	Wall (Gage)

GRAVEL PACK: ☐ Yes ☐ No
From _____ to _____ ft.

9. PERFORATIONS *(if applicable)*:
From _____ to _____ ft.

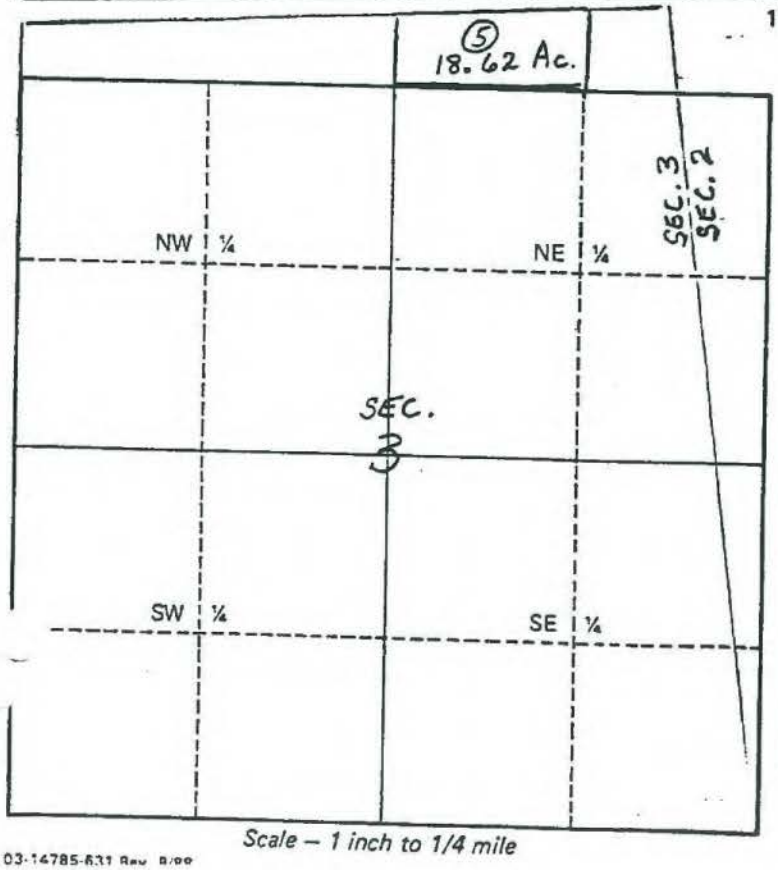
10. SEALED ZONES *(if applicable)*:
From _____ to _____ ft.

11. LOCATION INFORMATION: 20C-6D

(a) Township 2S N/S Range 1W E/W
Section 3

(b) Assessor's Parcel No. 325 011 05

(c) Solid or liquid waste disposal site within two miles?
☐ Yes ☒ No
Location: Gov. Lot #2 - Off Pisgah Peak Fire R



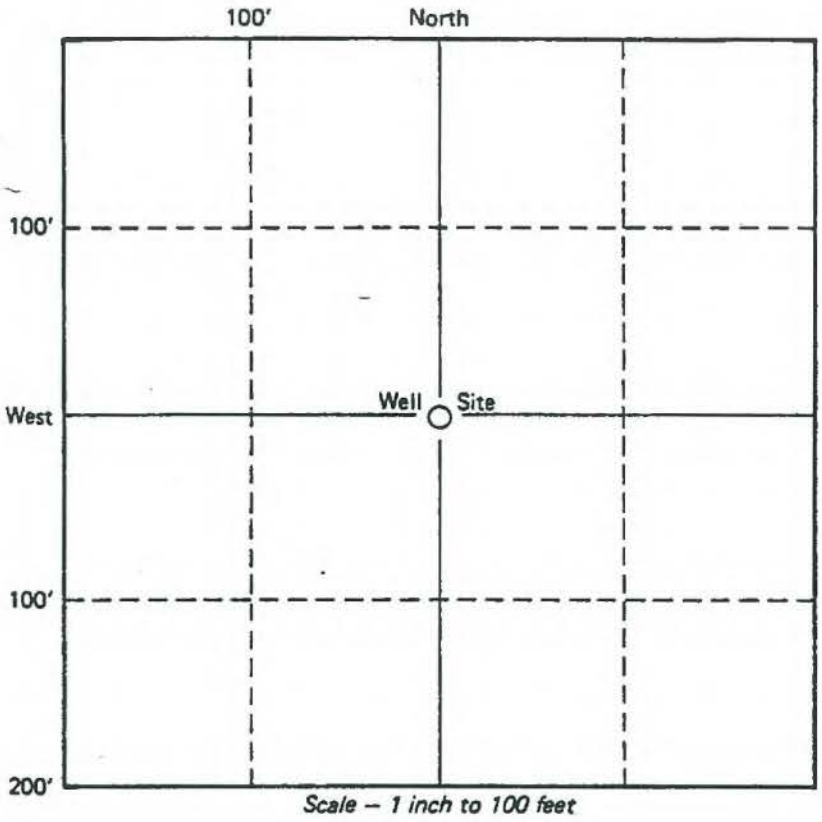
Scale – 1 inch to 1/4 mile

Do Not Fill In

SAN BERNARDINO CO.
LAND MANAGEMENT - E.P.W.A.
01 00027239 0045 CHR 02/20/90 15:01 F
005 ENV HEALTH SERV TOT PAID: 110.00
0 00000000
561 EHS 110.00

03-14785-631 Rev. 8/90

well #12 2S/1W-34J



Scale – 1 inch to 100 feet

12. PLOT PLAN:

(a) In perspective to the well site, sketch and label the following items: well lot property lines, other wells *(include abandoned wells)*, sewage disposal systems *(sewers, septic tanks, leaching fields, seepage pits, cesspools)*, lakes and ponds, water courses and animals or fowl kept.

(b) Indicate the distance in *feet*, of any of the following which are within 200 ft. of the well site:

Other wells	_____
Sewers	_____
Septic tanks	_____
Leaching fields	_____
Seepage pits	_____
Cesspools	_____
Lakes and ponds	_____
Water courses	_____
Animals or fowl kept	_____

(c) ☒ None of the above are within 200 feet of the well site.

13. I have read this application and agree to comply with all laws regulating the type of work being performed. The California Labor Code requires Workers' Compensation Insurance as a prerequisite to permit issuance unless the applicant signs the following certificate:

☐ I certify that in the performance of the work for which this permit is issued, I shall not employ any person in any manner so as to become subject to the Workers' Compensation laws of California.

Owner's Signature _____ Date _____

☒ Contractor's Signature Sam Cuen Date 2/7/90 Reg. No. 134

DISPOSITION OF PERMIT

(Do Not Fill In)

☒ Approved subject to the following:

A. Notify the Department, Jon Tracey (714) 387-4666, twenty-four (24) hours in advance to make an inspection of the following operations:

☒ Prior to sealing of the annular space or filling of the conductor casing.

2/26/90 ☐ Verify the depth of the conductor (outer) casing prior to further drilling and installation of the inner casing.

AB ☒ After installation of the surface protective slab and pumping equipment.

☐ During destruction of wells, prior to pouring the sealing material.

B. Submit to the Department within thirty (30) days after completion of work, a copy of:

☒ Water Well Driller's Report ☐ Bacteriological Analysis ☐ Inorganic Chemical Analysis

☐ Radiological Analysis ☐ General Mineral ☐ Organic Chemical Analysis ☐ General Physical

C. Other Test wells shall be amended or destroyed under permit within 24 hours of completion of test work.

☐ DENIED _____

Well #18 NOW YVWD WELL #73

TRIPLICATE
Owner's Copy 2S/W-3B1

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES

WATER WELL DRILLERS REPORT

Do not fill in
No. 204467

Notice of Intent No.
Permit No. or Date
State Well No.
Other Well No.

(1) OWNER: Name [redacted]
Address [redacted]
City Los Angeles, CA Zip 90057

(2) LOCATION OF WELL (See instructions):
County San Bernadino Owner's Well Number 18
Well address if different from above Wildwood Cyan Rd.
Township Range Section
Distance from cities, roads, railroads, fences, etc.



WELL LOCATION SKETCH

(3) TYPE OF WORK:
New Well ☒ Deepening ☐
Reconstruction ☐
Reconditioning ☐
Horizontal Well ☐
Destruction ☐ (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:
Domestic ☒
Irrigation ☐
Industrial ☐
Test Well ☐
Stock ☐
Municipal ☐
Other ☐

(5) EQUIPMENT:
Rotary ☐ Reverse ☐
Cable ☐ Air ☒
Other ☐ Bucket ☐

(6) GRAVEL PACK:
Yes ☐ No ☐ Size
Diameter of bore
Packed from to ft.

(7) CASING INSTALLED:
Steel ☐ Plastic ☒ Concrete ☐

From ft.	To ft.	Dia. in.	Gage or Wall
0	400	8	

(8) PERFORATIONS:
Type of perforation or size of screen

From ft.	To ft.	Slot size

(9) WELL SEAL:
Was surface sanitary seal provided? Yes ☒ No ☐ If yes, to depth 50 ft.
Were strata sealed against pollution? Yes ☐ No ☐ Interval ft.
Method of sealing Steel- cement

(10) WATER LEVELS:
Depth of first water, if known 240 XXXXXX ft.
Standing level after well completion 145 ft.

(11) WELL TESTS:
Was well test made? Yes ☐ No ☐ If yes, by whom?
Type of test Pump ☐ Bailer ☐ Air lift ☐
Depth to water at start of test ft. At end of test ft
Discharge gal/min after hours Water temperature
Chemical analysis made? Yes ☐ No ☐ If yes, by whom?
electric log made? Yes ☐ No ☐ If yes, attach copy to this report

(12) WELL LOG: Total depth 400 ft. Depth of completed well 400 ft.

from ft.	to ft.	Formation (Describe by color, character, size or material)
0	- 20	Broken brown DG
20	- 60	Broken to hard blue green roc
60	- 80	Broken up blue green rock
80	-120	clay brown white mix
1200	-140	Blck granite
140	-180	Broken up blue/green
180	-200	Brown & green boke up
200	-240	water brown
240	-280	brown & green broken up
280	-320	water- green broken up
320	-340	green & brown broken up
340	-400	Black granite- STOP

Work started 1-10 19 88 Completed 1-26 19 88

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
SIGNED (Well Driller)
NAME Jack Jones WELls & Pumps
(Person, firm, or corporation) (Typed or printed)
Address P.O. Box 250
City Hemet, CA 92343
License No. 436011 Date of this report 3-18-88

NOT VALID FOR PUBLIC USE
CONFIDENTIAL PER WATER CODE SEC. 13752

DWR 188 (REV. 7-76) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

2S/1W-3A1 NOW YVWD WELL # 74

ORIGINAL

File with DWR

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
WATER WELL DRILLERS REPORT

Do not fill in
No. 217126

Notice of Intent No.
Permit No. or Date 08158807

State Well No.
Other Well No.

(1) OWNER: Name [redacted]
Address [redacted]
City Los Angeles, CA Zip 90004

(2) LOCATION OF WELL (See instructions):
County San Bernardino Owner's Well Number 20
Well address if different from above Parcel 325-011-08
Township 2S Range 1W Section 3
Distance from cities, roads, railroads, fences, etc.

WELL LOCATION SKETCH

(3) TYPE OF WORK:
New Well [X] Deepening [ ]
Reconstruction [ ]
Reconditioning [ ]
Horizontal Well [ ]
Destruction [ ] (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:
Domestic [X]
Irrigation [ ]
Industrial [ ]
Test Well [ ]
Stock [ ]
Municipal [ ]
Other [ ]

(5) EQUIPMENT:
Rotary [ ] Reverse [ ]
Cable [ ] Air [X]
Other [ ] Bucket [ ]

(6) GRAVEL PACK:
Yes [X] No [ ] Size 6x4 Well Rock
Diameter of bore 12½"
Packed from 50 to 583 ft.

(7) CASING INSTALLED:
Steel [X] Plastic [ ] Concrete [ ]

From ft.	To ft.	Dia. in.	Gage or Wall
0	200	8-5/8	.188

(8) PERFORATIONS:
Type of perforation or size of screen

From ft.	To ft.	Slot size
200	583	.100

(9) WELL SEAL:
Was surface sanitary seal provided? Yes [X] No [ ] If yes, to depth 50 ft.
Were strata sealed against pollution? Yes [X] No [ ] Interval ft.
Method of sealing

(10) WATER LEVELS:
Depth of first water, if known ft.
Standing level after well completion 232 ft.

(11) WELL TESTS:
Was well test made? Yes [X] No [ ] If yes, by whom?
Type of test Pump [X] Bailer [ ] Air lift [ ]
Depth to water at start of test ft. At end of test ft.
Discharge gal/min after hours Water temperature
Chemical analysis made? Yes [ ] No [ ] If yes, by whom?
Electric log made? Yes [ ] No [ ] If yes, attach copy to this report

(12) WELL LOG: Total depth 0 ft. Depth of completed well 583 ft.
from ft. to ft. Formation (Describe by color, character, size or material)

0 - 18 - Fine sand & brown clay.
18 - 39 - Fine sand & shale.
39 - 78 - Fine sand & rock with shale mix.
78 - 129 - Fine & medium coarse sand with streaks of shale & granite.
129 - 318 - Decomposed granite - blue in color.
318 - 583 - Decomposed granite - solid formation - blue green in color.

Work started 19 Completed 19

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
SIGNED William Steese (Well Driller)
NAME William Steese - SoCal Pump & Well Service (Person, firm, or corporation) (Typed or printed)
Address 585 W. Valley Blvd.
City Bloomington, CA Zip 92316
License No. 510836 Date of this report 11/29/88

DWR 188 (REV 7-76) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

VOID UNLESS USED FOR PUBLIC WATER SUPPLY
VOID UNLESS USED FOR PUBLIC WATER SUPPLY 1752

Well #16 NOW YVWD WELL #75

TRIPLICATE
Owner's Copy

1S/1W-34Q1

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
WATER WELL DRILLERS REPORT

Do not fill in
No. 193900

Notice of Intent No.
Permit No. or Date.

State Well No.
Other Well No.

(1) OWNER: Name [redacted]
Address [redacted]
City Los Angeles, Ca. Zip 90057

(2) LOCATION OF WELL (See instructions):
County San Bernadino Owner's Well Number
Well address if different from above
Township Range Section
Distance from cities, roads, railroads, fences, etc.

WELL LOCATION SKETCH

(3) TYPE OF WORK:
New Well ☒ Deepening ☐
Reconstruction ☐
Reconditioning ☐
Horizontal Well ☐
Destruction ☐ (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:
Domestic ☐
Irrigation ☐
Industrial ☐
Test Well ☐
Stock ☐
Municipal ☐
Other ☐

(5) EQUIPMENT:
Rotary ☐ Reverse ☐
Cable ☐ Air ☒
Other ☐ Bucket ☐

(6) GRAVEL PACK:
Yes ☐ No ☐ Size
Diameter of bore
Packed from to ft.

(7) CASING INSTALLED:
Steel ☐ Plastic ☒ Concrete ☐

From ft.	To ft.	Dia. in.	Gage or Wall
	420	8"	

(8) PERFORATIONS:
Type of perforation or size of screen

From ft.	To ft.	Slot size

(9) WELL SEAL:
Was surface sanitary seal provided? Yes ☒ No ☐ If yes, to depth 50 ft.
Were strata sealed against pollution? Yes ☐ No ☒ Interval ft.
Method of sealing Cement-Steel/10"

(10) WATER LEVELS:
Depth of first water, if known 240 ft.
Standing level after well completion 145 ft.

(11) WELL TESTS:
Was well test made? Yes ☒ No ☐ If yes, by whom?
Type of test Pump ☐ Bailer ☐ Air lift ☒
Depth to water at start of test ft. At end of test ft.
Discharge 150 gal/min after hours Water temperature
Chemical analysis made? Yes ☐ No ☒ If yes, by whom?
Electric log made? Yes ☐ No ☒ If yes, attach copy to this report

(12) WELL LOG: Total depth 420 ft. Depth of completed well 420 ft.

from ft.	to ft.	Formation (Describe by color, character, size or material)
0	20	Broke Up Brown DG
20	40	Broke Up blue/green rock
40	60	Hard blue/green rock
60	80	Broke Up Blue/green rock
80	100	Hard blue/green rock
100	120	Clay brown/white mix broke up
120	140	Black gran. & blue/green mix
140	160	Broke Up Blue/Green
160	180	Brke Up Blue/ Green
180	200	Broke Up blue/green rock
200	220	Brown & green broke up
220	240	" " water
240	260	water " "
260	280	" " water
280	300	" " water
300	320	" " water
320	340	" " water
340	360	" " water
360	380	" " water
380	400	" " water
400	420	Hard black granite

Work started 3-13 19 87 Completed 4-1 19 87

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

SIGNED (Well Driller)

NAME Ron Engeldinger (Person, firm, or corporation) (Typed or printed)
Address P.O. Box 250
City Hemet, Ca. Zip 92343
License No. 294625 Date of this report 4-16-878

188 (REV. 7-76) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

Well 10b

*The free Adobe Reader may be used to view and complete this form. However, software must be purchased to complete, save, and reuse a saved form.

File Original with DWR

State of California

Well Completion Report

Refer to Instruction Pamphlet

No. e0107583

Page 1 of 1

Owner's Well Number MW-4

Date Work Began 11/18/2009 Date Work Ended 11/18/2009

Local Permit Agency Riverside County Department of Environmental Health

Permit Number WP 20441 Permit Date 11/10/09

DWR Use Only – Do Not Fill In

State Well Number/Site Number

N W

Latitude Longitude

APN/TRS/Other

Geologic Log

Orientation ◉ Vertical ○ Horizontal ○ Angle Specify

Drilling Method Hollow Stem Auger Drilling Fluid Air

Depth from Surface Feet	to Feet	Description Describe material, grain size, color, etc
0	4	Silty sand, fine to medium with gravel, light brown
4	9	Sand, fine to coarse with silt and gravel, brown
9	27	Silty sand, fine with medium and clay, brown
27	46	Silty sand, fine to medium with clay, brown
46	54	Silty sand, fine, gray brown
54	82	Sandy silt, fine with clay, brown

Total Depth of Boring 82 Feet

Total Depth of Completed Well 80 Feet

Well Owner

Name [redacted]

Mailing Address [redacted]

City Yucaipa State CA Zip 92399

Well Location

Address San Timoteo Canyon Road

City Calimesa County Riverside

Latitude 33 Deg. 59 Min. 15 Sec. N Longitude 117 Deg. 8 Min. 4 Sec. W

Datum NAD83 Decimal Lat. 33.987 Decimal Long. 117.134

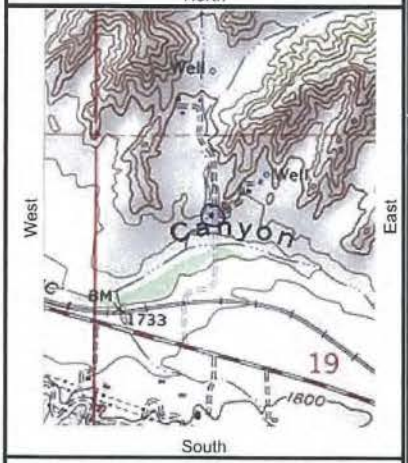
APN Book 413 Page 380 Parcel 004

Township 2S Range 2W Section 19

Location Sketch

(Sketch must be drawn by hand after form is printed.)

North



South

Illustrate or describe distance of well from roads, buildings, fences, rivers, etc. and attach a map. Use additional paper if necessary. **Please be accurate and complete.**

Activity

◉ New Well
○ Modification/Repair
○ Deepen
○ Other
○ Destroy
Describe procedures and materials under "GEOLOGIC LOG"

Planned Uses

○ Water Supply
☐ Domestic ☐ Public
☐ Irrigation ☐ Industrial
○ Cathodic Protection
○ Dewatering
○ Heat Exchange
○ Injection
◉ Monitoring
○ Remediation
○ Sparging
○ Test Well
○ Vapor Extraction
○ Other

Water Level and Yield of Completed Well

Depth to first water 60 (Feet below surface)

Depth to Static Water Level (Feet) Date Measured

Estimated Yield * (GPM) Test Type

Test Length (Hours) Total Drawdown (Feet)

*May not be representative of a well's long term yield.

Casings

Depth from Surface Feet	to Feet	Borehole Diameter (Inches)	Type	Material	Wall Thickness (Inches)	Outside Diameter (Inches)	Screen Type	Slot Size if Any (Inches)
0	65	10	Blank	PVC Sch. 40		4		
65	80	10	Screen	PVC Sch. 40		4	Milled Slots	0.020

Annular Material

Depth from Surface Feet	to Feet	Fill	Description
0	51	Cement	seal
51	55	Bentonite	seal
55	80	Filter Pack	sand

Attachments

☐ Geologic Log
☐ Well Construction Diagram
☐ Geophysical Log(s)
☐ Soil/Water Chemical Analyses
☐ Other

Attach additional information, if it exists.

Certification Statement

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief

Name Jay J. Martin for C.H.J., Incorporated, Vice President, CEG 1529
Person, Firm or Corporation

1355 E. Cooley Drive Colton CA 92324
Address City State Zip

Signed [signature] 3/18/2010 766402
C-57 Licensed Water Well Contractor Date Signed C-57 License Number

DWR 188 REV. 1/2006

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

MONITORING WELL NO. MW-4

Date Drilled: 11/18/09 Client: [redacted]

Equipment: B-61 Hollow-Stem Auger Driving Weight / Drop: 140 lbs./30 in.

Coordinates: 33.987°-117.134° Logged by: VJR Groundwater First Encountered (ft): 60.0

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	SAMPLE NO.	SAMPLES: DRIVE	SAMPLES: BULK	BLOWS/FOOT (Equiv. SPT)	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
		(SM) Silty Sand, fine to medium, gravel, light brown	Native	X		4 4 4			SPT
5		(SP-SM) Sand, fine to coarse with silt, gravel, brown		X		5 7 10			SPT
10		(SM) Silty Sand, fine with medium, clay, brown		X		5 8 13			SPT
15				X		6 9 13			SPT
20				X		6 10 18			SPT
25									
30		(SM) Silty Sand, fine to medium, clay, brown		X		9 15 19			SPT

MONITORING_WELL_09631-8.GPJ CHJ.GDT 11/24/09

C.H.J.

WELLS - SAN TIMOTEO & LIVE OAK CANYONS
RIVERSIDE COUNTY, CALIFORNIA

Job No. 09631-8

Enclosure B-4a

MONITORING WELL NO. MW-4

Date Drilled: 11/18/09 Client: [redacted]

Equipment: B-61 Hollow-Stem Auger Driving Weight / Drop: 140 lbs./30 in.

Coordinates: 33.987°-117.134° Logged by: VJR Groundwater First Encountered (ft): 60.0

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	SAMPLE NO.	SAMPLES: DRIVE	SAMPLES: BULK	BLOWS/FOOT (Equiv. SPT)	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
40				X		10 20 26			SPT
45		(SM) Silty Sand, fine, gray brown							
50				X		8 14 28			SPT
55		(ML) Sandy Silt, fine with clay, brown							
60			▼ Groundwater	X		9 16 24			SPT
65									

MONITORING_WELL 09631-8.GPJ CHJ.GDT 11/24/09

C.H.J.

WELLS - SAN TIMOTEO & LIVE OAK CANYONS
RIVERSIDE COUNTY, CALIFORNIA

Job No. 09631-8

Enclosure B-4b

MONITORING WELL NO. MW-4

Date Drilled: 11/18/09 Client: [redacted]

Equipment: B-61 Hollow-Stem Auger Driving Weight / Drop: 140 lbs./30 in.

Coordinates: 33.987°-117.134° Logged by: VJR Groundwater First Encountered (ft): 60.0

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	SAMPLE NO.	SAMPLES: DRIVE	SAMPLES: BULK	BLOWS/FOOT (Equiv. SPT)	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
				X		45 50/3"			SPT
75									
80				X		14 27 46			SPT
		END OF BORING	Refusal						
		REFUSAL AT 81.5', NO BEDROCK NO FILL, SLIGHT CAVING PERCHED LAYER OF GROUNDWATER ENCOUNTERED AT 60.0'							
85									
90									
95									
100									

MONITORING_WELL 09631-8.GPJ CHJ.GDT 11/24/09

C.H.J.

WELLS - SAN TIMOTEO & LIVE OAK CANYONS
RIVERSIDE COUNTY, CALIFORNIA

Job No. 09631-8

Enclosure B-4c

MW 107

*The free Adobe Reader may be used to view and complete this form. However, software must be purchased to complete, save, and reuse a saved form.

File Original with DWR

State of California

Well Completion Report

Refer to Instruction Pamphlet

No. e0115380

Page 1 of 2

Owner's Well Number

Date Work Began 07/29/2010 Date Work Ended 8/4/2010

Local Permit Agency San Bernardino Department of Public Health

Permit Number 7010070342 Permit Date 7/23/10

DWR Use Only – Do Not Fill In

State Well Number/Site Number

Latitude N Longitude W

APN/TRS/Other

Geologic Log

Orientation ◉ Vertical ○ Horizontal ○ Angle Specify

Drilling Method Reverse Rotary Drilling Fluid Fresh Water

Depth from Surface Feet	to Feet	Description Describe material, grain size, color, etc
35	90	Sand Gravel
90	120	Sand Clay
120	200	Sand Gravel
200	250	Sand Gravel Clay
250	310	Sand Gravel
310	340	Sand Gravel Clay
340	417	Sand Gravel

Total Depth of Boring 417 Feet

Total Depth of Completed Well 415 Feet

Well Owner

Name [redacted]

Mailing Address [redacted]

City [redacted] State CA. Zip 92399

Well Location

Address San Timoteo Canyon Road

City Yucaipa County San Bernardino

Latitude Deg. Min. Sec. N Longitude Deg. Min. Sec. W

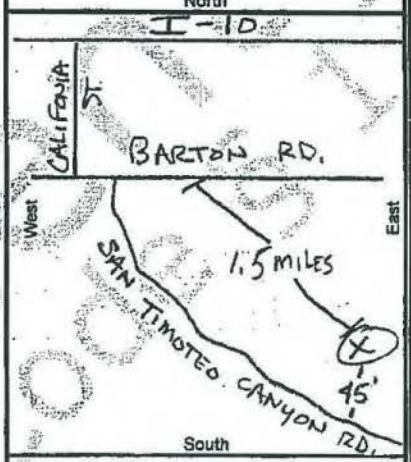
Datum Decimal Lat. Decimal Long.

APN Book 0175 Page 221 Parcel 06

Township 2S Range 3W Section 4

Location Sketch

(Sketch must be drawn by hand after form is printed.)



Illustrate or describe distance of well from roads, buildings, fences, rivers, etc. and attach a map. Use additional paper if necessary. Please be accurate and complete.

Activity

◉ New Well
○ Modification/Repair
○ Deepen
○ Other
○ Destroy
Describe procedures and materials under "GEOLOGIC LOG"

Planned Uses

○ Water Supply
☐ Domestic ☐ Public
☐ Irrigation ☐ Industrial
○ Cathodic Protection
○ Dewatering
○ Heat Exchange
○ Injection
◉ Monitoring
○ Remediation
○ Sparging
○ Test Well
○ Vapor Extraction
○ Other

Water Level and Yield of Completed Well

Depth to first water (Feet below surface)

Depth to Static Water Level (Feet) Date Measured

Estimated Yield* (GPM) Test Type

Test Length (Hours) Total Drawdown (Feet)

*May not be representative of a well's long term yield.

Casings

Depth from Surface Feet	to Feet	Borehole Diameter (Inches)	Type	Material	Wall Thickness (Inches)	Outside Diameter (Inches)	Screen Type	Slot Size if Any (Inches)
0	35	32	Conductor	Low Carbon Steel	.250	20		
0	340	17.5	Blank	PVC Sch. 80	.214	5		
340	360	17.5	Screen	PVC Sch. 80	.214	5		0.050
0	285	17.5	Blank	PVC Sch. 80	.214	5		
285	305	17.5	Screen	PVC Sch. 80	.214	5		0.050
0	120	17.7	Blank	PVC Sch. 80	.214	5		

Annular Material

Depth from Surface Feet	to Feet	Fill	Description
0	225	Filter Pack	8x16 Midcal
225	230	Fill	Sand
230	250	Bentonite	Seal
250	255	Fill	Sand
255	310	Filter Pack	8x16 Gravel
310	315	Fill	Sand

Attachments

☐ Geologic Log
☐ Well Construction Diagram
☐ Geophysical Log(s)
☐ Soil/Water Chemical Analyses
☐ Other

Attach additional information, if it exists.

Certification Statement

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief

Name Bakersfield Well & Pump Co.
Person, Firm or Corporation

7212 Fruitvale Ave Address Bakersfield City CA State 93308 Zip

Signed C-57 Licensed Water Well Contractor 8/20/2010 Date Signed 440537 C-57 License Number

DWR 188 REV. 1/2006

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

*The free Adobe Reader may be used to view and complete this form. However, software must be purchased to complete, save, and reuse a saved form.

File Original with DWR

Page 2 of 2

Owner's Well Number

Date Work Began 07/29/2010 Date Work Ended 8/4/2010

Local Permit Agency San Bernardino Department of Public Health

Permit Number 7010070342 Permit Date 7/23/10

State of California

Well Completion Report

Refer to Instruction Pamphlet

No. e0115380

DWR Use Only – Do Not Fill In

State Well Number/Site Number

Latitude N Longitude W

APN/TRS/Other

Geologic Log

Orientation ◉ Vertical ○ Horizontal ○ Angle Specify

Drilling Method Reverse Rotary Drilling Fluid Fresh Water

Depth from Surface Feet	to Feet	Description Describe material, grain size, color, etc
35	90	Sand Gravel
90	120	Sand Clay
120	200	Sand Gravel
200	250	Sand Gravel Clay
250	310	Sand Gravel
310	340	Sand Gravel Clay
340	417	Sand Gravel

Total Depth of Boring 417 Feet

Total Depth of Completed Well 415 Feet

Well Owner

Name [redacted]

Mailing Address [redacted]

City [redacted] State CA Zip 92399

Well Location

Address San Timoteo Canyon Road

City Yucaipa County San Bernardino

Latitude Deg. Min. Sec. N Longitude Deg. Min. Sec. W

Datum Decimal Lat. Decimal Long.

APN Book 0175 Page 221 Parcel 06

Township 2S Range 3W Section 4

Location Sketch

(Sketch must be drawn by hand after form is printed.)

North

West East

South

Illustrate or describe distance of well from roads, buildings, fences, rivers, etc. and attach a map. Use additional paper if necessary. Please be accurate and complete.

Activity

◉ New Well

○ Modification/Repair

○ Deepen

○ Other

○ Destroy

Describe procedures and materials under "GEOLOGIC LOG"

Planned Uses

○ Water Supply

☐ Domestic ☐ Public

☐ Irrigation ☐ Industrial

○ Cathodic Protection

○ Dewatering

○ Heat Exchange

○ Injection

◉ Monitoring

○ Remediation

○ Sparging

○ Test Well

○ Vapor Extraction

○ Other

Water Level and Yield of Completed Well

Depth to first water (Feet below surface)

Depth to Static Water Level (Feet) Date Measured

Estimated Yield * (GPM) Test Type

Test Length (Hours) Total Drawdown (Feet)

*May not be representative of a well's long term yield.

Casings

Depth from Surface Feet	to Feet	Borehole Diameter (Inches)	Type	Material	Wall Thickness (Inches)	Outside Diameter (Inches)	Screen Type	Slot Size If Any (Inches)
120	140	17.5	Screen	PVC Sch. 80	.214	5		0.050

Annular Material

Depth from Surface Feet	to Feet	Fill	Description
315	330	Bentonite	Seal
330	335	Fill	Sand
335	415	Filter Pack	8x16 Midcal

Attachments

☐ Geologic Log

☐ Well Construction Diagram

☐ Geophysical Log(s)

☐ Soil/Water Chemical Analyses

☐ Other

Attach additional information, if it exists.

Certification Statement

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief

Name Bakersfield Well & Pump Co.
Person, Firm or Corporation

7212 Fruitvale Ave Bakersfield CA 93308
Address City State Zip

Signed Kevin Dewalt 8/20/2010 440537
C-57 Licensed Water Well Contractor Date Signed C-57 License Number

WR 188 REV. 1/2006

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

Appendix 3-B

Monitoring Forms and Protocols

WATER-LEVEL MEASUREMENT FIELD FORM

Date (YYYY/MM/DD): Site ID:

Well Type: Production / Monitoring / Private Measuring Agency/Entity:

Well Pumping? Is Water Level Static?

Method of Water Level Measurement (see below): Site Status (see below):

Measuring Equipment ID: Measuring Point Elevation (ft NAVD88):

WATER LEVEL DATA

Time of Measurement					
Measurement (feet)					
Tape Correction (feet)					
Water Level below MP (feet)					
Measuring Point Correction					
Water Level below Land Surface					
Water Elevation (ft NAVD88)					

Measured by: Comments:*

*Comments should include quality concerns and changes that affect the representativeness of the measurements (e.g., changes in MP elevation, ownership, well operations, access to measure DTW, etc.)

Site Status: D = dry; O = obstructed; P = pumping; R = recently pumped and recovering; NP = nearby pumping; V = foreign substance; WD = well destroyed; SW = surface water effects; Z = other; S = Static

Method of Water Level Measurement: A = airline; B = analog; C = calibrated airline; E = estimated; G = pressure gauge; H = calibrated pressure gage; M = manometer; R = reported; S = steel tape; T = electric tape; V = calibrated electric tape; Z = other.

NOTES:

Measuring Protocol:

1. Check circuitry of electrical tape before lowering the probe into the well by dipping probe into tap water.
2. Make all readings using the same indicator for consistency (light intensity or sound).
3. Lower electrode probe slowly into the well until the indicator shows that the circuit is closed and contact with the water surface is made. Place the nail of the index finger on the insulated wire at the MP (Measuring Point) and read the depth-to-water.
4. Record time of measurement. Record depth to water in the row “Measurement (feet)”. If the tape has been repaired and spliced or has a calibration correction, subtract the “Tape Correction” value from the “Measurement” value and record the difference in the row “Water Level below MP”.
5. Pull the tape up and make a check measurement by repeating steps 3-4. Record the check measurement in column 2. If check measurement does not agree with the original measurement within 0.02 foot, continue to make measurements until the reason of lack of agreement is determined or the results are shown to be reliable. If more than 2 measurements are made, use best judgment to select measurement most representative of field conditions.
6. Disinfect and rinse that part of tape that was submerged below water. Dry tape and rewind.

Format instructions and notes:

Site ID:	Well identified or State Well No.
MP:	measuring point
ft NAVD88:	feet above the National Vertical Datum of 1988.
Measuring Equipment ID:	serial number or identifier of measuring equipment

WELL PRODUCTION RECORD

Date	Time	Well ID	Totalizer Reading (Gallons)	Instantaneous Pumping Rate (GPM)	Estimated Pumping Rate (GPM)	Model and Make of Totalizer

WATER QUALITY FIELD FORM

Date (YYYY/MM/DD): Site ID:

Well Type: Production / Monitoring / Private Measuring Agency/Entity:

Well Pumping? If so, how long? Is Initial Water Level Static?

Method of Well Purging (see below): Site Status (see below):

Purging Equipment ID: Water Quality Meter ID:

Purge Volume Calculation:

[A] Total depth of well casing (ft bls): [C] Well Casing Inside Diameter (inches):

[B] Static depth to water, if not pumping (ft bls): [D] Length of Water Column, [A] - [B] (ft):

Purge Volume (3 Casing Volumes), ([D] * π/4 * ([C]/12)^2) * 3 =

WATER QUALITY PARAMETERS

Time	Purge Rate	Temperature (^{o}C)	pH	Conductivity ( )	Oxidation-Reduction Potential (mV)	Dissolved Oxygen (mg/L)	Turbidity (NTUs)

Measured by: Comments:*

WATER QUALITY FIELD FORM

*Comments should include quality concerns and changes that affect the representativeness of the measurements (e.g., changes in pump placement, ownership, well operations, access to sampling port, etc.)

Site Status: D = dry; O = obstructed; P = pumping; R = recently pumped and recovering; NP = nearby pumping; V = foreign substance; WD = well destroyed; SW = surface water effects; Z = other; S = Static

Method of Well Purging: B = bailer; D = dedicated submersible pump; P = portable submersible pump; T = dedicated turbine pump; S = peristaltic pump.

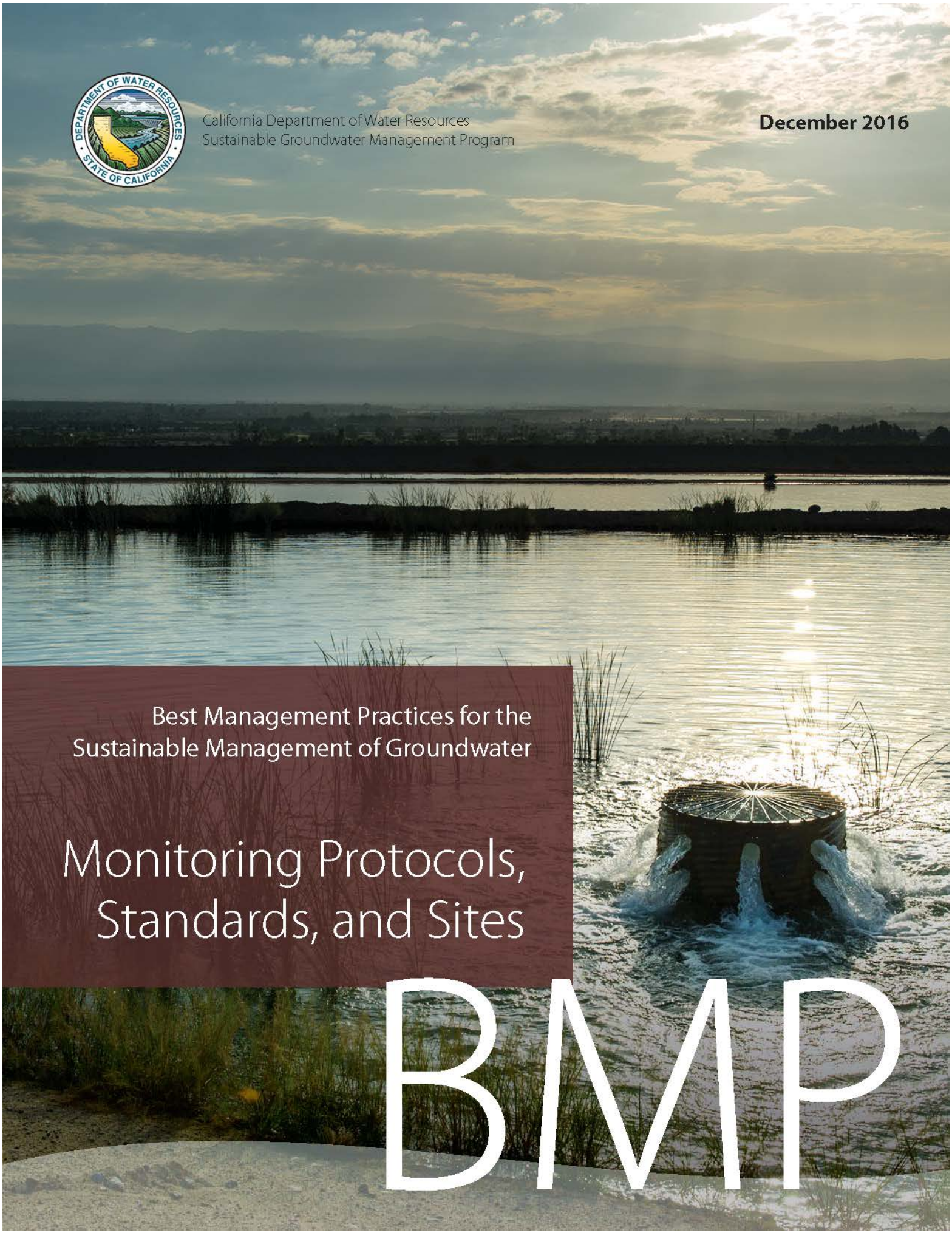
NOTES:

Purging and Sampling Protocol:

1	If the well has a dedicated pump and it is operating, ensure that it has been operating consistently and at least three (3) casing volumes have been pumped. If not, note pumping rate and time to purge 3 casing volumes before collecting representative samples. Measure and record water quality parameters through purging process.
2	If the well does not have a dedicate pump, then use purging equipment (e.g., portable submersible pump, bailer) to purge well. If using a portable submersible pump, lower pump to depth (consistent with previous smapling events) that ensures pump will not draw water level down to intake and, if possible, is positioned above the top of the well screen.
3	Ensure that portable purging equipment is properly decontaminated prior to use. Any decontamination must be documented (e.g., material used to decontaminate equipment, rinsing method, containment of waste, waste disposal).
4	Measure and/or record purge rate periodically. Collect purge sample to measure parameters periodically. Parameters should stablize (within 10% of previous three readings) before collecting the water quality sample.
5	Use the appropriate sample containers provided by the analytical laboratory. Sample containers shoud be labeled prior to sample collection. The sample label should include: Sample ID (often well ID), sample date and time of collection, sampling personnel, preservative used (if any), and the analytical method to be used on the sample.
6	All samples should be preserved as soon as possible in an ice chest containing ice. The samples should be chilled and maintained at 4 ^{o}C.
7	The Chain-of-Custory form should be filled out as the sample is collected and preserved.

Format instructions and notes:

Site ID:	Well identifier or State Well No.
ft bls:	feet below land surface
Purging Equipment ID/description:	serial number or identifier of measuring equipment



California Department of Water Resources
Sustainable Groundwater Management Program

December 2016

Best Management Practices for the Sustainable Management of Groundwater

Monitoring Protocols, Standards, and Sites

BMP

State of California
Edmund G. Brown Jr., Governor

California Natural Resources Agency
John Laird, Secretary for Natural Resources

Department of Water Resources
Mark W. Cowin, Director

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Groundwater Monitoring Protocols, Standards, and Sites
Best Management Practice

1. OBJECTIVE

The objective of this *Best Management Practice* (BMP) is to assist in the development of Monitoring Protocols. The California Department of Water Resources (the Department or DWR) has developed this document as part of the obligation in the Technical Assistance chapter (Chapter 7) of the Sustainable Groundwater Management Act (SGMA) to support the long-term sustainability of California's groundwater *basins*. Information provided in this BMP provides technical assistance to Groundwater Sustainability Agencies (GSAs) and other stakeholders to aid in the establishment of consistent data collection processes and procedures. In addition, this BMP can be used by GSAs to adopt a set of sampling and measuring procedures that will yield similar data regardless of the monitoring personnel. Finally, this BMP identifies available resources to support the development of monitoring protocols.

This BMP includes the following sections:

1. Objective. A brief description of how and where monitoring protocols are required under SGMA and the overall objective of this BMP.
2. Use and Limitations. A brief description of the use and limitations of this BMP.
3. Monitoring Protocol Fundamentals. A description of the general approach and background of groundwater monitoring protocols.
4. Relationship of Monitoring Protocols to other BMPs. A description of how this BMP is connected with other BMPS.
5. Technical Assistance. Technical content providing guidance for regulatory sections.
6. Key Definitions. Descriptions of definitions identified in the GSP Regulations or SGMA.
7. Related Materials. References and other materials that provide supporting information related to the development of Groundwater Monitoring Protocols.

2. USE AND LIMITATIONS

BMPs developed by the Department provide technical guidance to GSAs and other stakeholders. Practices described in these BMPs do not replace the GSP Regulations, nor do they create new requirements or obligations for GSAs or other stakeholders. In addition, using this BMP to develop a GSP does not equate to an approval determination by the Department. All references to GSP Regulations relate to Title 23 of the California Code of Regulations (CCR), Division 2, Chapter 1.5, and Subchapter 2. All references to SGMA relate to California Water Code sections in Division 6, Part 2.74.

3. MONITORING PROTOCOL FUNDAMENTALS

Establishing data collection protocols that are based on best available scientific methods is essential. Protocols that can be applied consistently across all basins will likely yield comparable data. Consistency of data collection methods reduces uncertainty in the comparison of data and facilitates more accurate communication within basins as well as between basins.

Basic minimum technical standards of accuracy lead to quality data that will better support implementation of GSPs.

4. RELATIONSHIP OF MONITORING PROTOCOL TO OTHER BMPS

Groundwater monitoring is a fundamental component of SGMA, as each GSP must include a sufficient network of data that demonstrates measured progress toward the achievement of the sustainability goal for each basin. For this reason, a standard set of protocols need to be developed and utilized.

It is important that data is developed in a manner consistent with the basin setting, planning, and projects/management actions steps identified on **Figure 1** and the GSP Regulations. The inclusion of monitoring protocols in the GSP Regulations also emphasizes the importance of quality empirical data to support GSPs and provide comparable information from basin to basin.

Figure 1 provides a logical progression for the development of a GSP and illustrates how monitoring protocols are linked to other related BMPs. This figure also shows the context of the BMPs as they relate to various steps to sustainability as outlined in the GSP Regulations. The monitoring protocol BMP is part of the Monitoring step identified in **Figure 1**.

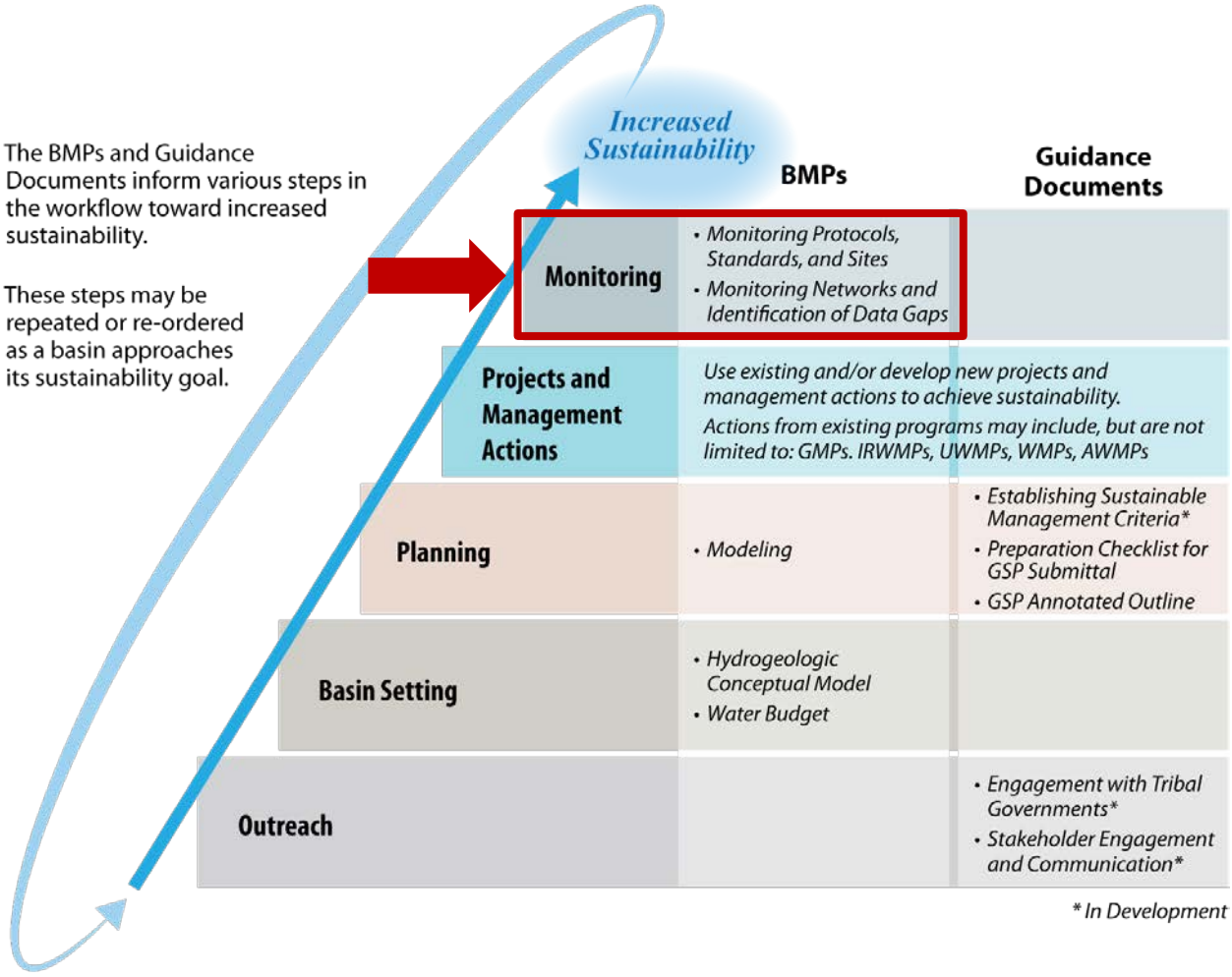


Figure 1 – Logical Progression of Basin Activities Needed to Increase Basin Sustainability

5. TECHNICAL ASSISTANCE

23 CCR §352.2. Monitoring Protocols. Each Plan shall include monitoring protocols adopted by the Agency for data collection and management, as follows:
(a) Monitoring protocols shall be developed according to best management practices.
(b) The Agency may rely on monitoring protocols included as part of the best management practices developed by the Department, or may adopt similar monitoring protocols that will yield comparable data.
(c) Monitoring protocols shall be reviewed at least every five years as part of the periodic evaluation of the Plan, and modified as necessary.

The GSP Regulations specifically call out the need to utilize protocols identified in this BMP, or develop similar protocols. The following technical protocols provide guidance based upon existing professional standards and are commonly adopted in various groundwater-related programs. They provide clear techniques that yield quality data for use in the various components of the GSP. They can be further elaborated on by individual GSAs in the form of standard operating procedures which reflect specific local requirements and conditions. While many methodologies are suggested in this BMP, it should be understood that qualified professional judgment should be used to meet the specific monitoring needs.

The following BMPs may be incorporated into a GSP's monitoring protocols section for collecting groundwater elevation data. A GSP that adopts protocols that deviate from these BMPs must demonstrate that they will yield comparable data.

PROTOCOLS FOR ESTABLISHING A MONITORING PROGRAM

The protocol for establishment of a monitoring program should be evaluated in conjunction with the *Monitoring Network and Identification of Data Gaps* BMP and other BMPs. Monitoring protocols must take into consideration the *Hydrogeologic Conceptual Model, Water Budget, and Modeling* BMPs when considering the data needs to meet GSP objectives and the sustainability goal.

It is suggested that each GSP incorporate the Data Quality Objective (DQO) process following the U.S. EPA *Guidance on Systematic Planning Using the Data Quality Objectives Process* (EPA, 2006). Although strict adherence to this method is not required, it does provide a robust approach to consider and assures that data is collected with a specific purpose in mind, and efforts for monitoring are as efficient as possible to achieve the objectives of the GSP and compliance with the GSP Regulations.

The DQO process presents a method that can be applied directly to the sustainability criteria quantitative requirements through the following steps.

1. State the problem – Define sustainability indicators and planning considerations of the GSP and sustainability goal.
2. Identify the goal – Describe the quantitative measurable objectives and minimum thresholds for each of the sustainability indicators.
3. Identify the inputs – Describe the data necessary to evaluate the sustainability indicators and other GSP requirements (i.e. water budget).
4. Define the boundaries of the study – This is commonly the extent of the Bulletin 118 groundwater basin or subbasin, unless multiple GSPs are prepared for a given basin. In that case, evaluation of the coordination plan and specifically how the monitoring will be comparable and meet the sustainability goals for the entire basin.
5. Develop an analytical approach – Determine how the quantitative sustainability indicators will be evaluated (i.e. are special analytical methods required that have specific data needs).
6. Specify performance or acceptance criteria – Determine what quality the data must have to achieve the objective and provide some assurance that the analysis is accurate and reliable.
7. Develop a plan for obtaining data – Once the objectives are known determine how these data should be collected. Existing data sources should be used to the greatest extent possible.

These steps of the DQO process should be used to guide GSAs to develop the most efficient monitoring process to meet the measurable objectives of the GSP and the sustainability goal. The DQO process is an iterative process and should be evaluated regularly to improve monitoring efficiencies and meet changing planning and project needs. Following the DQO process, GSAs should also include a data quality control and quality assurance plan to guide the collection of data.

Many monitoring programs already exist as part of ongoing groundwater management or other programs. To the extent possible, the use of existing monitoring data and programs should be utilized to meet the needs for characterization, historical record documentation, and continued monitoring for the SGMA program. However, an evaluation of the existing monitoring data should be performed to assure the data being collected meets the DQOs, regulatory requirements, and data collection protocol described in this BMP. While this BMP provides guidance for collection of various

regulatory based requirements, there is flexibility among the various methodologies available to meet the DQOs based upon professional judgment (local conditions or project needs).

At a minimum, for each monitoring site, the following information or procedure should be collected and documented:

- Long-term access agreements. Access agreements should include year-round site access to allow for increased monitoring frequency.
- A unique identifier that includes a general written description of the site location, date established, access instructions and point of contact (if necessary), type of information to be collected, latitude, longitude, and elevation. Each monitoring location should also track all modifications to the site in a modification log.

PROTOCOLS FOR MEASURING GROUNDWATER LEVELS

This section presents considerations for the methodology of collection of groundwater level data such that it meets the requirements of the GSP Regulations and the DQOs of the specific GSP. Groundwater levels are a fundamental measure of the status of groundwater conditions within a basin. In many cases, relationships of the sustainability indicators may be able to be correlated with groundwater levels. The quality of this data must consider the specific aquifer being monitored and the methodology for collecting these levels.

The following considerations for groundwater level measuring protocols should ensure the following:

- Groundwater level data are taken from the correct location, well ID, and screen interval depth
- Groundwater level data are accurate and reproducible
- Groundwater level data represent conditions that inform appropriate basin management DQOs
- All salient information is recorded to correct, if necessary, and compare data
- Data are handled in a way that ensures data integrity

General Well Monitoring Information

The following presents considerations for collection of water level data that include regulatory required components as well as those which are recommended.

- Groundwater elevation data will form the basis of basin-wide water-table and piezometric maps, and should approximate conditions at a discrete period in time. Therefore, all groundwater levels in a basin should be collected within as short a time as possible, preferably within a 1 to 2 week period.
- Depth to groundwater must be measured relative to an established Reference Point (RP) on the well casing. The RP is usually identified with a permanent marker, paint spot, or a notch in the lip of the well casing. By convention in open casing monitoring wells, the RP reference point is located on the north side of the well casing. If no mark is apparent, the person performing the measurement should measure the depth to groundwater from the north side of the top of the well casing.
- The elevation of the RP of each well must be surveyed to the North American Vertical Datum of 1988 (NAVD88), or a local datum that can be converted to NAVD88. The elevation of the RP must be accurate to within 0.5 foot. It is preferable for the RP elevation to be accurate to 0.1 foot or less. Survey grade global navigation satellite system (GNSS) global positioning system (GPS) equipment can achieve similar vertical accuracy when corrected. Guidance for use of GPS can be found at USGS http://water.usgs.gov/osw/gps/. Hand-held GPS units likely will not produce reliable vertical elevation measurement accurate enough for the casing elevation consistent with the DQOs and regulatory requirements.
- The sampler should remove the appropriate cap, lid, or plug that covers the monitoring access point listening for pressure release. If a release is observed, the measurement should follow a period of time to allow the water level to equilibrate.
- Depth to groundwater must be measured to an accuracy of 0.1 foot below the RP. It is preferable to measure depth to groundwater to an accuracy of 0.01 foot. Air lines and acoustic sounders may not provide the required accuracy of 0.1 foot.
- The water level meter should be decontaminated after measuring each well.

Where existing wells do not meet the base standard as described in the GSP Regulations or the considerations provided above, new monitoring wells may need to be constructed to meet the DQOs of the GSP. The design, installation, and documentation of new monitoring wells must consider the following:

- Construction consistent with California Well Standards as described in Bulletins 74-81 and 74-90, and local permitting agency standards of practice.
- Logging of borehole cuttings under the supervision of a California Professional Geologist and described consistent with the Unified Soil Classification System methods according to ASTM standard D2487-11.
- Written criteria for logging of borehole cuttings for comparison to known geologic formations, principal aquifers and aquitards/aquicludes, or specific marker beds to aid in consistent stratigraphic correlation within and across basins.
- Geophysical surveys of boreholes to aid in consistency of logging practices. Methodologies should include resistivity, spontaneous potential, spectral gamma, or other methods as appropriate for the conditions. Selection of geophysical methods should be based upon the opinion of a professional geologist or professional engineer, and address the DQOs for the specific borehole and characterization needs.
- Prepare and submit State well completion reports according to the requirements of §13752. Well completion report documentation should include geophysical logs, detailed geologic log, and formation identification as attachments. An example well completion as-built log is illustrated in **Figure 2.** DWR well completion reports can be filed directly at the Online System for Well Completion Reports (OSWCR) http://water.ca.gov/oswcr/index.cfm.

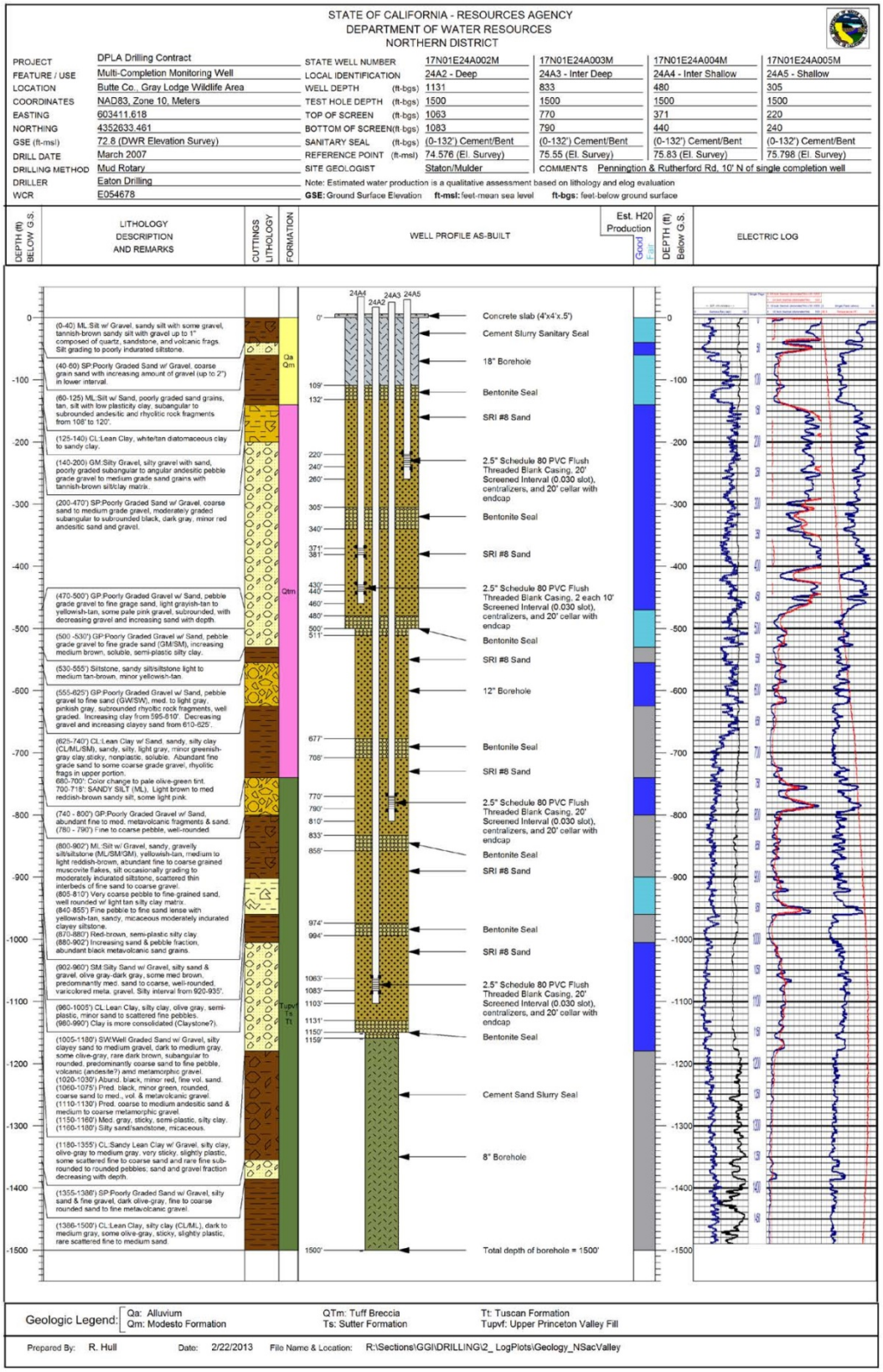


Figure 2 – Example As-Built Multi-Completion Monitoring Well Log

Measuring Groundwater Levels

Well construction, anticipated groundwater level, groundwater level measuring equipment, field conditions, and well operations should be considered prior collection of the groundwater level measurement. The USGS *Groundwater Technical Procedures* (Cunningham and Schalk, 2011) provide a thorough set of procedures which can be used to establish specific Standard Operating Procedures (SOPs) for a local agency. **Figure 3** illustrates a typical groundwater level measuring event and simultaneous pressure transducer download.

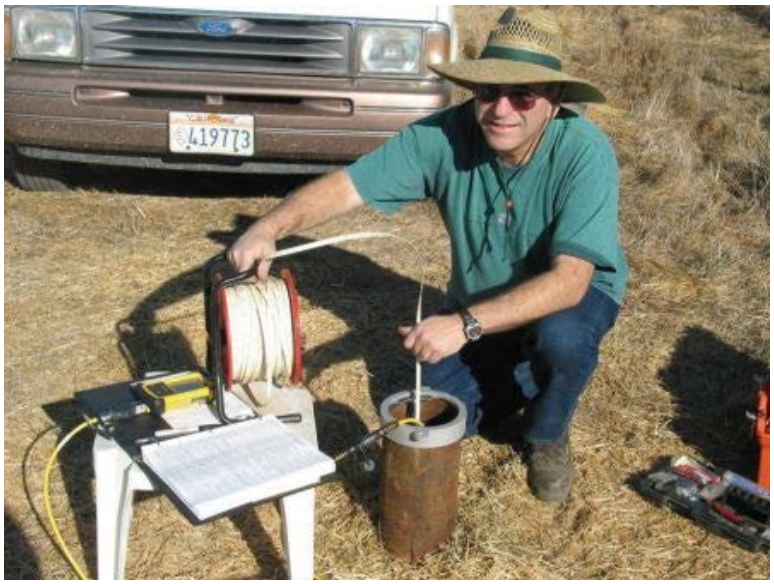


Figure 3 – Collection of Water Level Measurement and Pressure Transducer Download

The following points provide a general approach for collecting groundwater level measurements:

- Measure depth to water in the well using procedures appropriate for the measuring device. Equipment must be operated and maintained in accordance with manufacturer's instructions. Groundwater levels should be measured to the nearest 0.01 foot relative to the RP.
- For measuring wells that are under pressure, allow a period of time for the groundwater levels to stabilize. In these cases, multiple measurements should be collected to ensure the well has reached equilibrium such that no significant changes in water level are observed. Every effort should be made to ensure that a representative stable depth to groundwater is recorded. If a well does not stabilize, the quality of the value should be appropriately qualified as a

questionable measurement. In the event that a well is artesian, site specific procedures should be developed to collect accurate information and be protective of safety conditions associated with a pressurized well. In many cases, an extension pipe may be adequate to stabilize head in the well. Record the dimension of the extension and document measurements and configuration.

- The sampler should calculate the groundwater elevation as:

$$GWE = RPE - DTW$$

Where:

GWE = Groundwater Elevation
RPE = Reference Point Elevation
DTW = Depth to Water

The sampler must ensure that all measurements are in consistent units of feet, tenths of feet, and hundredths of feet. Measurements and RPEs should not be recorded in feet and inches.

Recording Groundwater Levels

- The sampler should record the well identifier, date, time (24-hour format), RPE, height of RP above or below ground surface, DTW, GWE, and comments regarding any factors that may influence the depth to water readings such as weather, nearby irrigation, flooding, potential for tidal influence, or well condition. If there is a questionable measurement or the measurement cannot be obtained, it should be noted. An example of a field sheet with the required information is shown in **Figure 4**. It includes questionable measurement and no measurement codes that should be noted. This field sheet is provided as an example. Standardized field forms should be used for all data collection. The aforementioned USGS *Groundwater Technical Procedures* offers a number of example forms.
- The sampler should replace any well caps or plugs, and lock any well buildings or covers.
- All data should be entered into the GSA data management system (DMS) as soon as possible. Care should be taken to avoid data entry mistakes and the entries should be checked by a second person for compliance with the DQOs.

STATE OF CALIFORNA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES

WELL DATA

STATE WELL NUMBER	COUNTY	REFERENCE POINT ELEV.	MEASURING AGENCY
			DWR

NO MEASUREMENT

0. Measurement discontinued
1. Pumping
2. Pump house locked
3. Tape hung up
4. Can't get tape in casing
5. Unable to locate well
6. Well has been destroyed
7. Special
8. Casing leaky or wet
9. Temporarily inaccessible

QUESTIONABLE MEASUREMENT

0. Caved or deepened
1. Pumping
2. Nearby pump operating
3. Casing leaky or wet
4. Pumped recently
5. Air or pressure gauge measurement
6. Other
7. Recharge operation at or nearby well
8. Oil in casing

DATE	N M	Q M	TAPE AT RP	TAPE AT WS	RP to WS	OBSR VR	COMMENTS

DWR 1213

Figure 4 – Example of Water Level Well Data Field Collection Form

Pressure Transducers

Groundwater levels and/or calculated groundwater elevations may be recorded using pressure transducers equipped with data loggers installed in monitoring wells. When installing pressure transducers, care must be exercised to ensure that the data recorded by the transducers is confirmed with hand measurements.

The following general protocols must be followed when installing a pressure transducer in a monitoring well:

- The sampler must use an electronic sounder or chalked steel tape and follow the protocols listed above to measure the groundwater level and calculate the groundwater elevation in the monitoring well to properly program and reference the installation. It is recommended that transducers record measured groundwater level to conserve data capacity; groundwater elevations can be calculated at a later time after downloading.
- The sampler must note the well identifier, the associated transducer serial number, transducer range, transducer accuracy, and cable serial number.
- Transducers must be able to record groundwater levels with an accuracy of at least 0.1 foot. Professional judgment should be exercised to ensure that the data being collected is meeting the DQO and that the instrument is capable. Consideration of the battery life, data storage capacity, range of groundwater level fluctuations, and natural pressure drift of the transducers should be included in the evaluation.
- The sampler must note whether the pressure transducer uses a vented or non-vented cable for barometric compensation. Vented cables are preferred, but non-vented units provide accurate data if properly corrected for natural barometric pressure changes. This requires the consistent logging of barometric pressures to coincide with measurement intervals.
- Follow manufacturer specifications for installation, calibration, data logging intervals, battery life, correction procedure (if non-vented cables used), and anticipated life expectancy to assure that DQOs are being met for the GSP.
- Secure the cable to the well head with a well dock or another reliable method. Mark the cable at the elevation of the reference point with tape or an indelible marker. This will allow estimates of future cable slippage.
- The transducer data should periodically be checked against hand measured groundwater levels to monitor electronic drift or cable movement. This should happen during routine site visits, at least annually or as necessary to maintain data integrity.

- The data should be downloaded as necessary to ensure no data is lost and entered into the basin's DMS following the QA/QC program established for the GSP. Data collected with non-vented data logger cables should be corrected for atmospheric barometric pressure changes, as appropriate. After the sampler is confident that the transducer data have been safely downloaded and stored, the data should be deleted from the data logger to ensure that adequate data logger memory remains.

PROTOCOLS FOR SAMPLING GROUNDWATER QUALITY

The following protocols can be incorporated into a GSP's monitoring protocols for collecting groundwater quality data. More detailed sampling procedures and protocols are included in the standards and guidance documents listed at the end of this BMP. A GSP that adopts protocols that deviate from these BMPs must demonstrate that the adopted protocols will yield comparable data.

In general, the use of existing water quality data within the basin should be done to the greatest extent possible if it achieves the DQOs for the GSP. In some cases it may be necessary to collect additional water quality data to support monitoring programs or evaluate specific projects. The USGS *National Field Manual for the Collection of Water Quality Data* (Wilde, 2005) should be used to guide the collection of reliable data. **Figure 5** illustrates a typical groundwater quality sampling setup.



Figure 5 – Typical Groundwater Quality Sampling Event

All analyses should be performed by a laboratory certified under the State Environmental Laboratory Accreditation Program. The specific analytical methods are beyond the scope of this BMP, but should be commiserate with other programs evaluating water quality within the basin for comparative purposes.

Groundwater quality sampling protocols should ensure that:

- Groundwater quality data are taken from the correct location
- Groundwater quality data are accurate and reproducible
- Groundwater quality data represent conditions that inform appropriate basin management and are consistent with the DQOs
- All salient information is recorded to normalize, if necessary, and compare data
- Data are handled in a way that ensures data integrity

The following points are general guidance in addition to the techniques presented in the previously mentioned USGS *National Field Manual for the Collection of Water Quality Data.*

Standardized protocols include the following:

- Prior to sampling, the sampler must contact the laboratory to schedule laboratory time, obtain appropriate sample containers, and clarify any sample holding times or sample preservation requirements.
- Each well used for groundwater quality monitoring must have a unique identifier. This identifier must appear on the well housing or the well casing to avoid confusion.
- In the case of wells with dedicated pumps, samples should be collected at or near the wellhead. Samples should not be collected from storage tanks, at the end of long pipe runs, or after any water treatment.
- The sampler should clean the sampling port and/or sampling equipment and the sampling port and/or sampling equipment must be free of any contaminants. The sampler must decontaminate sampling equipment between sampling locations or wells to avoid cross-contamination between samples.
- The groundwater elevation in the well should be measured following appropriate protocols described above in the groundwater level measuring protocols.
- For any well not equipped with low-flow or passive sampling equipment, an adequate volume of water should be purged from the well to ensure that the groundwater sample is representative of ambient groundwater and not stagnant water in the well casing. Purging three well casing volumes is generally

considered adequate. Professional judgment should be used to determine the proper configuration of the sampling equipment with respect to well construction such that a representative ambient groundwater sample is collected. If pumping causes a well to be evacuated (go dry), document the condition and allow well to recover to within 90% of original level prior to sampling. Professional judgment should be exercised as to whether the sample will meet the DQOs and adjusted as necessary.

- Field parameters of pH, electrical conductivity, and temperature should be collected for each sample. Field parameters should be evaluated during the purging of the well and should stabilize prior to sampling. Measurements of pH should only be measured in the field, lab pH analysis are typically unachievable due to short hold times. Other parameters, such as oxidation-reduction potential (ORP), dissolved oxygen (DO) (in situ measurements preferable), or turbidity, may also be useful for meeting DQOs of GSP and assessing purge conditions. All field instruments should be calibrated daily and evaluated for drift throughout the day.
- Sample containers should be labeled prior to sample collection. The sample label must include: sample ID (often well ID), sample date and time, sample personnel, sample location, preservative used, and analytes and analytical method.
- Samples should be collected under laminar flow conditions. This may require reducing pumping rates prior to sample collection.
- Samples should be collected according to appropriate standards such as those listed in the *Standard Methods for the Examination of Water and Wastewater*, USGS *National Field Manual for the Collection of Water Quality Data,* or other appropriate guidance. The specific sample collection procedure should reflect the type of analysis to be performed and DQOs.
- All samples requiring preservation must be preserved as soon as practically possible, ideally at the time of sample collection. Ensure that samples are appropriately filtered as recommended for the specific analyte. Entrained solids can be dissolved by preservative leading to inconsistent results of dissolve analytes. Specifically, samples to be analyzed for metals should be field-filtered prior to preservation; do not collect an unfiltered sample in a preserved container.
- Samples should be chilled and maintained at 4 °C to prevent degradation of the sample. The laboratory's Quality Assurance Management Plan should detail appropriate chilling and shipping requirements.

- Samples must be shipped under chain of custody documentation to the appropriate laboratory promptly to avoid violating holding time restrictions.
- Instruct the laboratory to use reporting limits that are equal to or less than the applicable DQOs or regional water quality objectives/screening levels.

Special protocols for low-flow sampling equipment

In addition to the protocols listed above, sampling using low-flow sample equipment should adopt the following protocols derived from EPA's *Low-flow (minimal drawdown) ground-water sampling procedures* (Puls and Barcelona, 1996). These protocols apply to low-flow sampling equipment that generally pumps between 0.1 and 0.5 liters per minute. These protocols are not intended for bailers.

Special protocols for passive sampling equipment

In addition to the protocols listed above, passive diffusion samplers should follow protocols set forth in USGS Fact Sheet 088-00.

PROTOCOLS FOR MONITORING SEAWATER INTRUSION

Monitoring seawater intrusion requires analysis of the chloride concentrations within groundwater of each principal aquifer subject to seawater intrusion. While no significant standardized approach exists, the methodologies described above for degraded water quality can be applied for the collection of groundwater samples. In addition to the protocol described above, the following protocols should be followed:

- Water quality samples should be collected and analyzed at least semi-annually. Samples will be analyzed for dissolved chloride at a minimum. It may be beneficial to include analyses of iodide and bromide to aid in determination of salinity source. More frequent sampling may be necessary to meet DQOs of GSP. The development of surrogate measures of chloride concentration may facilitate cost-effective means to monitor more frequently to observe the range of conditions and variability of the flow dynamics controlling seawater intrusion.
- Groundwater levels will be collected at a frequency adequate to characterize changes in head in the vicinity of the leading edge of degraded water quality in each principal aquifer. Frequency may need to be increased in areas of known preferential pathways, groundwater pumping, or efficacy evaluation of mitigation projects.
- The use of geophysical surveys, electrical resistivity, or other methods may provide for identification of preferential pathways and optimize monitoring well placement and evaluation of the seawater intrusion front. Professional judgment

should be exercised to determine the appropriate methodology and whether the DQOs for the GSP would be met.

PROTOCOLS FOR MEASURING STREAMFLOW

Monitoring of streamflow is necessary for incorporation into water budget analysis and for use in evaluation of stream depletions associated with groundwater extractions. The use of existing monitoring locations should be incorporated to the greatest extent possible. Many of these streamflow monitoring locations currently follow the protocol described below.

Establishment of new streamflow discharge sites should consider the existing network and the objectives of the new location. Professional judgment should be used to determine the appropriate permitting that may be necessary for the installation of any monitoring locations along surface water bodies. Regular frequent access will be necessary to these sites for the development of ratings curves and maintenance of equipment.

To establish a new streamflow monitoring station special consideration must be made in the field to select an appropriate location for measuring discharge. Once a site is selected, development of a relationship of stream stage to discharge will be necessary to provide continuous estimates of streamflow. Several measurements of discharge at a variety of stream stages will be necessary to develop the ratings curve correlating stage to discharge. The use of Acoustic Doppler Current Profilers (ADCPs) can provide accurate estimates of discharge in the correct settings. Professional judgment must be exercised to determine the appropriate methodology. Following development of the ratings curve a simple stilling well and pressure transducer with data logger can be used to evaluate stage on a frequent basis. A simple stilling well and staff gage is illustrated in **Figure 6**.

Streamflow measurements should be collected, analyzed, and reported in accordance with the procedures outlined in USGS Water Supply Paper 2175, *Volume 1. – Measurement of Stage Discharge* and *Volume 2. – Computation of Discharge.* This methodology is currently being used by both the USGS and DWR for existing streamflow monitoring throughout the State.



Figure 6 – Simple Stilling Well and Staff Gage Setup

PROTOCOLS FOR MEASURING SUBSIDENCE

Evaluating and monitoring inelastic land subsidence can utilize multiple data sources to evaluate the specific conditions and associated causes. To the extent possible, the use of existing data should be utilized. Subsidence can be estimated from numerous techniques, they include: level surveying tied to known stable benchmarks or benchmarks located outside the area being studied for possible subsidence; installing and tracking changes in borehole extensometers; obtaining data from continuous GPS (CGPS) locations, static GPS surveys or Real-Time-Kinematic (RTK) surveys; or analyzing Interferometric Synthetic Aperture Radar (InSAR) data. No standard procedures exist for collecting data from the potential subsidence monitoring approaches. However, an approach may include:

- Identification of land subsidence conditions.
    - Evaluate existing regional long-term leveling surveys of regional infrastructure, i.e. roadways, railroads, canals, and levees.
    - Inspect existing county and State well records where collapse has been noted for well repairs or replacement.
    - Determine if significant fine-grained layers are present such that the potential for collapse of the units could occur should there be significant depressurization of the aquifer system.

- Inspect geologic logs and the hydrogeologic conceptual model to aid in identification of specific units of concern.
- Collect regional remote-sensing information such as InSAR, commonly provided by USGS and NASA. Data availability is currently limited, but future resources are being developed.

- Monitor regions of suspected subsidence where potential exists.
  - Establish CGPS network to evaluate changes in land surface elevation.
  - Establish leveling surveys transects to observe changes in land surface elevation.
  - Establish extensometer network to observe land subsidence. An example of a typical extensometer design is illustrated in **Figure 7**. There are a variety of extensometer designs and they should be selected based on the specific DQOs.

Various standards and guidance documents for collecting data include:

- Leveling surveys must follow surveying standards set out in the California Department of Transportation's Caltrans Surveys Manual.
- GPS surveys must follow surveying standards set out in the California Department of Transportation's Caltrans Surveys Manual.
- USGS has been performing subsidence surveys within several areas of California. These studies are sound examples for appropriate methods and should be utilized to the extent possible and where available:
  - http://ca.water.usgs.gov/land_subsidence/california-subsidence-measuring.html
- Instruments installed in borehole extensometers must follow the manufacturer's instructions for installation, care, and calibration.
- Availability of InSAR data is improving and will increase as programs are developed. This method requires expertise in analysis of the raw data and will likely be made available as an interpretative report for specific regions.

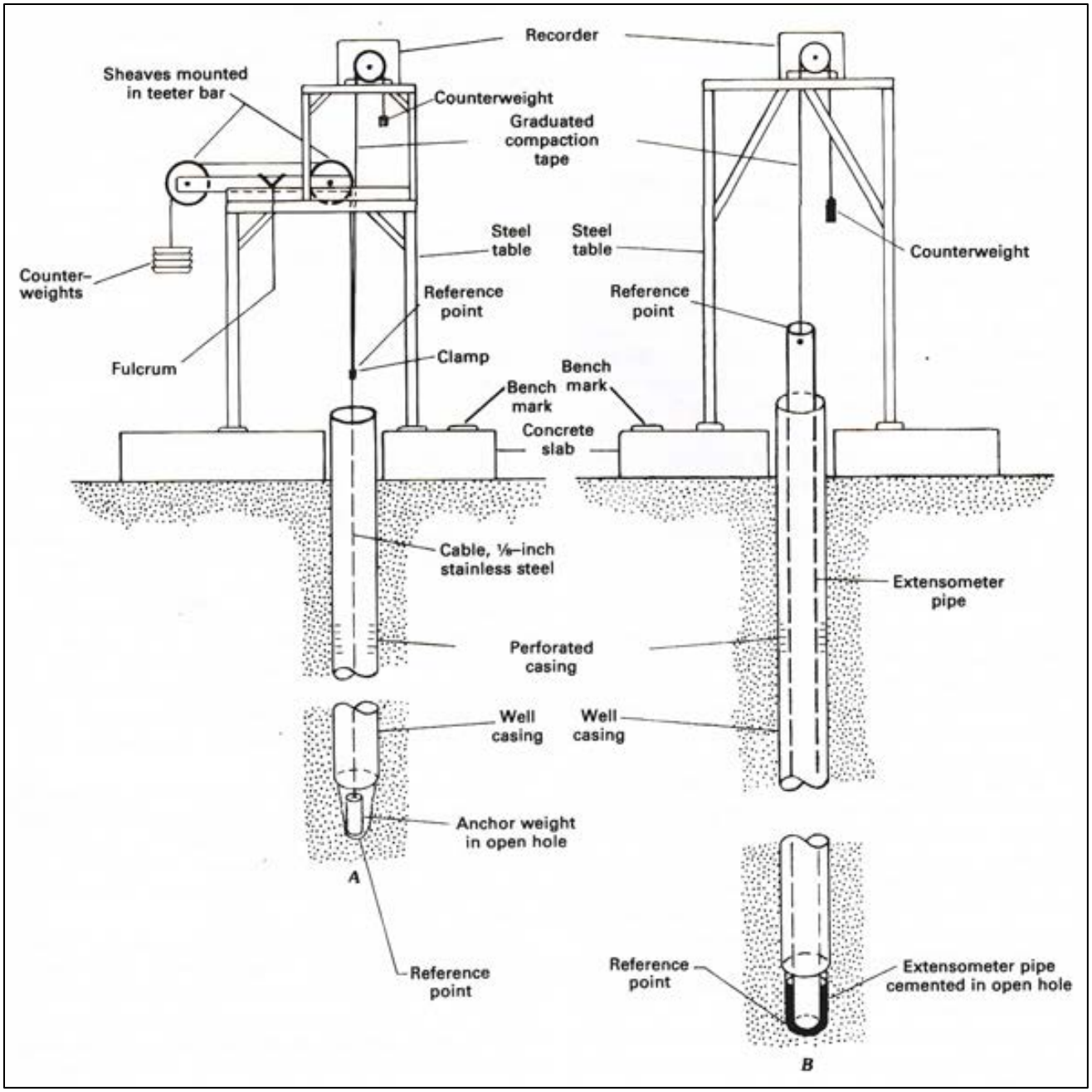


Figure 7 – Simplified Extensometer Diagram

6. KEY DEFINITIONS

The key definitions and sections related to Groundwater Monitoring Protocols, Standards, and Sites outlined in applicable SGMA code and regulations are provided below for reference.

Groundwater Sustainability Plan Regulations (California Code of Regulations §351)

- §351(h) "Best available science" refers to the use of sufficient and credible information and data, specific to the decision being made and the time frame available for making that decision, that is consistent with scientific and engineering professional standards of practice.
- §351(i) "Best management practice" refers to a practice, or combination of practices, that are designed to achieve sustainable groundwater management and have been determined to be technologically and economically effective, practicable, and based on best available science.

Monitoring Protocols Reference

§352.2. Monitoring Protocols

Each Plan shall include monitoring protocols adopted by the Agency for data collection and management, as follows:

(a) Monitoring protocols shall be developed according to best management practices.

(b) The Agency may rely on monitoring protocols included as part of the best management practices developed by the Department, or may adopt similar monitoring protocols that will yield comparable data.

(c) Monitoring protocols shall be reviewed at least every five years as part of the periodic evaluation of the Plan, and modified as necessary.

SGMA Reference

§10727.2. Required Plan Elements

(f) Monitoring protocols that are designed to detect changes in groundwater levels, groundwater quality, inelastic surface subsidence for basins for which subsidence has been identified as a potential problem, and flow and quality of surface water that directly affect groundwater levels or quality or are caused by groundwater extraction in the basin. The monitoring protocols shall be designed to generate information that promotes efficient and effective groundwater management.

7. RELATED MATERIALS

CASE STUDIES

Luhdorff & Scalmanini Consulting Engineers, J.W. Borchers, M. Carpenter. 2014. *Land Subsidence from Groundwater Use in California*. Full Report of Findings prepared for California Water Foundation. April 2014. 151 p. http://ca.water.usgs.gov/land_subsidence/california-subsidence-cause-effect.html

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Poland, J.F., B.E. Lofgren, R.L. Ireland, and R.G. Pugh, 1975. *Land subsidence in the San Joaquin Valley, California, as of 1972*; US Geological Survey Professional Paper 437-H; prepared in cooperation with the California Department of Water Resources, 87 p.
http://pubs.usgs.gov/pp/0437h/report.pdf

Sneed, M., J.T. Brandt, and M. Solt, 2013. *Land subsidence along the Delta-Mendota Canal in the northern part of the San Joaquin Valley, California, 2003-10*; USGS Scientific Investigations Report 2013-5142, prepared in cooperation with U.S. Bureau of Reclamation and the San Luis and Delta-Mendota Water Authority.
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STANDARDS

California Department of Transportation, various dates. *Caltrans Surveys Manual*. http://www.dot.ca.gov/hq/row/landsurveys/SurveysManual/Manual_TOC.html

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Holmes, R.R. Jr., P.J. Terrio, M.A. Harris, and P.C. Mills, 2001. *Introduction to field methods for hydrologic and environmental studies*, open-file report 01-50, USGS, Urbana, Illinois, 241 p. https://pubs.er.usgs.gov/publication/ofr0150

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https://www.epa.gov/sites/production/files/2015-06/documents/Groundwater-Sampling.pdf

Wilde, F.D., January 2005. *Preparations for water sampling (ver. 2.0)*: U.S. Geological Survey Techniques of Water-Resources Investigations, book 9, chap. A1, http://water.usgs.gov/owq/FieldManual/compiled/NFM_complete.pdf

ONLINE RESOURCES

Online System for Well Completion Reports (OSWCR). California Department of Water Resources. http://water.ca.gov/oswcr/index.cfm

Measuring Land Subsidence web page. U.S. Geological Survey. http://ca.water.usgs.gov/land_subsidence/california-subsidence-measuring.html

USGS Global Positioning Application and Practice web page. U.S. Geological Survey. http://water.usgs.gov/osw/gps/

California Statewide Groundwater Elevation Monitoring (CASGEM) Program

Procedures for Monitoring Entity Reporting

December 2010

Department of Water Resources (DWR) will use the internet as the primary communication tool to notify interested parties and groundwater Monitoring Entities of the status of the CASGEM program on an ongoing basis. Information will be posted at the following website: http://www.water.ca.gov/groundwater/casgem

In addition to the above-referenced website, DWR will distribute information via email. In order to be placed on the CASGEM contact list, please register your contact information at the following website: http://www.water.ca.gov/groundwater/casgem/register/

For questions about the Reporting Procedures, or other technical issues, please contact:

DWR Headquarters
Mary Scruggs
901 P Street
Sacramento, CA 95814
(916) 654-1324
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INTRODUCTION TO CASGEM PROGRAM

In November 2009 Part 2.11 (Groundwater Monitoring) was added to Division 6 of the Water Code by Senate Bill 6 (7th Extraordinary Session) (SB 6), a copy of which is included in the Appendix. (All statutory references in this document are to the Water Code.) The new law directs that groundwater elevations in all basins and subbasins in California be regularly and systematically monitored, preferably by local entities, with the goal of demonstrating seasonal and long-term trends in groundwater elevations. The Department of Water Resources (DWR) is directed to make the resulting information readily and widely available.

DWR developed the California Statewide Groundwater Elevation Monitoring (CASGEM) program in accordance with SB 6 to establish a permanent, locally-managed system to monitor groundwater elevation in California's alluvial groundwater basins and subbasins identified in DWR Bulletin 118. The CASGEM program will rely and build on the many, established local long-term groundwater monitoring and management programs. DWR's role is to coordinate information collected locally through the CASGEM program and to maintain the collected groundwater elevation data in a readily and widely available public database. DWR will also continue measuring its current network of groundwater monitoring wells as funding allows.

The goals of the CASGEM program are to:

- Establish procedures for notification and data reporting by prospective Monitoring Entities (this document)
- Verify local Monitoring Entities in accordance with the Water Code
- Develop an interface for local entities to enter data into a database compatible with DWR's Water Data Library
- Maintain the database and make it easily accessible to the public and local entities for use in water supply planning and management

If no local entities volunteer to monitor groundwater elevations in a basin or part of a basin, DWR may be required to develop a monitoring program for that part. If DWR takes over monitoring of a basin, certain entities in the basin may not be eligible for water grants or loans administered by the state.

During August and September 2010, DWR held 10 workshops throughout the state in cooperation with Association of California Water Agencies (ACWA) to introduce the CASGEM program and explain the purpose and process of the program to local agencies and stakeholders. A copy of the DWR presentation is available on the CASGEM website (http://www.water.ca.gov/groundwater/casgem). A summary of

Frequently Asked Questions (FAQs), primarily from the workshops, is provided in on the CASGEM website.

DWR's main role is to administer the CASGEM program through providing public outreach; creating and maintaining the CASGEM website and online data submittal system; and, supporting local entities through the process of becoming a Monitoring Entity and preparing Monitoring Plans. DWR will use the CASGEM website to provide up-to-date information on the program. The website will also be the access point for the online notification and data submittal systems.

Staff from the DWR regional offices will be available to assist potential Monitoring Entities with the online notification submittal process. After receiving notification from prospective Monitoring Entities, DWR will review them for completeness, verify the authority of the applying entity under Section 10927, and check for overlapping monitoring areas. DWR will advise each party on the status of their notification within three months of submittal and will work with entities to address any deficiencies in their submittals.

DWR encourages local agencies and groups to collaborate to determine who will serve as the Monitoring Entity for the area. However, if more than one party seeks to become the Monitoring Entity for the same area and overlapping monitoring area issues cannot be resolved locally, DWR will make a final determination of the Monitoring Entity for the area. DWR's determinations will consider the order in which entities are identified in Section 10927 and other factors as described in the Water Code.

DWR will post the selection of each Monitoring Entity and its monitoring area on the CASGEM website and will notify each Monitoring Entity in writing. A map-based interface will be available for users to identify the Monitoring Entity for each basin in the state.

DWR will prepare the first status report on the CASGEM program for the Governor and Legislature by January 1, 2012. In this initial report, DWR will report on the extent of groundwater elevation monitoring within each basin. This report will include a statewide prioritization of basins based on water supply, water demand, and other factors identified in Section 10933. DWR will explore options for basins without identified monitoring, with a focus on identifying options for local monitoring. Future status reports on the CASGEM program will be prepared by DWR in years ending in 5 or 0.

PURPOSE OF MONITORING ENTITY REPORTING PROCEDURES

The purpose of these procedures is to introduce the CASGEM program and its components as the framework for implementing SB 6, with particular emphasis on the initial step of establishing Monitoring Entities for each Bulletin 118 basin in the state.

A summary of the requirements of local entities to comply with the CASGEM program is presented in Table 1.

Table 1. Quick Guide for Local Entities

- Determine whether you qualify as a potential Monitoring Entity (see "Requirements to become Monitoring Entity" on pages 9-13)
- Identify the basins within your area (see Bulletin 118)
- Collaborate with other local entities to identify and choose the prospective Monitoring Entity (or Entities) for your area
- Submit Monitoring Entity notification to DWR through CASGEM website (http://www.water.ca.gov/groundwater/casgem) on or before January 1, 2011
- DWR will review the notification and advise the prospective Monitoring Entity of the status of the notification within 3 months of submittal
- Work with staff of the DWR regional office to address any deficiencies in the submittal
- If more than one party seeks to become the Monitoring Entity for the same area, work with staff of the DWR regional office to resolve
- Check the CASGEM website for a listing of the selected Monitoring Entities
- Develop and submit a Monitoring Plan to DWR through the CASGEM website
- Staff from the DWR regional office are available to assist with the Monitoring Plan and to recommend changes
- Submit monitoring data to DWR through the CASGEM website on or before January 1, 2012

CASGEM SCHEDULE



A timetable for implementing the CASGEM schedule is shown above.

MONITORING ENTITIES

The CASGEM program establishes the framework for collaboration between local monitoring parties and DWR to collect groundwater elevation data throughout the state's 515 basins as defined in Bulletin 118. A Monitoring Entity is a local agency or group that voluntarily takes responsibility for conducting or coordinating groundwater elevation monitoring and reporting for all or part of a groundwater basin.

To determine if you are within a Bulletin 118 basin, please refer to maps and descriptions in Bulletin 118, available online at: http://www.water.ca.gov/groundwater/bulletin118/gwbasin_maps_descriptions.cfm. Geographic Information System (GIS) shapefiles of the basins are also available at this website. DWR can assist in identifying other potential local monitoring parties in each basin.

ROLES AND RESPONSIBILITIES OF MONITORING ENTITIES

Through the CASGEM program, local entities with appropriate authority may notify DWR of their intent to be a Monitoring Entity. Monitoring Entities will have specific responsibilities, including:

- Coordinate with DWR to establish a Monitoring Plan
- Conduct or coordinate the regular and systematic monitoring of groundwater elevations as specified in the Monitoring Plan
- Submit monitoring data to DWR in a timely manner

A Monitoring Entity can perform monitoring for any number of basins or portions thereof, but no area can have more than one Monitoring Entity. While the Monitoring Entity is responsible for compiling the data and submitting it to DWR for a particular area, the actual measurements can be taken by any number of agencies that would work under the direction of the Monitoring Entity. (Cooperating agencies would submit data to the Monitoring Entity, not to DWR.) Thus, assuming there are no overlapping areas or gaps in basin coverage for a given area, there are three possible basic scenarios, illustrated in Figure 1:

- A single Monitoring Entity that collects and reports groundwater elevation data for the entire basin (Scenario A);
- Multiple Monitoring Entities that collect and report groundwater elevation data for their portion of the basin (Scenario B); or

- An umbrella Monitoring Entity that coordinates and reports groundwater elevation data collected by multiple agencies within the basin (Scenario C).

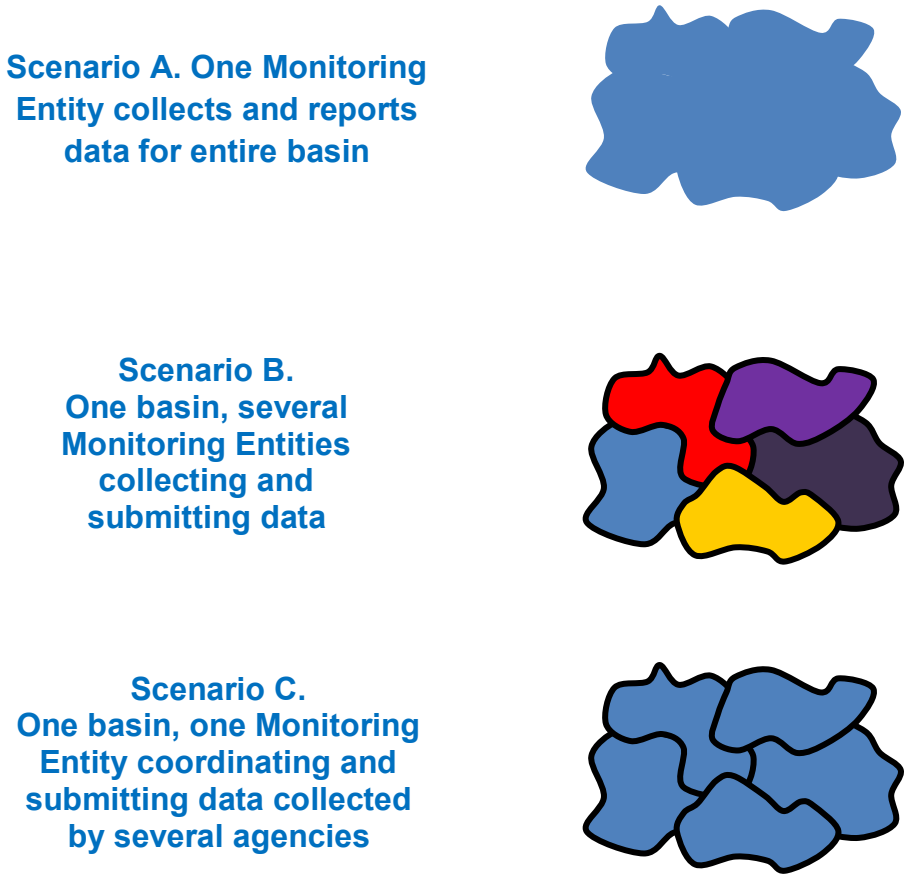


Figure 1. Illustration of possible Monitoring Entity scenarios for a monitored basin.

DWR currently monitors water elevations in about 4,000 wells statewide and cooperates with local and federal agencies to monitor roughly an additional 6,000 wells. DWR plans to continue monitoring groundwater elevations, contingent upon available funding. In some basins DWR currently does most, if not all, of the water-elevation monitoring. In these basins, a local entity still needs to notify DWR of their intent to become the Monitoring Entity. The Monitoring Entity must determine which DWR wells will be included in their CASGEM monitoring network. As long as DWR continues its monitoring program, the department will transmit its groundwater elevation data to the CASGEM system. However, if DWR is unable to continue monitoring for any reason, the Monitoring Entity will be required to re-evaluate its monitoring network to determine which wells to retain in its monitoring network.

REQUIREMENTS TO BECOME MONITORING ENTITY

Section 10927 of the Water Code defines the types of entities that may assume responsibility for monitoring and reporting groundwater elevations as part of the CASGEM program.

A summary list of eligible entities, in order of priority, and notification requirements for each entity is provided below:

1. A **watermaster or water management engineer** appointed by a court or pursuant to statute to administer a final judgment determining rights to groundwater [Section 10927(a)].
   Notification Requirements:
   - Name of Agency
   - Agency Contact Name
   - Address
   - Telephone Number
   - Email Address
   - Any other relevant contact information
   - Authority (as listed in Section 10927)
   - Name and number of basin to be monitored (from Bulletin 118)
   - Map and shapefile showing area to be monitored (Shapefiles do not need to be submitted by the initial January 1, 2011 notification date; Regional Offices can provide assistance to potential Monitoring Entities with shapefiles.)
   - Statement that the entity will comply with the requirements of Water Code Part 2.11
   - Additional information deemed necessary by DWR to identify monitoring area or qualifications of the Monitoring Entity

2. A **groundwater management agency** with statutory authority to manage groundwater pursuant to its principal act that is monitoring groundwater elevations in all or a part of a groundwater basin on or before January 1, 2010 [Section 10927(b)(1)].
   Notification Requirements:
   - Name of Agency
   - Agency Contact Name
   - Address
   - Telephone Number
   - Email Address
   - Any other relevant contact information
   - Authority (as listed in Section 10927)

- Name and number of basin to be monitored (from Bulletin 118)
- Map and shapefile showing area to be monitored (Shapefiles do not need to be submitted by the initial January 1, 2011 notification date; Regional Offices can provide assistance to potential Monitoring Entities with shapefiles.)
- Statement that the entity will comply with the requirements of Water Code Part 2.11
- Additional information deemed necessary by DWR to identify monitoring area or qualifications of the Monitoring Entity

3. A **water replenishment district** established pursuant to Water Code Division 18 (commencing with Section 60000). This part does not expand or otherwise affect the authority of a water replenishment district relating to monitoring elevations [Section 10927(b)(2)].

   Notification Requirements:
   - Name of Agency
   - Agency Contact Name
   - Address
   - Telephone Number
   - Email Address
   - Any other relevant contact information
   - Authority (as listed in Section 10927)
   - Name and number of basin to be monitored (from Bulletin 118)
   - Map and shapefile showing area to be monitored (Shapefiles do not need to be submitted by the initial January 1, 2011 notification date; Regional Offices can provide assistance to potential Monitoring Entities with shapefiles.)
   - Statement that the entity will comply with the requirements of Water Code Part 2.11
   - Additional information deemed necessary by DWR to identify monitoring area or qualifications of the Monitoring Entity

4. A **local agency that is managing all or part of a groundwater basin pursuant to Water Code Part 2.75** (commencing with Section 10750) and that was monitoring groundwater elevations in all or part of a groundwater basin on or before January 1, 2010, or a local agency or county that is managing all or part of a groundwater basin pursuant to any other legally enforceable groundwater management plan with provisions that are substantively similar to those described in that part and that was monitoring groundwater elevations in all or a part of a groundwater basin on or before January 1, 2010 [Section 10927(c)].

Notification Requirements:

- Name of Agency
- Agency Contact Name
- Address
- Telephone Number
- Email Address
- Any other relevant contact information
- Authority (as listed in Section 10927)
- Name and number of basin to be monitored (from Bulletin 118)
- Map and shapefile showing area to be monitored (Shapefiles do not need to be submitted by the initial January 1, 2011 notification date; Regional Offices can provide assistance to potential Monitoring Entities with shapefiles.)
- Statement that the entity will comply with the requirements of Water Code Part 2.11
- Copy of current groundwater management plan
- Statement describing the ability or qualifications of the entity to conduct the groundwater monitoring functions required
- Additional information deemed necessary by DWR to identify monitoring area or qualifications of the Monitoring Entity

5. A **local agency that is managing all or part of a groundwater basin pursuant to an integrated regional water management plan** prepared pursuant to Water Code Part 2.2 (commencing with Section 10530) that includes a groundwater management component that complies with the requirements of Section 10753.7 [Section 10927(d)].

   Notification Requirements:

   - Name of Agency
   - Agency Contact Name
   - Address
   - Telephone Number
   - Email Address
   - Any other relevant contact information
   - Authority (as listed in Section 10927)
   - Name and number of basin to be monitored (from Bulletin 118)
   - Map and shapefile showing area to be monitored (Shapefiles do not need to be submitted by the initial January 1, 2011 notification date; Regional Offices can provide assistance to potential Monitoring Entities with shapefiles.)
   - Statement that the entity will comply with the requirements of Water Code Part 2.11
   - Copy of current groundwater component of integrated regional water management plan
   - Statement describing the ability or qualifications of the entity to conduct the groundwater monitoring functions required

- Additional information deemed necessary by DWR to identify monitoring area or qualifications of the Monitoring Entity

6. A **county** that is not managing all or a part of a groundwater basin pursuant to a legally enforceable groundwater management plan with provisions that are substantively similar to those described in Water Code Part 2.75 (commencing with Section 10750) [Section 10927(e)].
   Notification Requirements:
   - Name of County
   - County Contact Name
   - Address
   - Telephone Number
   - Email Address
   - Any other relevant contact information
   - Authority (as listed in Section 10927)
   - Name and number of basin to be monitored (from Bulletin 118)
   - Map and shapefile showing area to be monitored (Shapefiles do not need to be submitted by the initial January 1, 2011 notification date; Regional Offices can provide assistance to potential Monitoring Entities with shapefiles.)
   - Statement that the entity will comply with the requirements of Water Code Part 2.11
   - Statement describing the ability or qualifications of the entity to conduct the groundwater monitoring functions required
   - Additional information deemed necessary by DWR to identify monitoring area or qualifications of the Monitoring Entity

7. A **voluntary cooperative groundwater monitoring association** formed pursuant to Section 10935 [Section 10927(f)]. As described in the Water Code Section 10935, the voluntary associations may be established by contract, a joint powers agreement, a memorandum of agreement, or other form of agreement deemed acceptable by DWR, so long as it contains: the names of the participants; the boundaries of the area covered by the agreement; the name or names of the parties responsible for meeting the requirements; the method of recovering the costs associated with meeting the requirements; and other provisions that may be required by DWR. Entities seeking to form a voluntary association should notify DWR, which will work cooperatively with the interested parties to facilitate the formation of the association.

Notification Requirements:

- Name of Association
- Association Contact Name
- Address
- Telephone Number
- Email Address
- Any other relevant contact information
- Authority (as listed in Section 10927)
- Name and number of basin to be monitored (from Bulletin 118)
- Map and shapefile showing area to be monitored (Shapefiles do not need to be submitted by the initial January 1, 2011 notification date; Regional Offices can provide assistance to potential Monitoring Entities with shapefiles.)
- Statement that the entity will comply with the requirements of Water Code Part 2.11
- Statement describing the ability or qualifications of the entity to conduct the groundwater monitoring functions required
- Statement of intent to meet the association formation requirements described in Section 10935
- Additional information deemed necessary by DWR to identify monitoring area or qualifications of the Monitoring Entity

Local agencies are encouraged to coordinate among themselves to determine the proposed Monitoring Entity or Entities that best suits their area. The resulting interested entity (or entities) should notify DWR of its intent to become a groundwater Monitoring Entity for one or more basins, or portions thereof by the January 1, 2011 deadline. Certain basic information is required for notification, including contact information and additional details depending on the authority of the entity desiring to monitor groundwater (Section 10928), as listed above. This notification information will be submitted to DWR using an online system that will be available by mid-December 2010.

MONITORING PLANS

Monitoring Entities will each develop a Monitoring Plan that includes the following sections: Monitoring Sites and Timing, Field Methods, and Data Reporting. Monitoring Plans should be completed and submitted to DWR by summer 2011. Staff from the DWR regional offices will be available to assist Monitoring Entities with the development of Monitoring Plans, if needed. In determining what information should be reported to DWR, the department will defer to existing monitoring programs if those programs result in information that demonstrates seasonal (annual high and low groundwater elevations) and long-term trends in groundwater elevations. Staff from the DWR regional offices will assist Monitoring Entities to address any gaps in basin coverage

(see below) and other monitoring issues and may make recommendations for the location of additional wells. However, the department has no authority to require a Monitoring Entity to install additional wells unless funds are provided for that purpose. Once a Monitoring Plan is established with DWR, Monitoring Entities should notify DWR of any changes to the plan.

Key Components of Monitoring Plans

Submit to DWR by summer 2011

- Monitoring Sites and Timing
  - Well Network Design
  - Selected wells (current)
  - Planned (future) wells
  - Frequency to capture seasonal highs and lows
  - Map and shapefile of monitoring area and well locations

Field Methods for groundwater monitoring

- Methods for measuring
  - Reference Point
  - Static water level
  - Depth to water
  - Standardized form for data collection

Data Reporting

- Online data submittal, minimum July & January each year

Data Gaps

A data gap refers to a basin or portion of a basin that is not included in any of the Monitoring Plans submitted to DWR. This is essentially an area that lacks the density of monitoring wells that would allow seasonal and long-term trends in groundwater elevations to be determined for the basin, subbasin, or a portion thereof. Among the 515 basins defined by Bulletin 118, data gaps may exist for a variety of reasons, including a lack of suitable monitoring wells, lack of groundwater use, access issues, and jurisdictional issues, among others.

If no local entity is able and/or willing to fill a data gap, the department may be required to perform groundwater monitoring functions. If DWR performs this monitoring, local agencies and the county that have the authority under Section 10927 to monitor the area of the data gap would be potentially ineligible for a water grant or loan awarded or administered by the state. The Monitoring Entity or entities with the authority to monitor the area of the data gap should provide detailed information regarding the nature of and reason for the data gap so that DWR may include such information in the prioritization of groundwater basins and subbasins as appropriate.

Agencies and counties that are eligible to be designated Monitoring Entities but choose not participate in the CASGEM program will not lose their state water grant and loan eligibility if their entire service area qualifies as a disadvantaged community (Water Code Section 10933.7(b)). It will be the responsibility of the local agency or county applying for a state water grant or loan to demonstrate their disadvantaged community status at the time they are applying for the grant or loan.

MONITORING SITES AND TIMING

The Monitoring Plan will identify the wells to be monitored and the frequency with which they will be monitored. The Monitoring Plan should explain how proposed monitoring will be sufficient to demonstrate the seasonal and long-term groundwater elevation trends in the monitored area. The density of monitoring locations will depend on the complexity of the basin.

Because of security concerns, the California Department of Public Health (DPH) routinely limits the disclosure of detailed public water supply well location information. Pursuant to Water Code Section 10931, the DWR is required to collaborate with DPH to ensure that the information reported to the CASGEM program will not result in the inappropriate disclosure of information of concern to DPH. At this time, DWR has reached no agreement with DPH regarding the appropriate treatment of public water supply well data. As a result, CASGEM does not currently plan to use such well information in its database.

The Monitoring Plan should contain a table identifying the wells to be monitored and the timing of that monitoring. Because the law specifies that information should demonstrate seasonal and long-term trends in groundwater elevations, at a minimum monitoring should be conducted at each location for the yearly high and low for the basin. The yearly high and low groundwater elevations typically occur in spring and fall, but this may vary from basin to basin. It is very important that the timing of all the measurements in the basin is coordinated. Rationale for selection of the timing (seasonal highs and lows) should be included in the Monitoring Plan.

The information on the monitoring sites and timing to be submitted in the online system should include:

- Well identification number
- State well number
- Location (decimal latitude and longitude, North American Datum (NAD) 83)
- Reference point elevation (feet, North American Vertical Datum (NAVD) 88)
- Land surface datum (feet, NAVD88)
- Map and shapefile with monitoring locations, Bulletin 118 groundwater basin boundary, and boundary of monitoring area
- Frequency and timing of measurements

FIELD METHODS

The consistent and documented collection of groundwater elevation data is important for ensuring that the data can be used across the state, regardless of the Monitoring Entity. The field methods should meet a common set of basic requirements; however, the methods do not have to be exactly the same. Many entities already have in place monitoring efforts that are successful in meeting local needs and that can meet the needs for this program, either as-is or with the incorporation of individual components. The CASGEM program wishes to maintain, to the greatest extent possible, the procedures of high-quality local groundwater elevation monitoring programs, so long as they meet the overall program goals and policies. Of particular concern are the following basic requirements:

- Method(s) to establish the Reference Point, including step-by-step instructions
- Method(s) to ensure static groundwater elevation
- Method(s) to measure depth to water, including step-by-step instructions
- Method(s) and form(s) for recording measurements

It is the responsibility of each Monitoring Entity to develop and implement monitoring protocols that are appropriate to local groundwater basin conditions, protect the water quality of its monitoring wells, and maintain the quality of the data that it submits to the CASGEM Program. DWR has developed field guidelines (Department of Water Resources Groundwater Elevation Monitoring Guidelines) based on a review of existing field methods from DWR and other organizations, which is available on the CASGEM website. Monitoring Entities are welcome to refer to these guidelines when developing field methods for their own Monitoring Plans. However, the DWR guidelines are for internal use in the event that the Department is required to perform groundwater monitoring functions pursuant to Section 10933.5 and are not binding on any other agency. The core of the CASGEM program will rely and build on the many, established local long-term groundwater monitoring and management programs. The department will defer to existing monitoring programs that result in information that demonstrates seasonal and long-term trends in groundwater elevations.

DATA REPORTING

DWR will develop an online data submittal system for Monitoring Entities to submit their groundwater elevation data. Several methods of submitting data will be available, such as direct online data entry, or upload of data files for batch entry. Initial groundwater elevation data should be submitted to DWR by January 1, 2012. Thereafter, data

should be submitted as soon as possible after collection, but no later than January 1st and July 1st of each year, at the minimum. Historical data can also be submitted via the DWR data system to aid in data interpretation. All submitted data will be available to the public, except for confidential data.

Each groundwater elevation data measurement submitted to the online system should include:

- Well identification number
- Measurement date
- Reference point and land surface elevation
- Depth to water
- Method of measuring water depth
- Measurement quality codes

The Monitoring Entity information, well information, and groundwater elevation information is to be provided by the Monitoring Entity. Items labeled as required must be submitted to DWR to report groundwater elevations. Items labeled as recommended should be submitted to DWR if they are available, as they assist in fully evaluating the quality of measurements. DWR will provide standard form(s) for Monitoring Entities to submit groundwater elevation data online. However, if Monitoring Entities cannot use the standard form(s) or provide the data elements listed below, DWR will work cooperatively with Monitoring Entities to develop alternate methods of submitting data.

Entity Information

All entities assuming groundwater monitoring functions as delineated in Section 10927 (a)-(f) are required to submit the following information:

- Monitoring Entity's name, address, telephone number, contact person name and email address, and any other relevant contact information (Section 10928 (a) (1), 10928 (b) (1))
- Name, address, telephone number, email address and any other relevant contact information for entities collecting data that is submitted by a designated submitting entity (Monitoring Entity)
- Groundwater basins being monitored
    - Identify entire basins monitored
    - Identify partial basins monitored

Well Information

The following information about each well is required for the CASGEM online system:

- Unique well identification number. Agencies may use an existing State Well Number, an existing local well designation, or develop their own identification name, using the following protocol:
    - Agency name, abbreviation, or acronym followed by a sequential number (e.g., SGA 01)
    - Groundwater basin – followed by a sequential number (e.g., Llagas 03)
    - Geographic name – followed by a sequential number (e.g., Yolo 12)
    - Well names should be 15 characters long or less
    - Avoid using owner/business names or specific locational information for privacy and security
- Decimal latitude/longitude coordinates of well, using horizontal datum NAD83, and the method of determining coordinates (Actual coordinates are preferred; however, Monitoring Entities may submit approximate locations, as needed, to protect the privacy of well owners. For example, to protect the privacy of a well owner, a Monitoring Entity may submit well coordinate locations that are only within 1000-feet of the actual well location.)
- Groundwater basin or sub-basin
- Reference point elevation of the well (feet) using NAVD88 vertical datum
- Elevation of land surface datum at the well (feet) using NAVD88 vertical datum
- Use of well (e.g., dedicated monitoring, irrigation, domestic, etc)
- Well completion type (e.g. single well, nested, or multi-completion wells)
- Depth of screened interval(s) and total well depth of well, if available (feet)
- Well Completion Report number (DWR Form 188), if available

The following information about each well is recommended for the CASGEM online system:

- State Well Number – assigned by DWR in most cases
- Method by which land surface elevation was determined (for example, topographic map, GPS, etc.)
- Written description of location of well, including distance from nearby landmarks and location of reference point in relation to well appurtenances (DWR Form 429)
- Well information comments

Groundwater Elevation Information

The following information for each groundwater elevation measurement is required for the CASGEM online system:

- Well identification number (see Well Information, above)
- Measurement date
- Reference point elevation of the well (feet) using NAVD88 vertical datum
- Elevation of land surface datum at the well (feet) using NAVD88 vertical datum
- Depth to water below reference point (feet) (unless no measurement was taken)
- Method of measuring water depth
- Measurement Quality Codes

    - If no measurement is taken, a specified “no measurement” code, must be recorded. Standard codes will be provided by the online system. If a measurement is taken, a “no measurement” code is not recorded.)
    - If the quality of a measurement is uncertain, a “questionable measurement” code can be recorded. Standard codes will be provided by the online system. If no measurement is taken, a “questionable measurement” code is not recorded.)
- Measuring agency identification

The following information for each groundwater elevation measurement is recommended for the CASGEM online system:

- Measurement time (PST/PDT with military time/24 hour format)
- Comments about measurement, if applicable

Groundwater elevation data shall be submitted electronically to DWR’s online system. DWR will develop electronic data transmittal (EDT) alternatives and data standards to permit bulk data transfer and assist Monitoring Entities in EDT reporting to DWR. As stated above, if Monitoring Entities cannot use the standard form(s) or provide the necessary groundwater elevation data elements, DWR will work cooperatively with Monitoring Entities to develop alternate methods of submitting data.

The CASGEM online data submittal system will be compatible with the Water Data Library (WDL) (http://www.water.ca.gov/waterdatalibrary/), DWR’s existing groundwater elevation database. The CASGEM system will include data reporting options similar to those in WDL, such as hydrographs, seasonal contour data, and data downloads. The combined accessibility of the WDL and the CASGEM system will be a significant resource for local agencies in making sound groundwater management decisions.

REFERENCES

California Departement of Water Resources. (2003). *California's Groundwater, Bulletin 118-03.*

California Department of Water Resources. (2009). *California Water Plan Update 2009, Bulletin 160-09.*

APPENDIX – SENATE BILL 6 (7TH EXTRAORDINARY SESSION) - GROUNDWATER MONITORING

Senate Bill No. 6

CHAPTER 1

An act to add Part 2.11 (commencing with Section 10920) to Division 6 of, and to repeal and add Section 12924 of, the Water Code, relating to groundwater.

[Approved by Governor November 6, 2009. Filed with Secretary of State November 6, 2009.]

Legislative Counsel's Digest

SB 6, Steinberg. Groundwater.

(1) Existing law authorizes a local agency whose service area includes a groundwater basin that is not subject to groundwater management to adopt and implement a groundwater management plan pursuant to certain provisions of law. Existing law requires a groundwater management plan to include certain components to qualify as a plan for the purposes of those provisions, including a provision that establishes funding requirements for the construction of certain groundwater projects.

This bill would establish a groundwater monitoring program pursuant to which specified entities, in accordance with prescribed procedures, may propose to be designated by the Department of Water Resources as groundwater monitoring entities, as defined, for the purposes of monitoring and reporting with regard to groundwater elevations in all or part of a basin or subbasin, as defined. The bill would require the department to work cooperatively with each monitoring entity to determine the manner in which groundwater elevation information should be reported to the department. The bill would authorize the department to make recommendations for improving an existing monitoring program, and to require additional monitoring wells under certain circumstances. Under certain circumstances, the department would be required to perform groundwater monitoring functions. In that event, prescribed entities with authority to assume groundwater monitoring functions with regard to a basin or subbasin for which the department has assumed those functions would not be eligible for a water grant or loan awarded or administered by the state.

(2) Existing law requires the department to conduct an investigation of the state's groundwater basins and to report its findings to the Governor and the Legislature not later than January 1, 1980.

This bill would repeal that provision. The department would be required to conduct an investigation of the state's groundwater basins and to report its findings to the Governor and the Legislature not later than January 1, 2012, and thereafter in years ending in 5 or 0.

(3) The bill would take effect only if SB 1 and SB 7 of the 2009–10 7th Extraordinary Session of the Legislature are enacted and become effective.

The people of the State of California do enact as follows:

SECTION 1. Part 2.11 (commencing with Section 10920) is added to Division 6 of the Water Code, to read:

PART 2.11. GROUNDWATER MONITORING

Chapter 1. General Provisions

10920. (a) It is the intent of the Legislature that on or before January 1, 2012, groundwater elevations in all groundwater basins and subbasins be regularly and systematically monitored locally and that the resulting groundwater information be made readily and widely available.

(b) It is further the intent of the Legislature that the department continue to maintain its current network of monitoring wells, including groundwater elevation and groundwater quality monitoring wells, and that the department continue to coordinate monitoring with local entities.

10921. This part does not require the monitoring of groundwater elevations in an area that is not within a basin or subbasin.

10922. This part does not expand or otherwise affect the powers or duties of the department relating to groundwater beyond those expressly granted by this part.

Chapter 2. Definitions

10925. Unless the context otherwise requires, the definitions set forth in this section govern the construction of this part.

(a) “Basin” or “subbasin” means a groundwater basin or subbasin identified and defined in the department’s Bulletin No. 118.

(b) “Bulletin No. 118” means the department’s report entitled “California’s Groundwater: Bulletin 118” updated in 2003, or as it may be subsequently updated or revised in accordance with Section 12924.

(c) “Monitoring entity” means a party conducting or coordinating the monitoring of groundwater elevations pursuant to this part.

(d) “Monitoring functions” and “groundwater monitoring functions” means the monitoring of groundwater elevations, the reporting of those elevations to the department, and other related actions required by this part.

(e) “Monitoring groundwater elevations” means monitoring groundwater elevations, coordinating the monitoring of groundwater elevations, or both.

(f) “Voluntary cooperative groundwater monitoring association” means an association formed for the purposes of monitoring groundwater elevations pursuant to Section 10935.

Chapter 3. Groundwater Monitoring Program

10927. Any of the following entities may assume responsibility for monitoring and reporting groundwater elevations in all or a part of a basin or subbasin in accordance with this part:

(a) A watermaster or water management engineer appointed by a court or pursuant to statute to administer a final judgment determining rights to groundwater.

(b) (1) A groundwater management agency with statutory authority to manage groundwater pursuant to its principal act that is monitoring groundwater elevations in all or a part of a groundwater basin or subbasin on or before January 1, 2010.

(2) A water replenishment district established pursuant to Division 18 (commencing with Section 60000). This part does not expand or otherwise affect the authority of a water replenishment district relating to monitoring groundwater elevations.

(c) A local agency that is managing all or part of a groundwater basin or subbasin pursuant to Part 2.75 (commencing with Section 10750) and that was monitoring

groundwater elevations in all or a part of a groundwater basin or subbasin on or before January 1, 2010, or a local agency or county that is managing all or part of a groundwater basin or subbasin pursuant to any other legally enforceable groundwater management plan with provisions that are substantively similar to those described in that part and that was monitoring groundwater elevations in all or a part of a groundwater basin or subbasin on or before January 1, 2010.

(d) A local agency that is managing all or part of a groundwater basin or subbasin pursuant to an integrated regional water management plan prepared pursuant to Part 2.2 (commencing with Section 10530) that includes a groundwater management component that complies with the requirements of Section 10753.7.

(e) A county that is not managing all or a part of a groundwater basin or subbasin pursuant to a legally enforceable groundwater management plan with provisions that are substantively similar to those described in Part 2.75 (commencing with Section 10750).

(f) A voluntary cooperative groundwater monitoring association formed pursuant to Section 10935.

10928. (a) Any entity described in subdivision (a) or (b) of Section 10927 that seeks to assume groundwater monitoring functions in accordance with this part shall notify the department, in writing, on or before January 1, 2011. The notification shall include all of the following information:

(1) The entity's name, address, telephone number, and any other relevant contact information.

(2) The specific authority described in Section 10927 pursuant to which the entity qualifies to assume the groundwater monitoring functions.

(3) A map showing the area for which the entity is requesting to perform the groundwater monitoring functions.

(4) A statement that the entity will comply with all of the requirements of this part.

(b) Any entity described in subdivision (c), (d), (e), or (f) of Section 10927 that seeks to assume groundwater monitoring functions in accordance with this part shall notify the department, in writing, by January 1, 2011. The information provided in the notification shall include all of the following:

(1) The entity's name, address, telephone number, and any other relevant contact information.

(2) The specific authority described in Section 10927 pursuant to which the entity qualifies to assume the groundwater monitoring functions.

(3) For entities that seek to qualify pursuant to subdivision (c) or (d) of Section 10927, the notification shall also include a copy of the current groundwater management plan or the groundwater component of the integrated regional water management plan, as appropriate.

(4) For entities that seek to qualify pursuant to subdivision (f) of Section 10927, the notification shall include a statement of intention to meet the requirements of Section 10935.

(5) A map showing the area for which the entity is proposing to perform the groundwater monitoring functions.

(6) A statement that the entity will comply with all of the requirements of this part.

(7) A statement describing the ability and qualifications of the entity to conduct the groundwater monitoring functions required by this part.
(c) The department may request additional information that it deems necessary for the purposes of determining the area that is proposed to be monitored or the qualifications of the entity to perform the groundwater monitoring functions.

10929. (a) (1) The department shall review all notifications received pursuant to Section 10928.

(2) Upon the receipt of a notification pursuant to subdivision (a) of Section 10928, the department shall verify that the notifying entity has the appropriate authority under subdivision (a) or (b) of Section 10927.

(3) Upon the receipt of a notification pursuant to subdivision (b) of Section 10928, the department shall do both of the following:

(A) Verify that each notification is complete.

(B) Assess the qualifications of the notifying party.

(b) If the department has questions about the completeness or accuracy of a notification, or the qualifications of a party, the department shall contact the party to resolve any deficiencies. If the department is unable to resolve the deficiencies, the department shall notify the party in writing that the notification will not be considered further until the deficiencies are corrected.

(c) If the department determines that more than one party seeks to become the monitoring entity for the same portion of a basin or subbasin, the department shall consult with the interested parties to determine which party will perform the monitoring functions. In determining which party will perform the monitoring functions under this part, the department shall follow the order in which entities are identified in Section 10927.

(d) The department shall advise each party on the status of its notification within three months of receiving the notification.

10930. Upon completion of each review pursuant to Section 10929, the department shall do both of the following if it determines that a party will perform monitoring functions under this part:

(a) Notify the party in writing that it is a monitoring entity and the specific portion of the basin or subbasin for which it shall assume groundwater monitoring functions.

(b) Post on the department's Internet Web site information that identifies the monitoring entity and the portion of the basin or subbasin for which the monitoring entity will be responsible.

10931. (a) The department shall work cooperatively with each monitoring entity to determine the manner in which groundwater elevation information should be reported to the department pursuant to this part. In determining what information should be reported to the department, the department shall defer to existing monitoring programs if those programs result in information that demonstrates seasonal and long-term trends in groundwater elevations. The department shall collaborate with the State Department of Public Health to ensure that the information reported to the department will not result in the inappropriate disclosure of the physical address or geographical location of drinking water sources, storage facilities, pumping operational data, or treatment facilities.

(b) (1) For the purposes of this part, the department may recommend improvements to an existing monitoring program, including recommendations for additional monitoring wells.

(2) The department may not require additional monitoring wells unless funds are provided for that purpose.

10932. Monitoring entities shall commence monitoring and reporting groundwater elevations pursuant to this part on or before January 1, 2012.

10933. (a) On or before January 1, 2012, the department shall commence to identify the extent of monitoring of groundwater elevations that is being undertaken within each basin and subbasin.

(b) The department shall prioritize groundwater basins and subbasins for the purpose of implementing this section. In prioritizing the basins and subbasins, the department shall, to the extent data are available, consider all of the following:

(1) The population overlying the basin or subbasin.

(2) The rate of current and projected growth of the population overlying the basin or subbasin.

(3) The number of public supply wells that draw from the basin or subbasin.

(4) The total number of wells that draw from the basin or subbasin.

(5) The irrigated acreage overlying the basin or subbasin.

(6) The degree to which persons overlying the basin or subbasin rely on groundwater as their primary source of water.

(7) Any documented impacts on the groundwater within the basin or subbasin, including overdraft, subsidence, saline intrusion, and other water quality degradation.

(8) Any other information determined to be relevant by the department.

(c) If the department determines that all or part of a basin or subbasin is not being monitored pursuant to this part, the department shall do all of the following:

(1) Attempt to contact all well owners within the area not being monitored.

(2) Determine if there is an interest in establishing any of the following:

(A) A groundwater management plan pursuant to Part 2.75 (commencing with Section 10750).

(B) An integrated regional water management plan pursuant to Part 2.2 (commencing with Section 10530) that includes a groundwater management component that complies with the requirements of Section 10753.7.

(C) A voluntary groundwater monitoring association pursuant to Section 10935.

(d) If the department determines that there is sufficient interest in establishing a plan or association described in paragraph (2) of subdivision (c), or if the county agrees to perform the groundwater monitoring functions in accordance with this part, the department shall work cooperatively with the interested parties to comply with the requirements of this part within two years.

(e) If the department determines, with regard to a basin or subbasin, that there is insufficient interest in establishing a plan or association described in paragraph (2) of subdivision (c), and if the county decides not to perform the groundwater monitoring and reporting functions of this part, the department shall do all of the following:

(1) Identify any existing monitoring wells that overlie the basin or subbasin that are owned or operated by the department or any other state or federal agency.

(2) Determine whether the monitoring wells identified pursuant to paragraph (1) provide sufficient information to demonstrate seasonal and long-term trends in groundwater elevations.

(3) If the department determines that the monitoring wells identified pursuant to paragraph (1) provide sufficient information to demonstrate seasonal and long-term trends in groundwater elevations, the department shall not perform groundwater monitoring functions pursuant to Section 10934.

(4) If the department determines that the monitoring wells identified pursuant to paragraph (1) provide insufficient information to demonstrate seasonal and long-term trends in groundwater elevations, and the State Mining and Geology Board concurs with

that determination, the department shall perform groundwater monitoring functions pursuant to Section 10934.[1]

10933.5. (a) Consistent with Section 10933, the department shall perform the groundwater monitoring functions for those portions of a basin or subbasin for which no monitoring entity has agreed to perform the groundwater monitoring functions.

(b) Upon determining that it is required to perform groundwater monitoring functions, the department shall notify both of the following entities that it is forming the groundwater monitoring district:

(1) Each well owner within the affected area.

(2) Each county that contains all or a part of the affected area.

(c) The department shall not assess a fee or charge to recover the costs for carrying out its power and duties under this part.

(d) The department may establish regulations to implement this section.

10933.7. (a) If the department is required to perform groundwater monitoring functions pursuant to Section 10933.5, the county and the entities described in subdivisions (a) to (d), inclusive, of Section 10927 shall not be eligible for a water grant or loan awarded or administered by the state.

(b) Notwithstanding subdivision (a), the department shall determine that an entity described in subdivision (a) is eligible for a water grant or loan under the circumstances described in subdivision (a) if the entity has submitted to the department for approval documentation demonstrating that its entire service area qualifies as a disadvantaged community.

10934. (a) For purposes of this part, neither any entity described in Section 10927, nor the department, shall have the authority to do either of the following:

(1) To enter private property without the consent of the property owner.

[1] The reference in Section 10933(e)(4) to Section 10934 has been amended by Stats. 2010, Ch. 328, sec. 237 (S.B. 1330). The new reference will be to Section 10933.5.

(2) To require a private property owner to submit groundwater monitoring information to the entity.

(b) This section does not apply to a county or an entity described in subdivisions (a) to (d), inclusive, of Section 10927 that assumed responsibility for monitoring and reporting groundwater elevations prior to the effective date of this part.

10935. (a) A voluntary cooperative groundwater monitoring association may be formed for the purposes of monitoring groundwater elevations in accordance with this part. The association may be established by contract, a joint powers agreement, a memorandum of agreement, or other form of agreement deemed acceptable by the department.

(b) Upon notification to the department by one or more entities that seek to form a voluntary cooperative groundwater monitoring association, the department shall work cooperatively with the interested parties to facilitate the formation of the association.

(c) The contract or agreement shall include all of the following:

(1) The names of the participants.

(2) The boundaries of the area covered by the agreement.

(3) The name or names of the parties responsible for meeting the requirements of this part.

(4) The method of recovering the costs associated with meeting the requirements of this part.

(5) Other provisions that may be required by the department.

10936. Costs incurred by the department pursuant to this chapter may be funded from unallocated bond revenues pursuant to paragraph (12) of subdivision (a) of Section 75027 of the Public Resources Code, to the extent those funds are available for those purposes.

SEC. 2. Section 12924 of the Water Code is repealed.

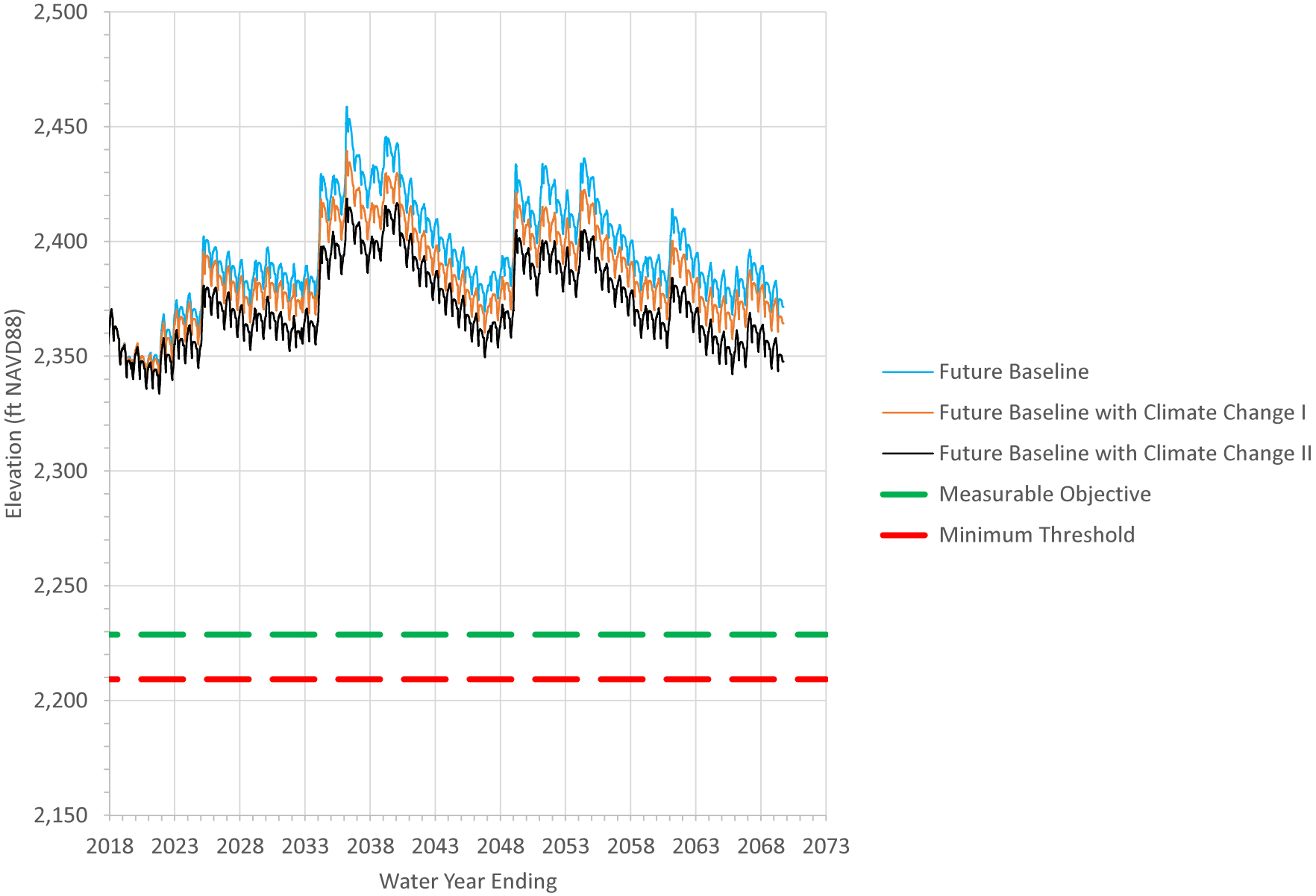
SEC. 3. Section 12924 is added to the Water Code, to read:

12924. (a) The department, in conjunction with other public agencies, shall conduct an investigation of the state's groundwater basins. The department shall identify the state's groundwater basins on the basis of geological and hydrological conditions and consideration of political boundary lines whenever practical. The department shall also investigate existing general patterns of groundwater pumping and groundwater recharge within those basins to the extent necessary to identify basins that are subject to critical conditions of overdraft.

(b) The department shall report its findings to the Governor and the Legislature not later than January 1, 2012, and thereafter in years ending in 5 or 0.

SEC. 4. This act shall take effect only if Senate Bill 1 and Senate Bill 7 of the 2009–10 Seventh Extraordinary Session of the Legislature are enacted and become effective.

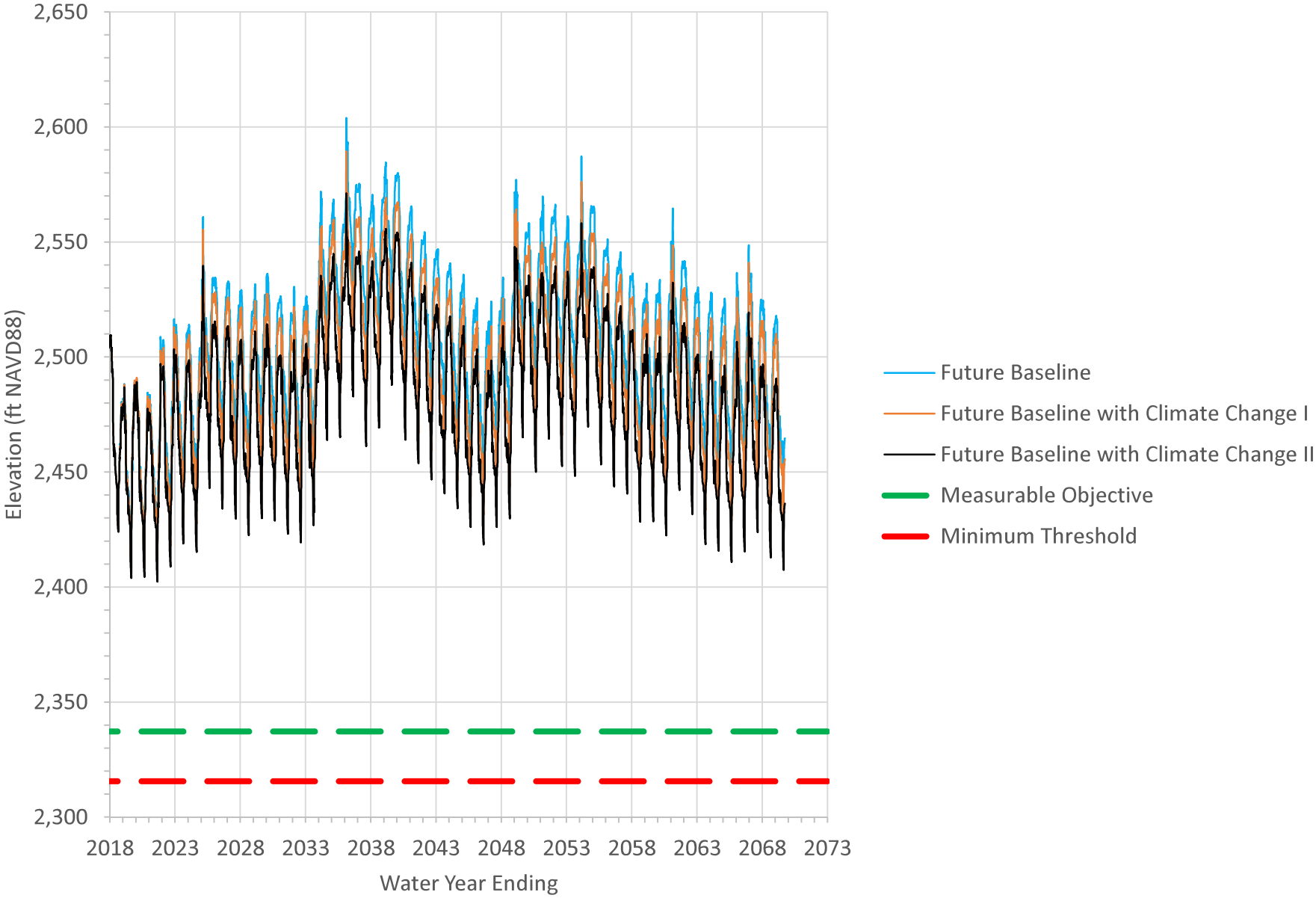
Figure 3-10. Predicted Hydraulic Heads at YVWD-46 in the North Bench Management Area



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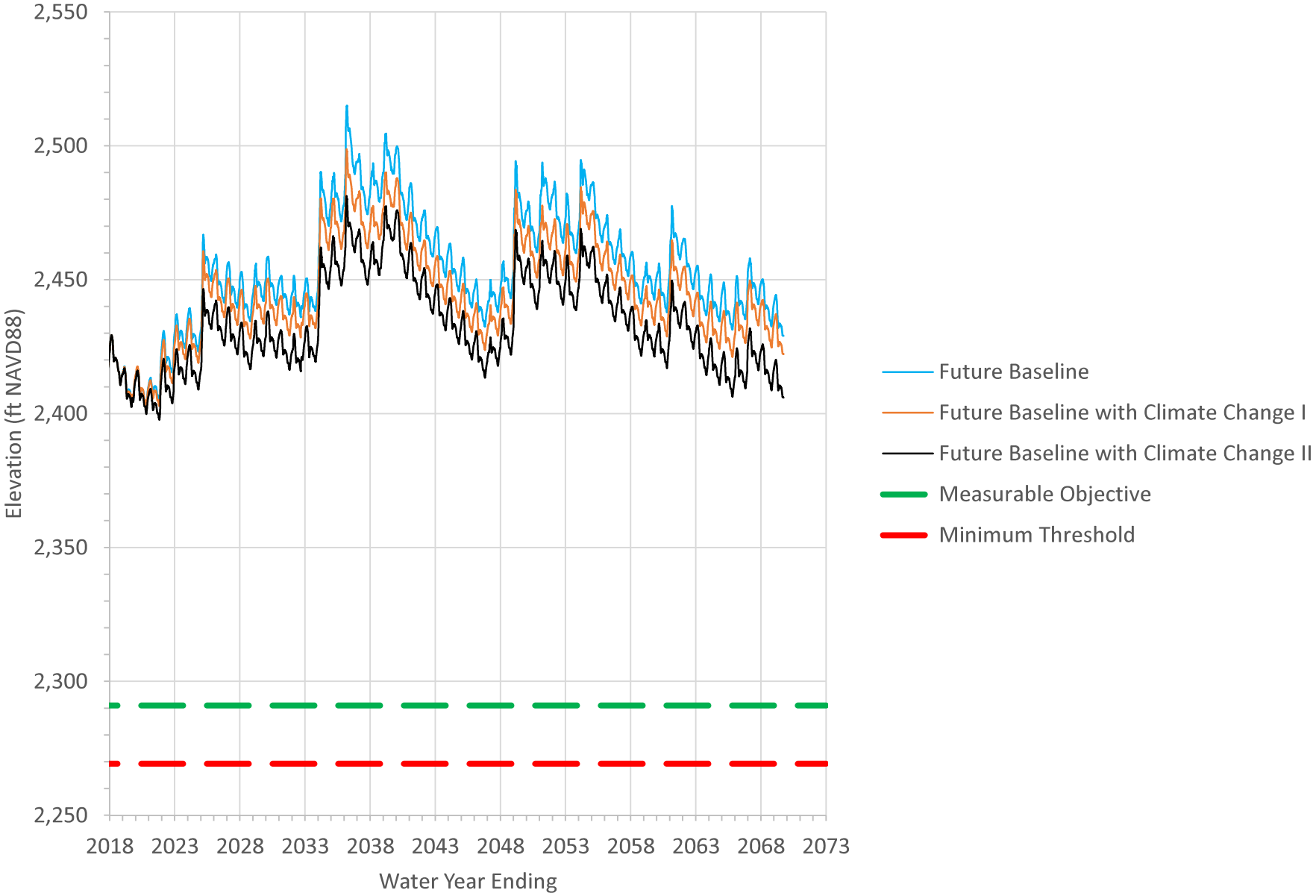
Figure 3-11. Predicted Hydraulic Heads at YVWD-53 in the North Bench Management Area



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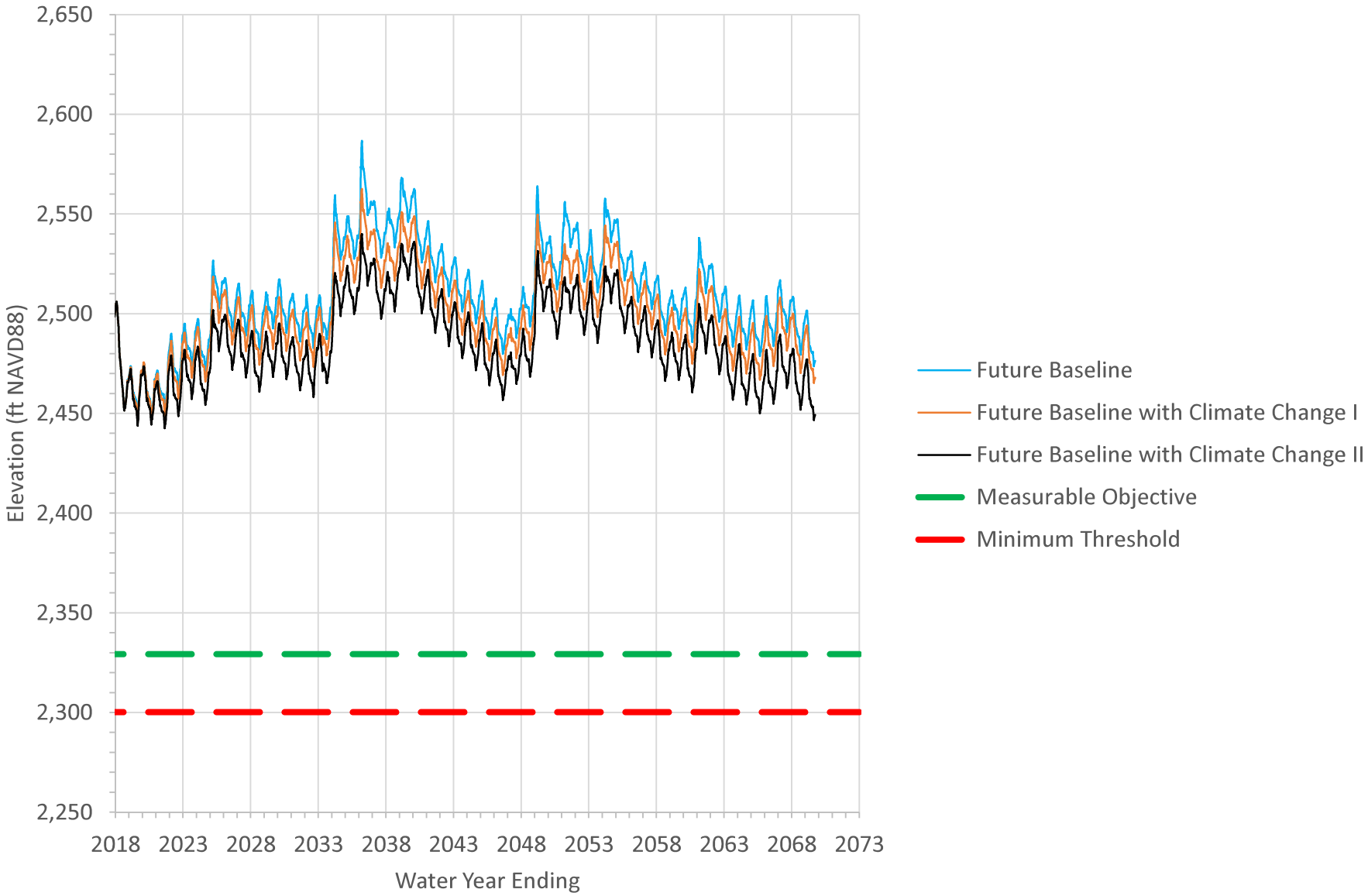
Figure 3-12. Predicted Hydraulic Heads at YVWD-56 in the North Bench Management Area



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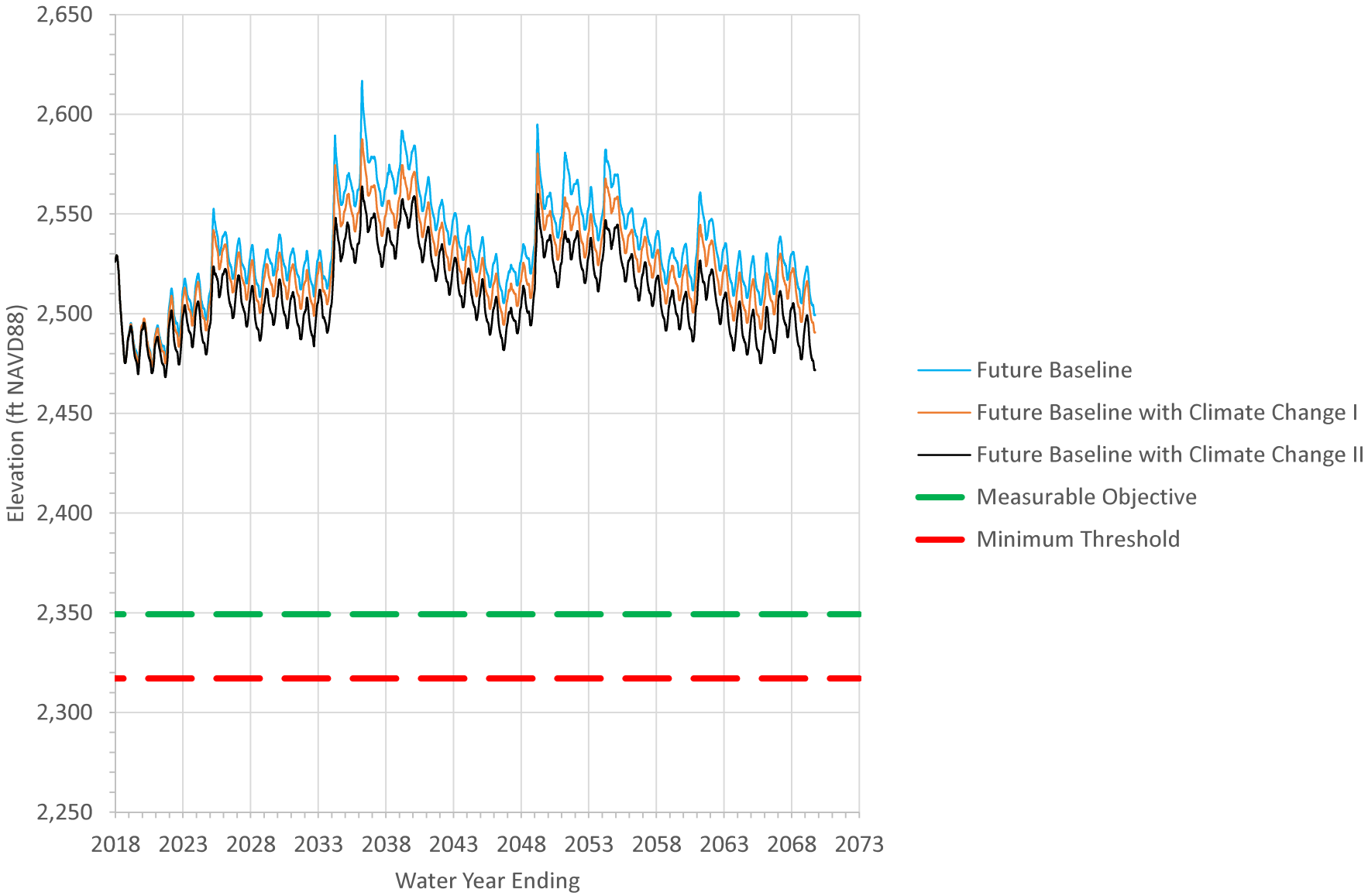
Figure 3-13. Predicted Hydraulic Heads at USGS Wilson Creek #1 in the North Bench Management Area



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Figure 3-14. Predicted Hydraulic Heads at USGS Wilson Creek #4 in the North Bench Management Area



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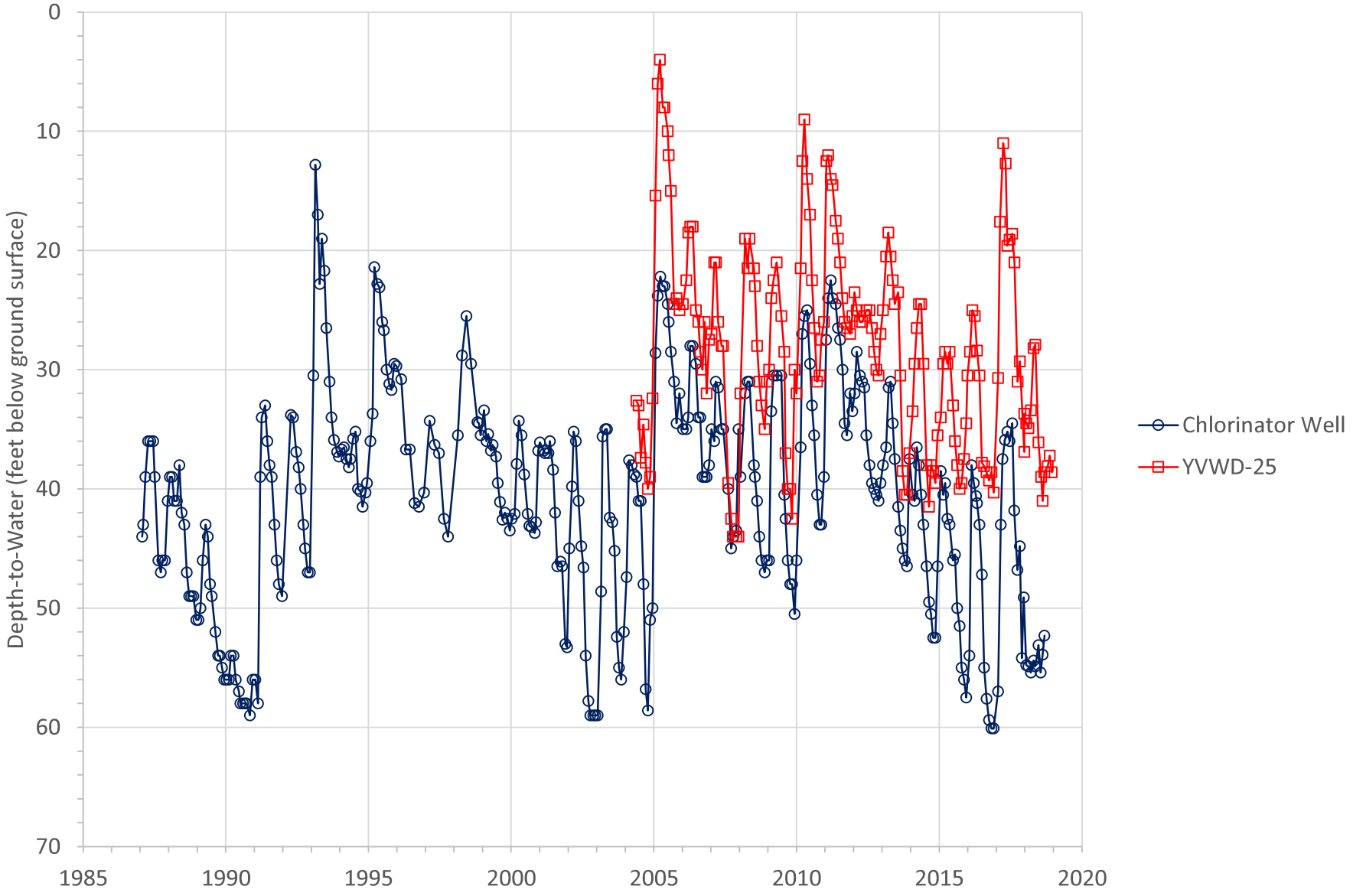
Figure 3-15. Predicted Volume in Storage by the Future Baseline and Future Baseline with Climate Change I and II Scenarios in the North Bench Management Area



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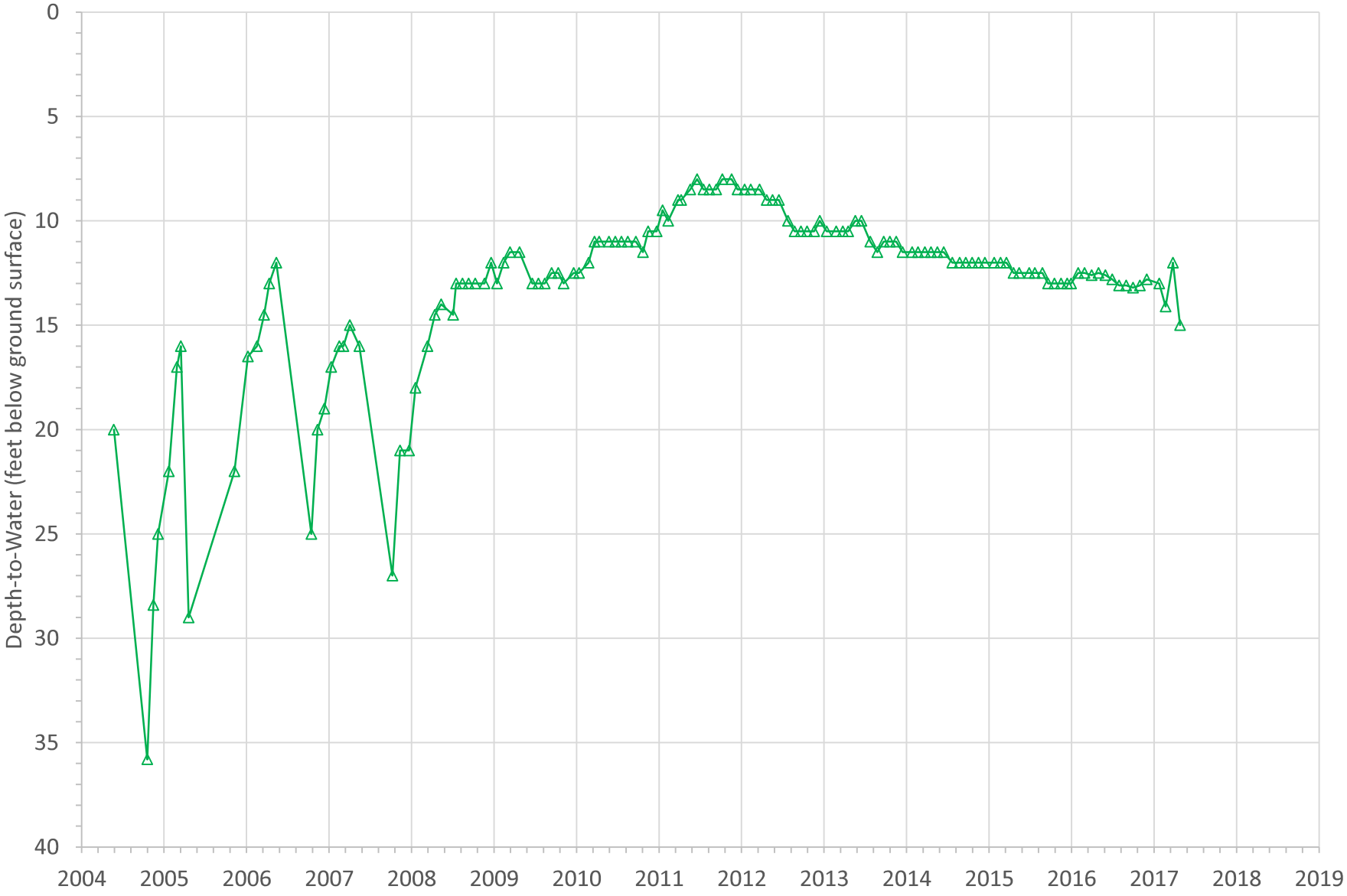
Figure 3-16. Depths-to-Groundwater at the Chlorinator Well and YVWD-25 in the North Bench Management Area



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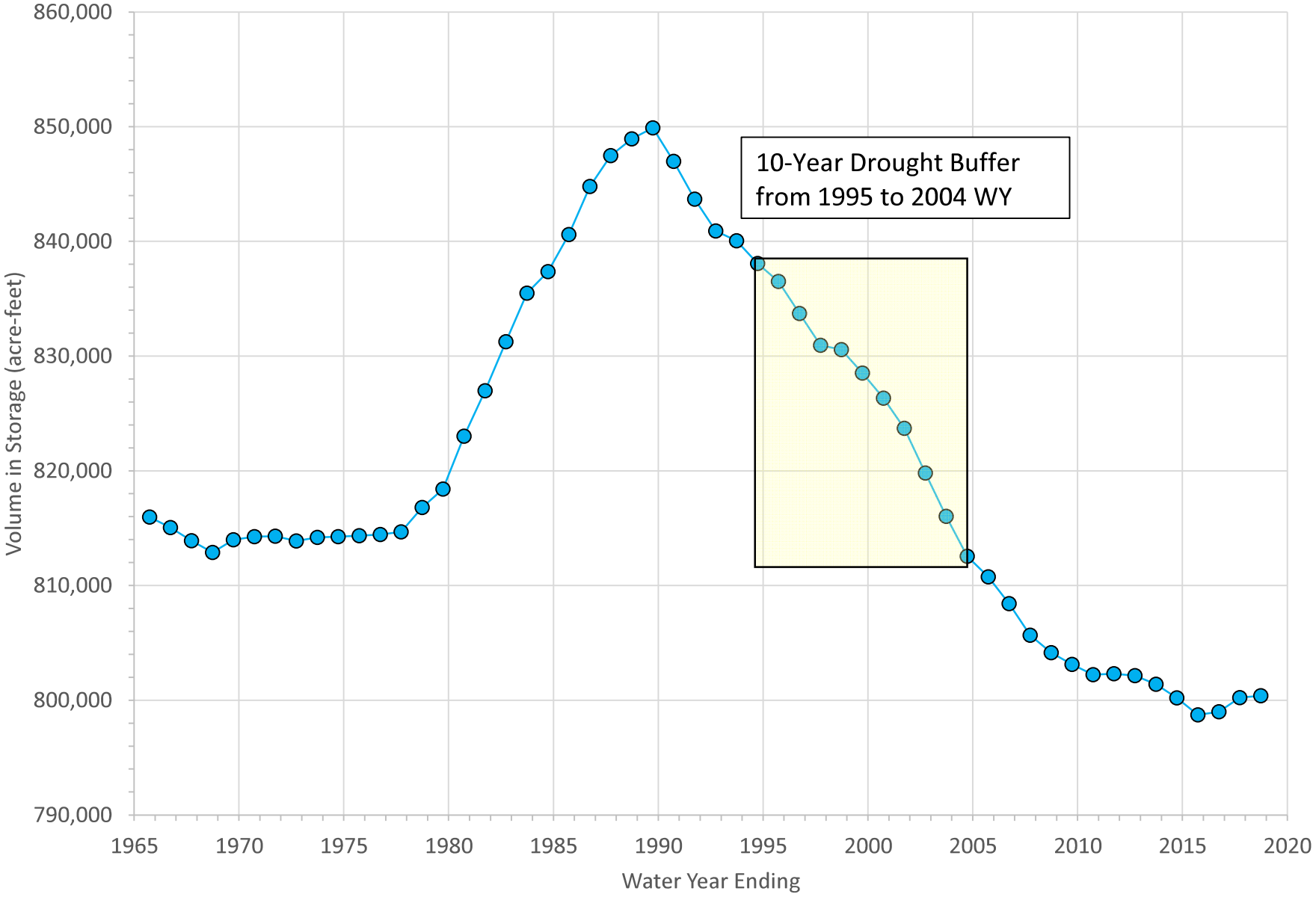
Figure 3-17. Static Depths-to-Groundwater at YVWD-28 in the North Bench Management Area



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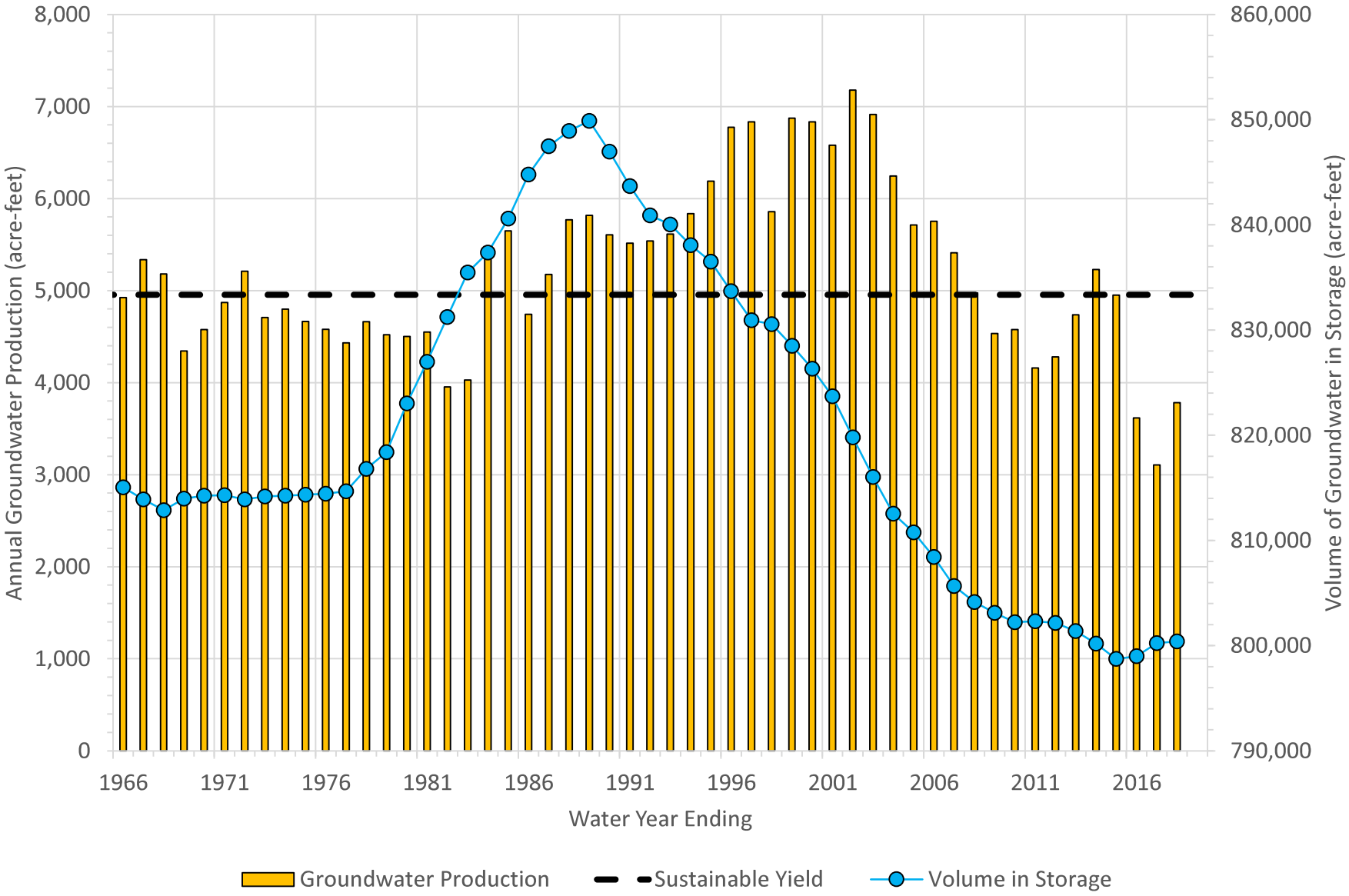
Figure 3-18. Drought Buffer in the Calimesa Management Area



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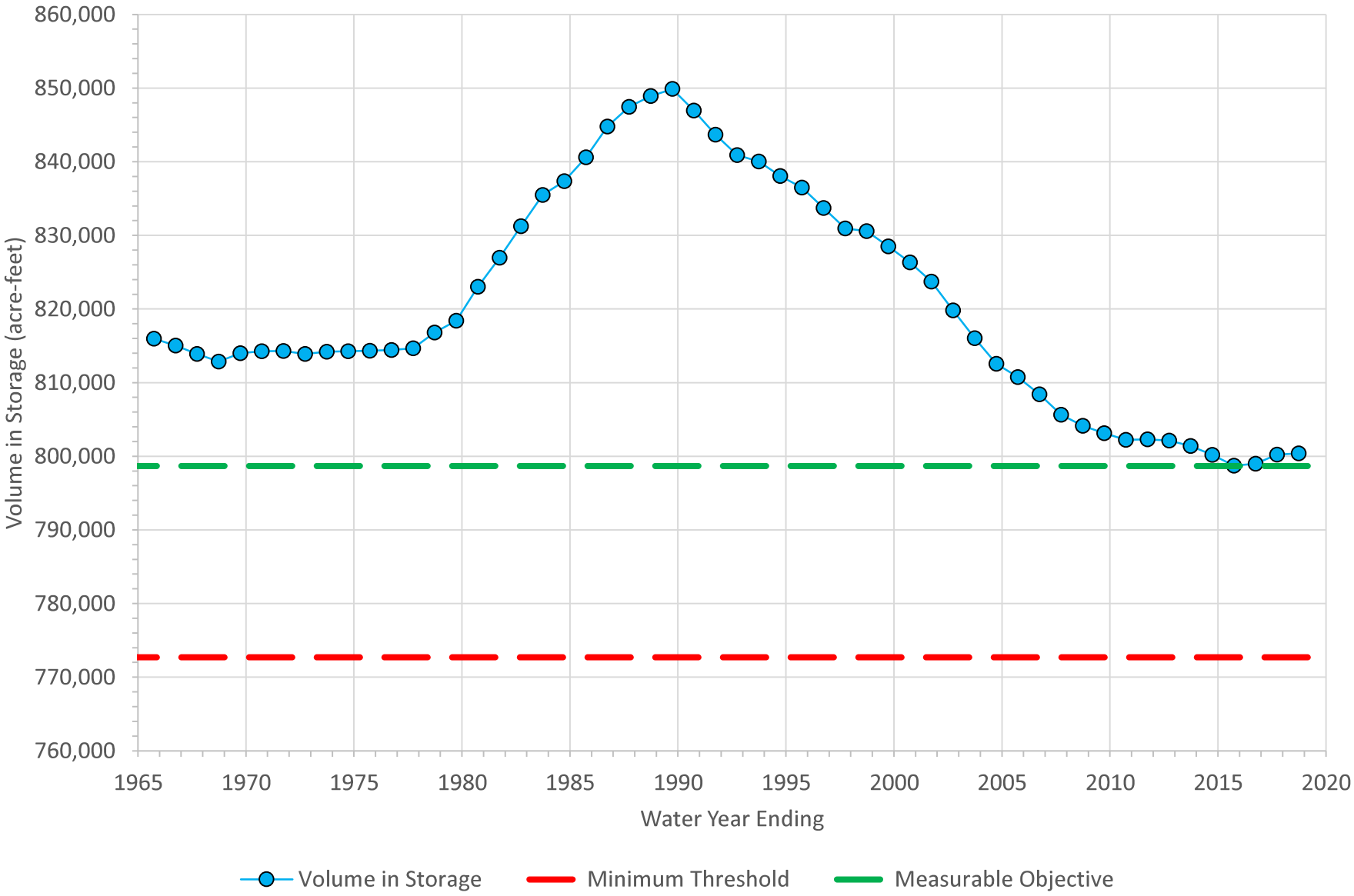
Figure 3-19. Historical and Current Volume of Groundwater in Storage in the Calimesa Management Area



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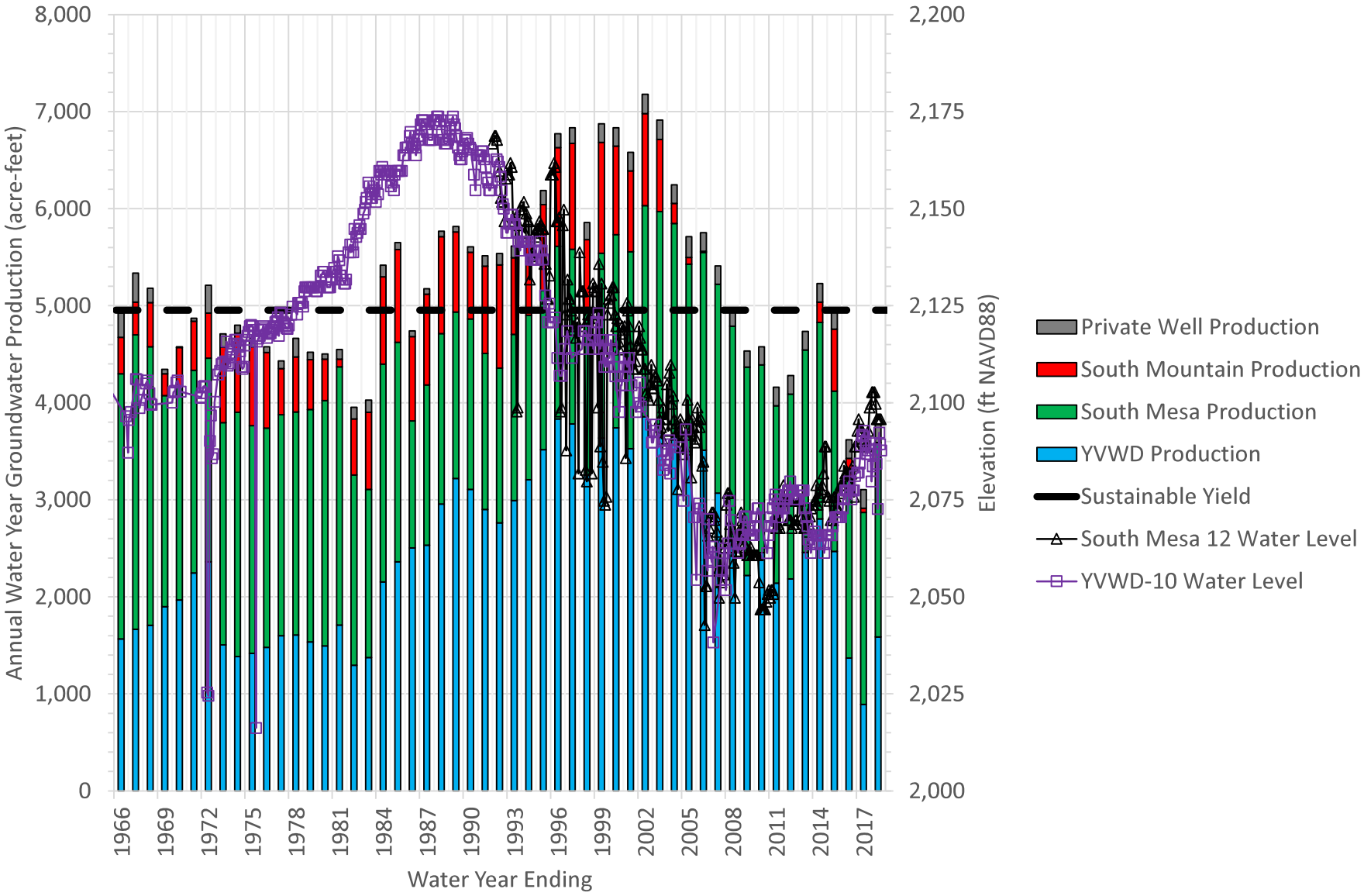
Figure 3-20. Minimum Threshold and Measurable Objective in the Calimesa Management Area



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Figure 3-21. Annual Groundwater Production and Historical Groundwater Elevations in the Calimesa Management Area



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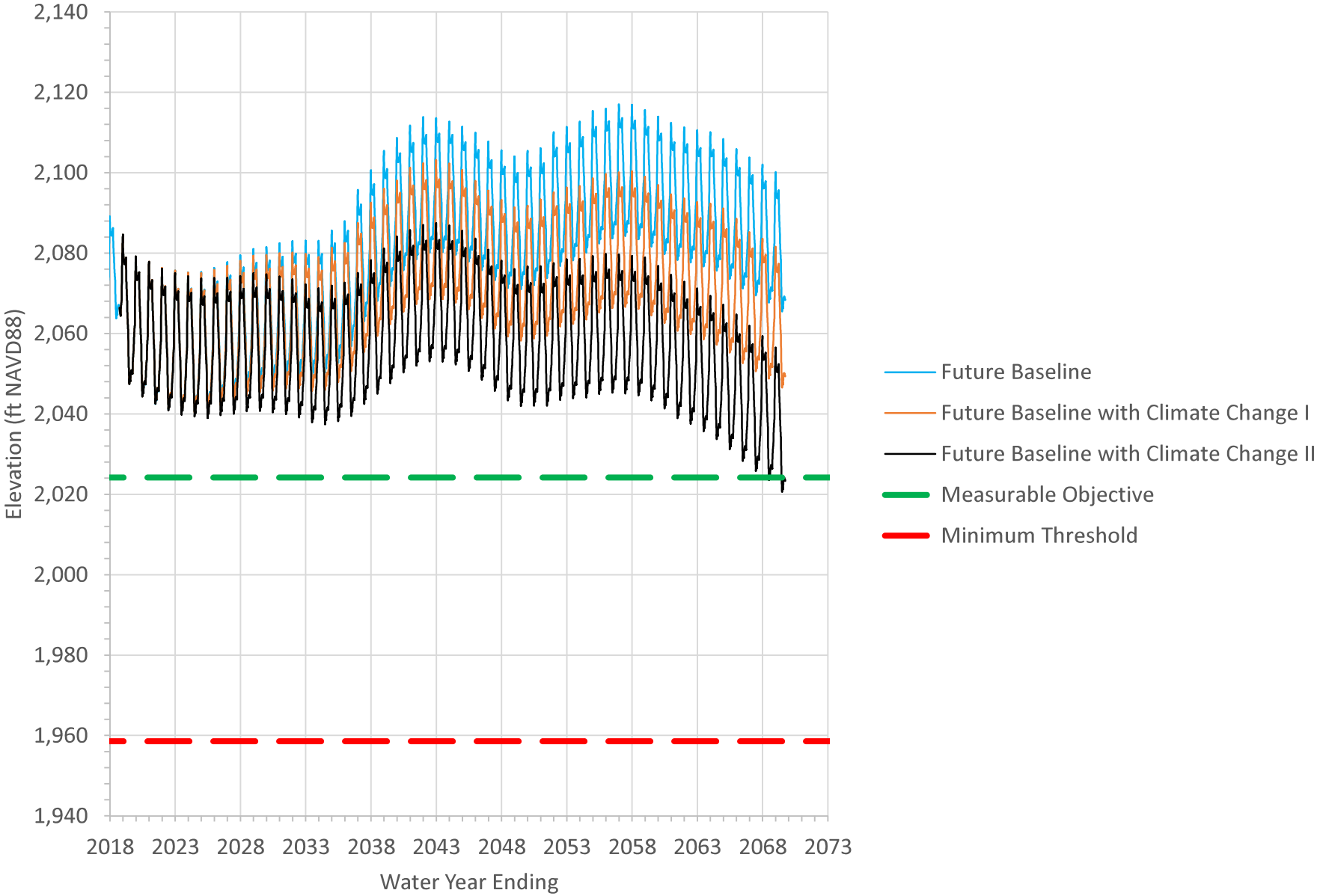
Figure 3-22. Predicted Hydraulic Heads at South Mesa 7 in the Calimesa Management Area



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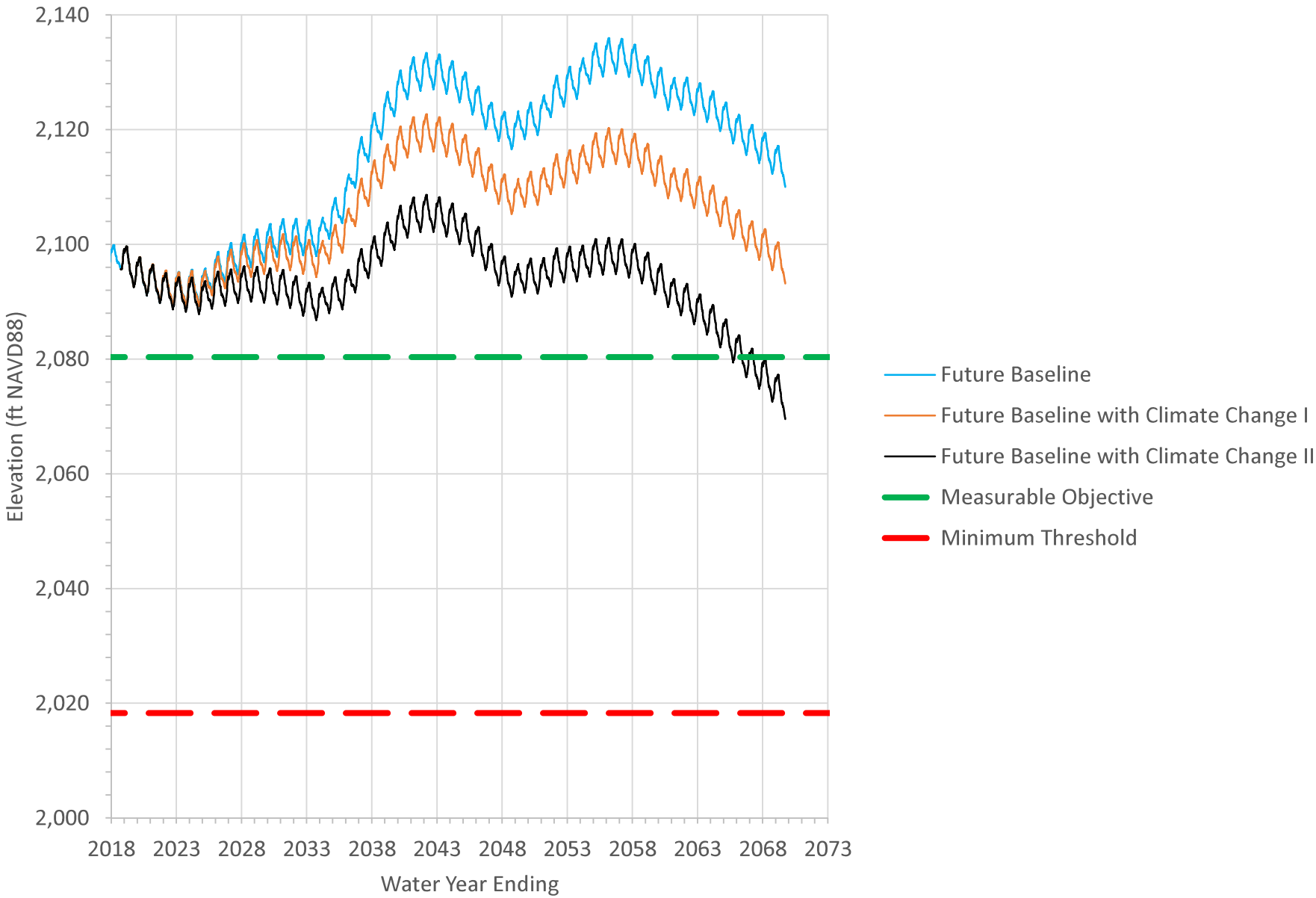
Figure 3-23. Predicted Hydraulic Heads at South Mesa 9 in the Calimesa Management Area



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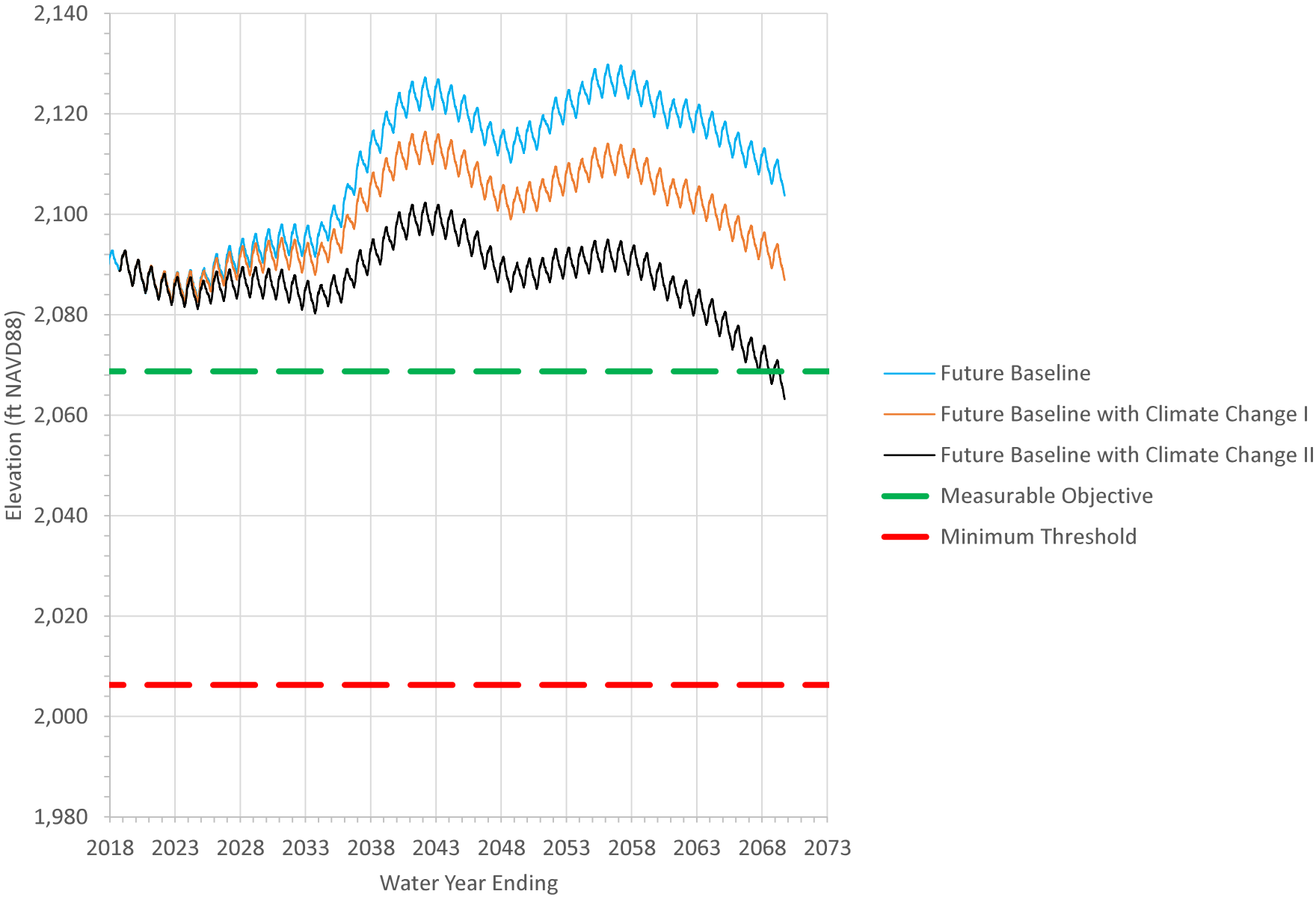
Figure 3-24. Predicted Hydraulic Heads at South Mesa 12 in the Calimesa Management Area



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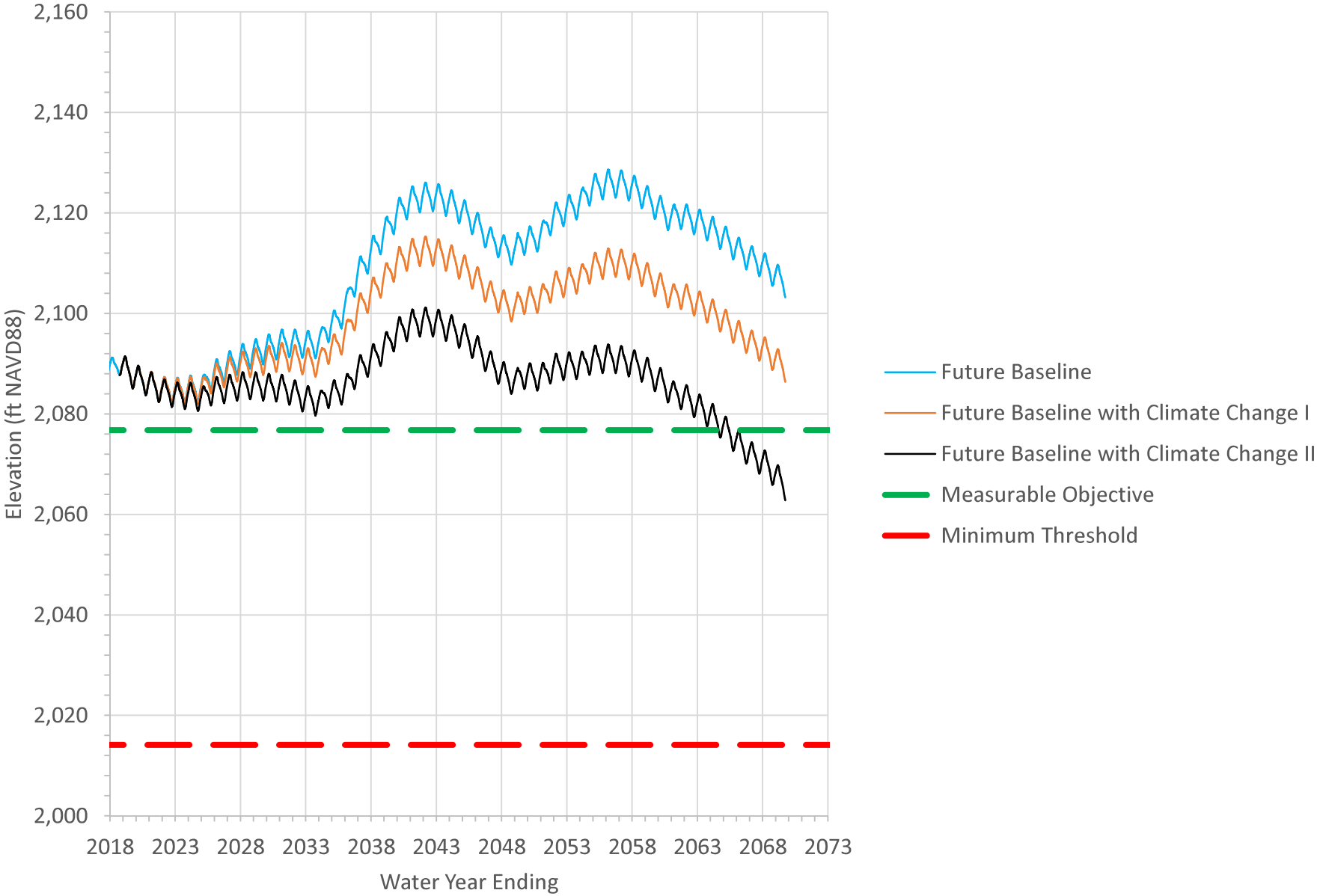
Figure 3-25. Predicted Hydraulic Heads at South Mesa 17 in the Calimesa Management Area



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Figure 3-26. Predicted Hydraulic Heads at YVWD-10 in the Calimesa Management Area



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Figure 3-27. Predicted Hydraulic Heads at YVWD-12 in the Calimesa Management Area



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Figure 3-28. Predicted Hydraulic Heads at YVWD-24 in the Calimesa Management Area



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Figure 3-29. Predicted Hydraulic Heads at YVWD-49 in the Calimesa Management Area



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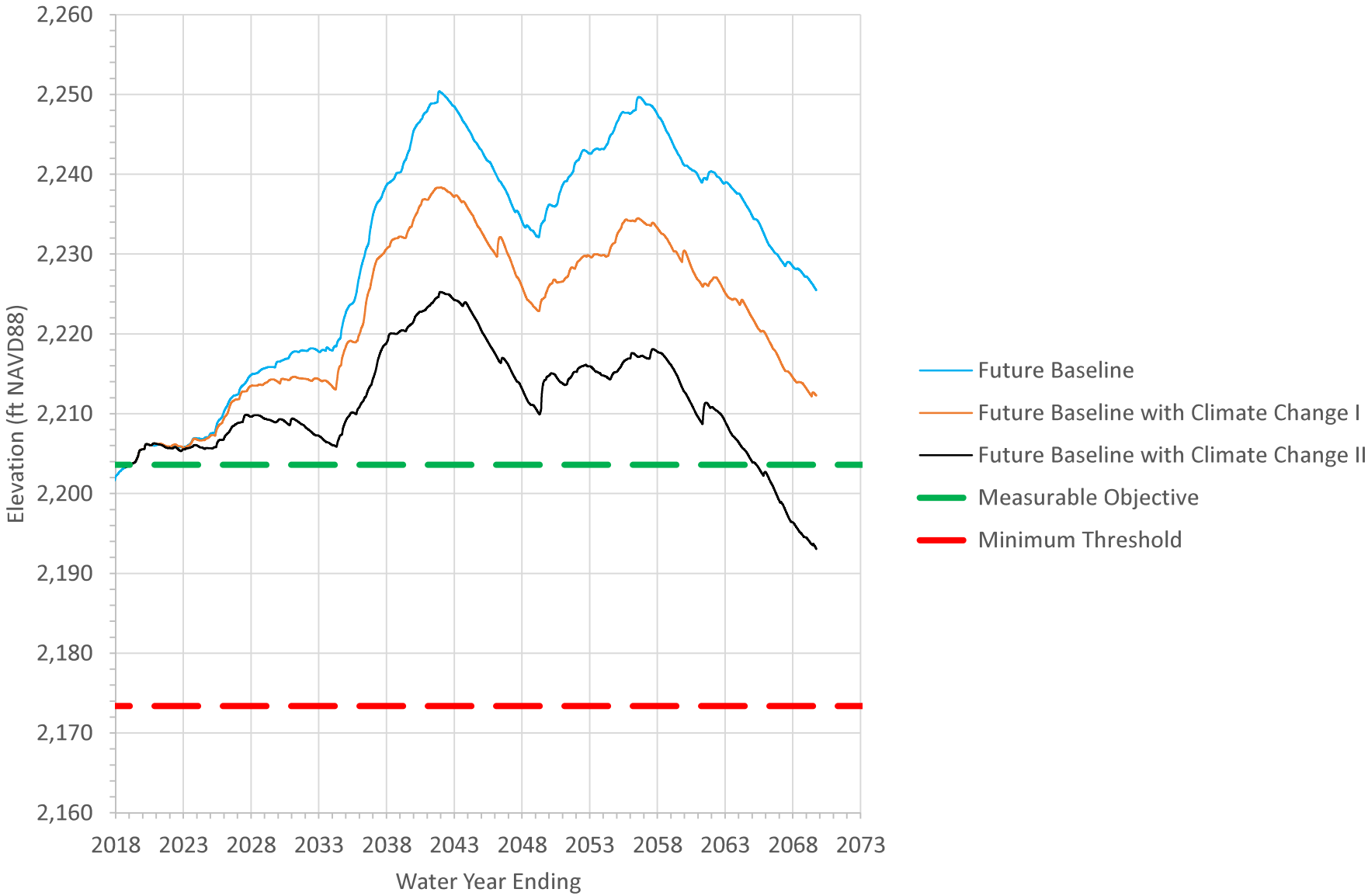
Figure 3-30. Predicted Hydraulic Heads at Hog Canyon 2 in the Calimesa Management Area



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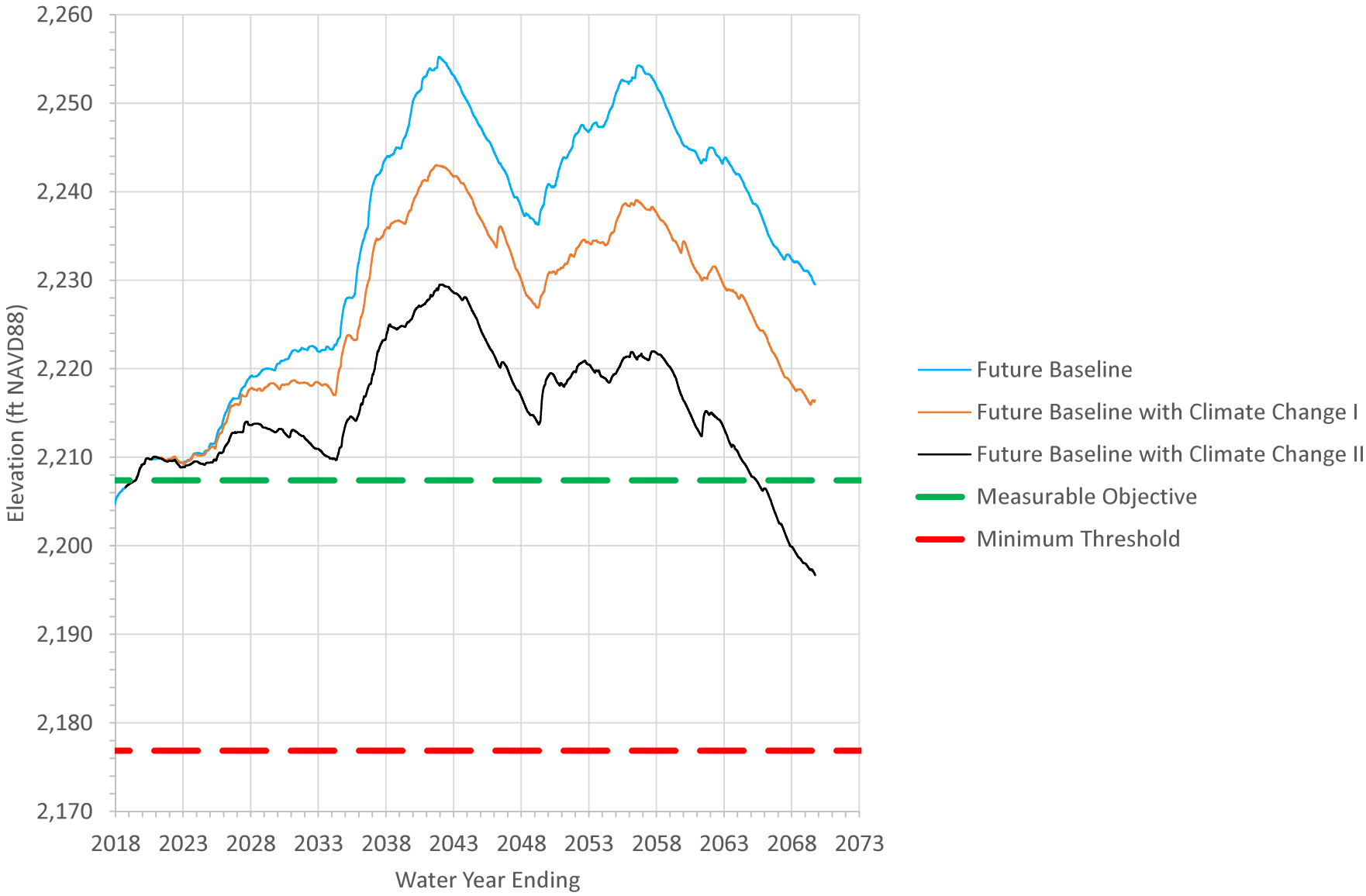
Figure 3-31. Predicted Hydraulic Heads at USGS Equestrian Park #1 Well in the Calimesa Management Area



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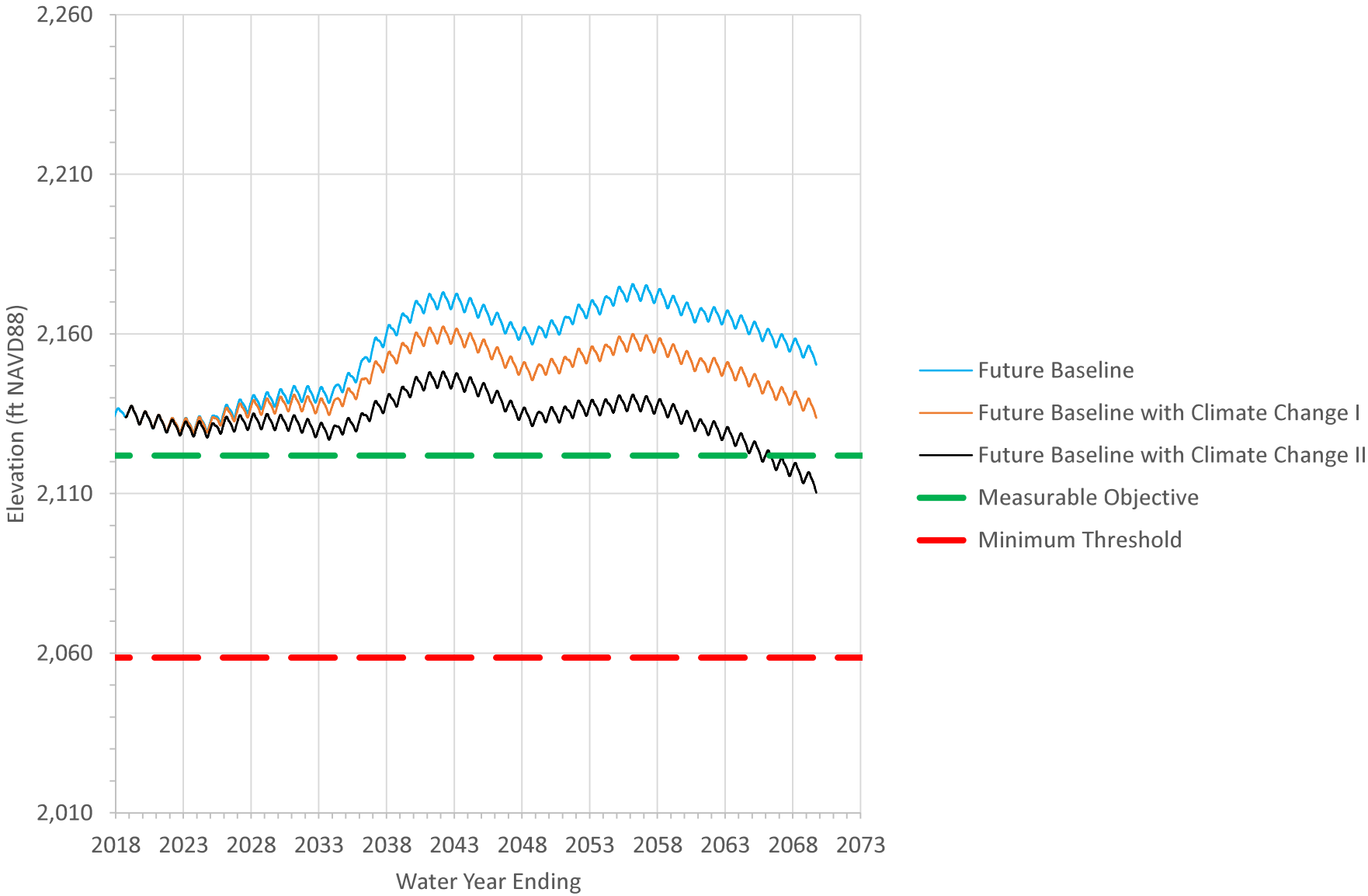
Figure 3-32. Predicted Hydraulic Heads at USGS Equestrian Park #4 Well in the Calimesa Management Area



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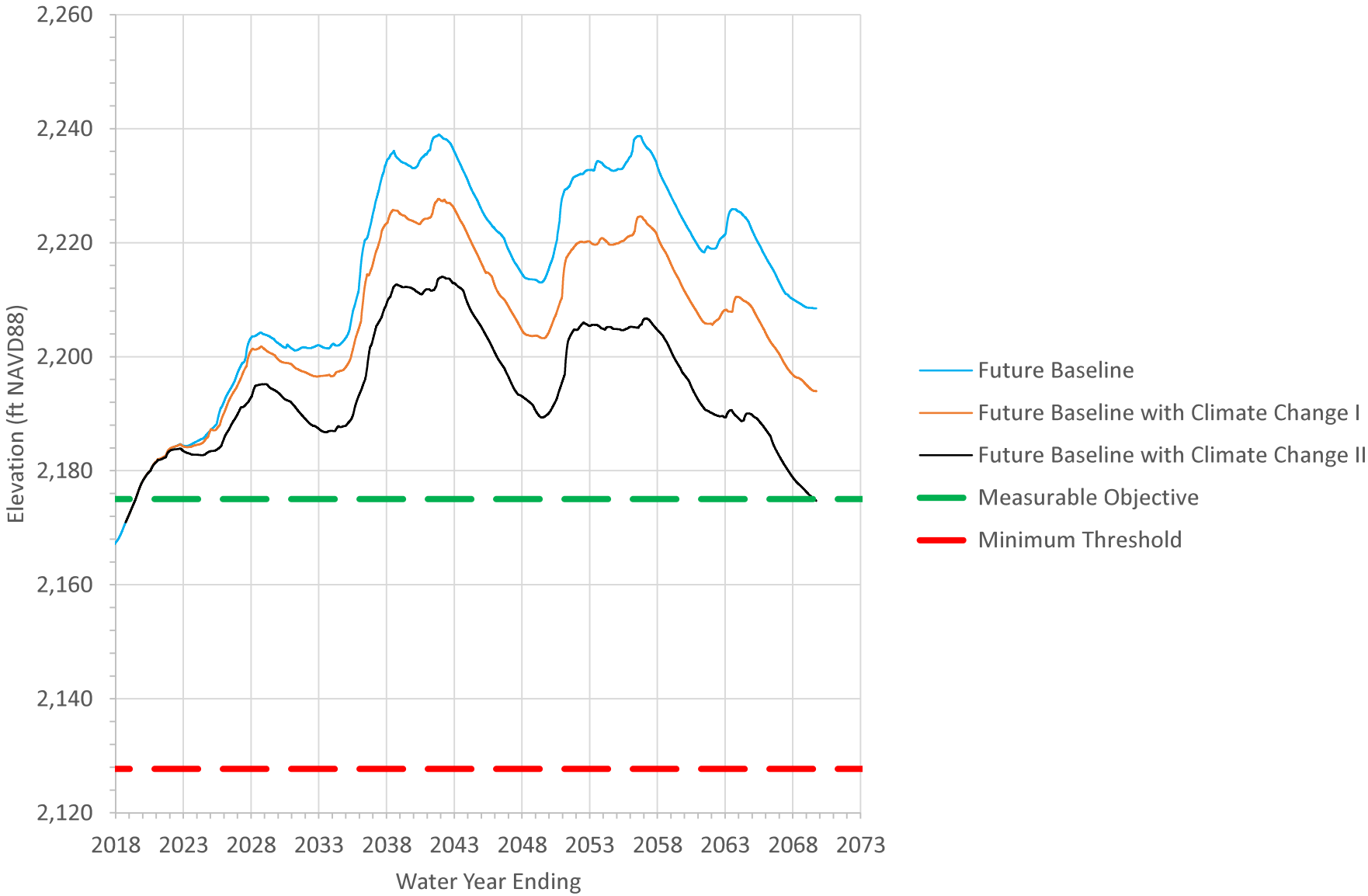
Figure 3-33. Predicted Hydraulic Heads at USGS 6th Street #1 Well in the Calimesa Management Area



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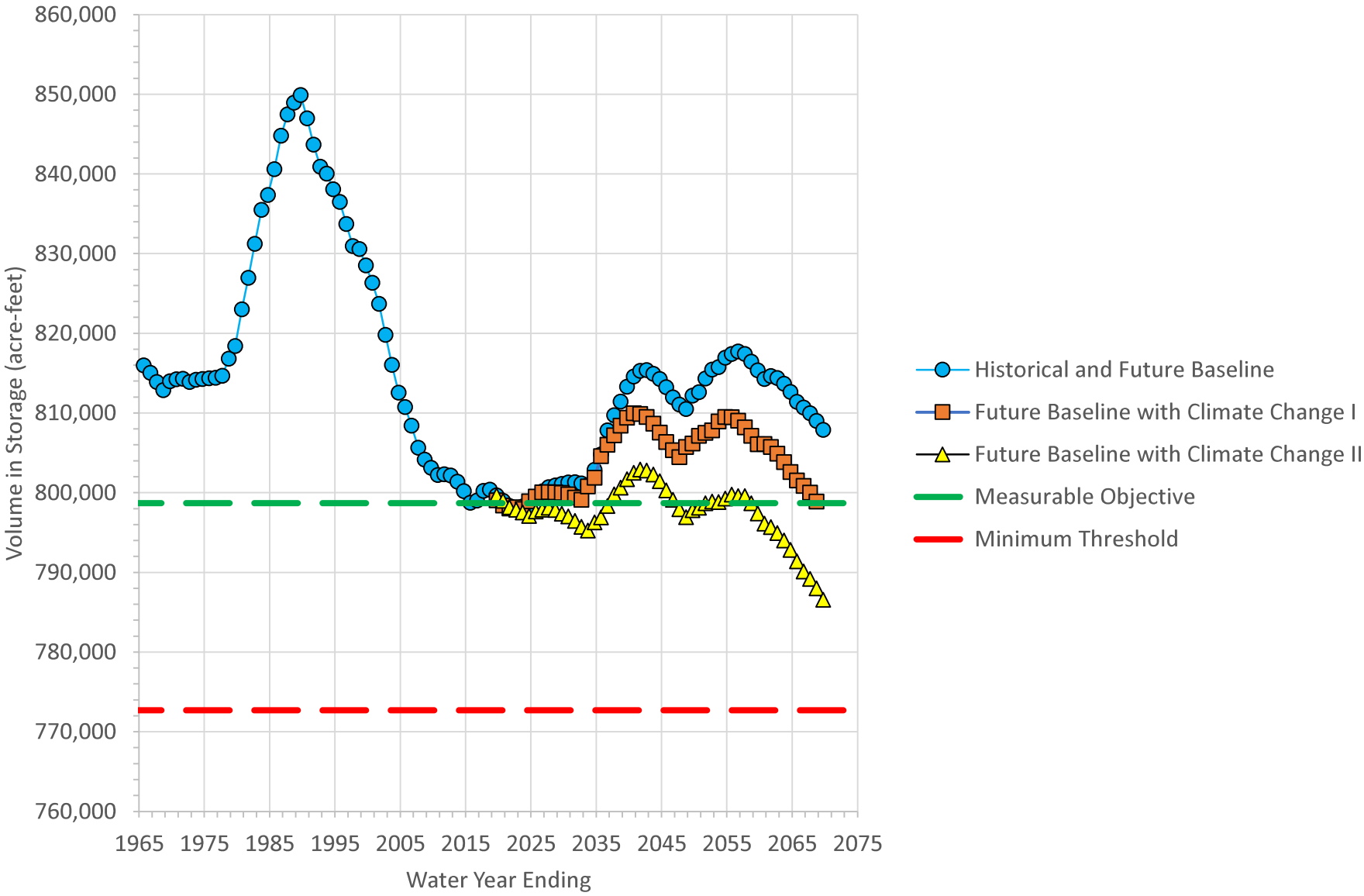
Figure 3-34. Predicted Hydraulic Heads at USGS 6th Street #4 Well in the Calimesa Management Area



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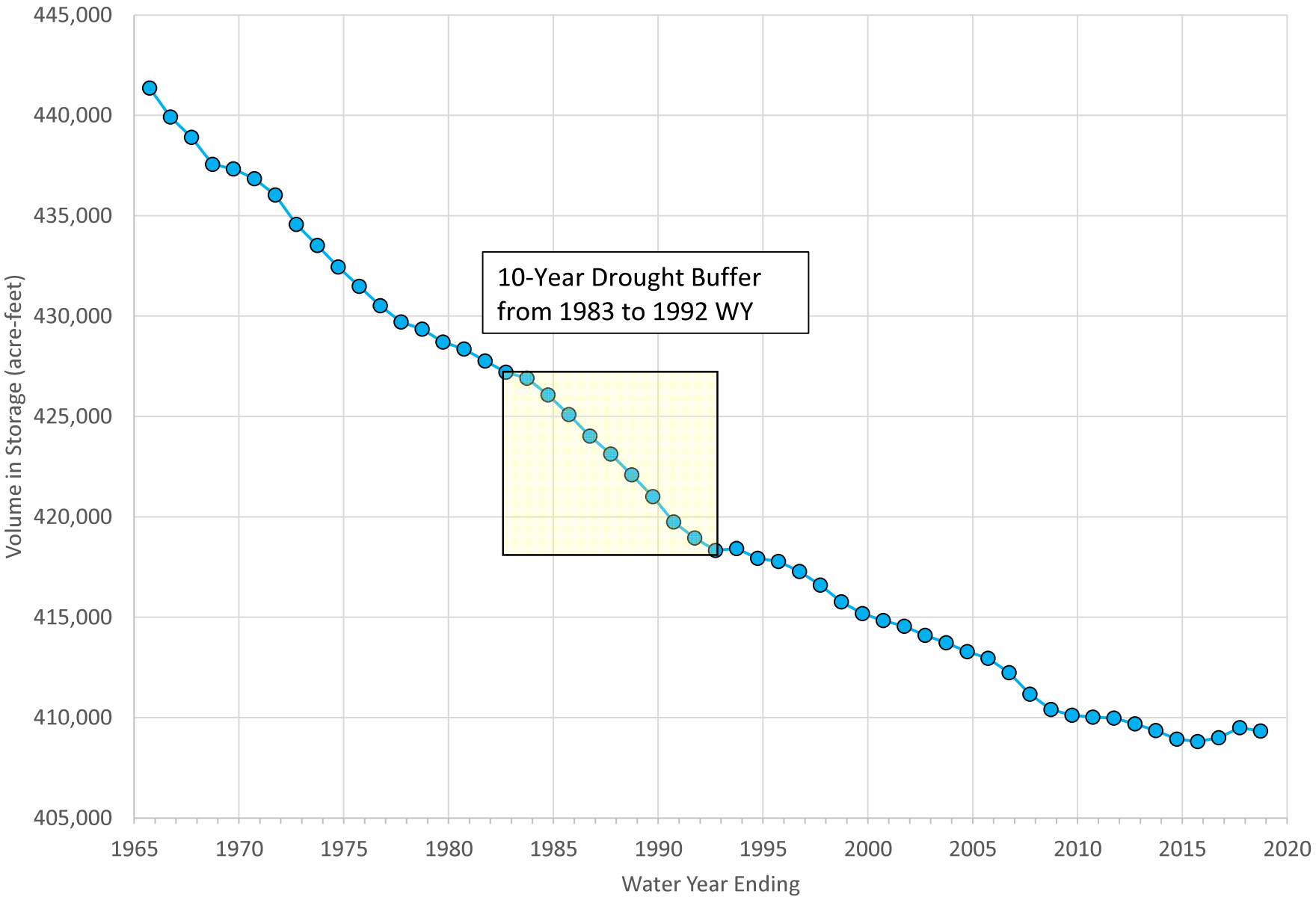
Figure 3-35. Predicted Volume in Storage by the Future Baseline and Future Baseline with Climate Change I and II Scenarios in the Calimesa Management Area



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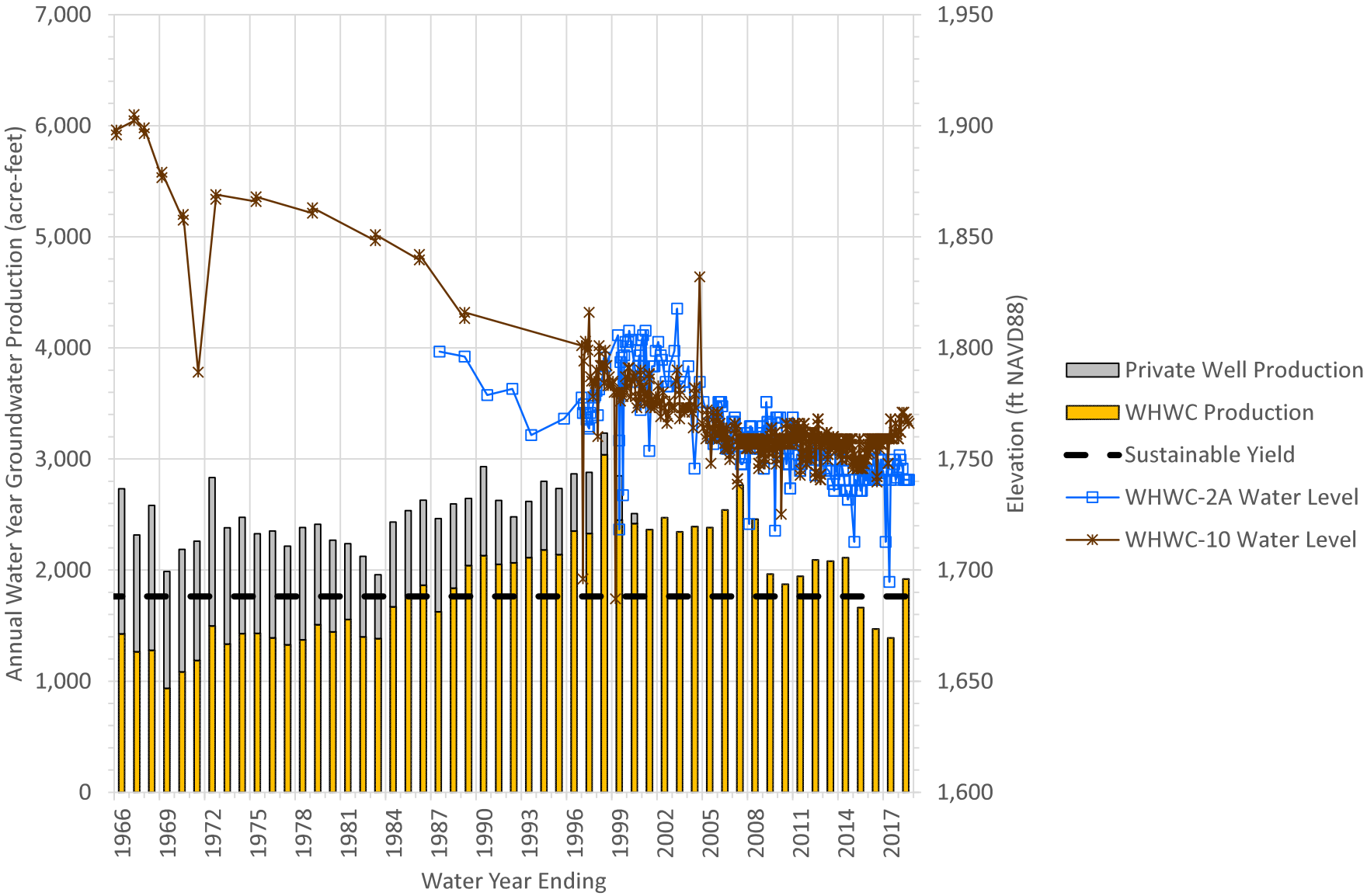
Figure 3-36. Drought Buffer in the Western Heights Management Area



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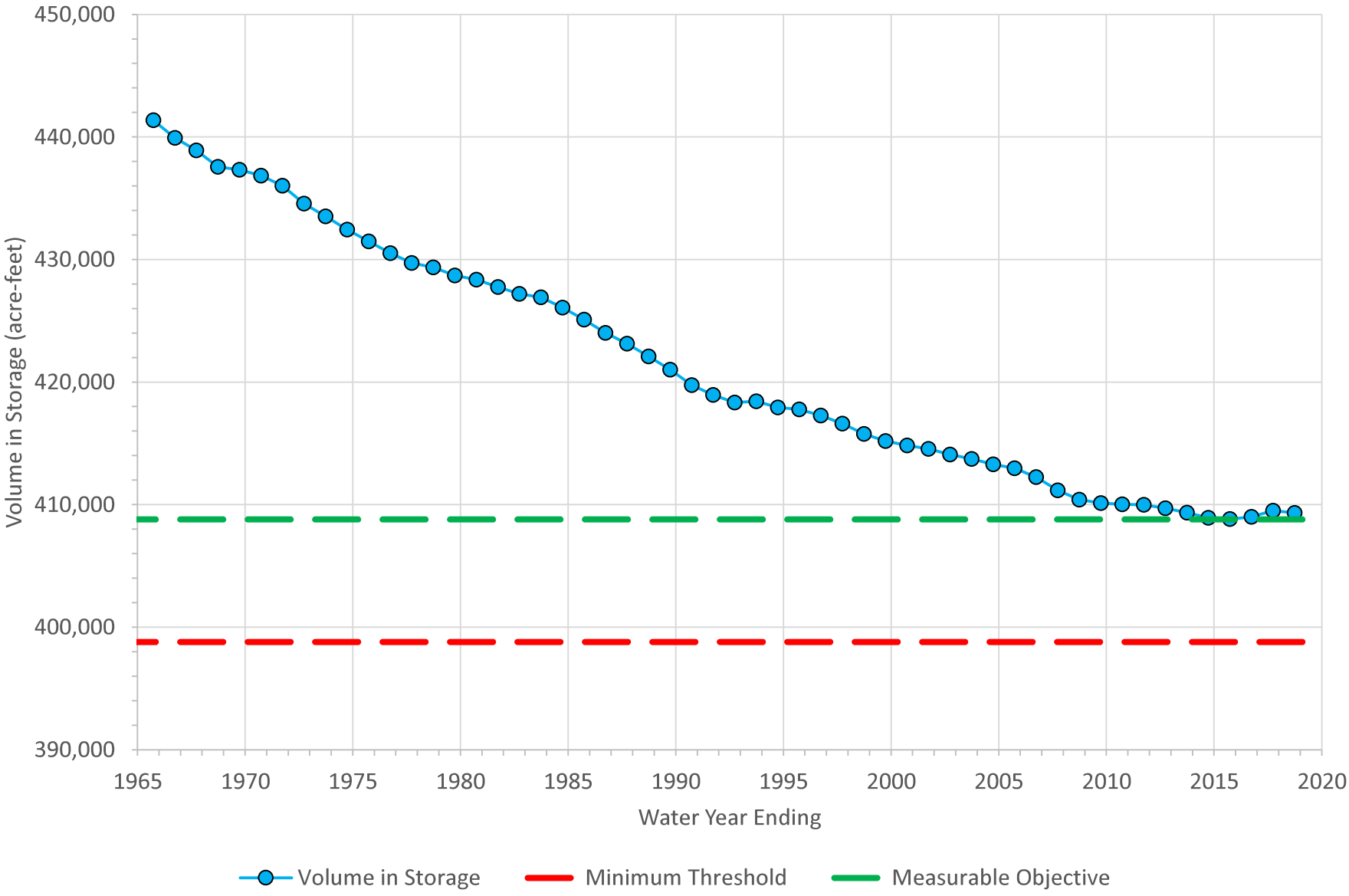
Figure 3-37. Annual Groundwater Production and Historical Groundwater Elevations in the Western Heights Management Area



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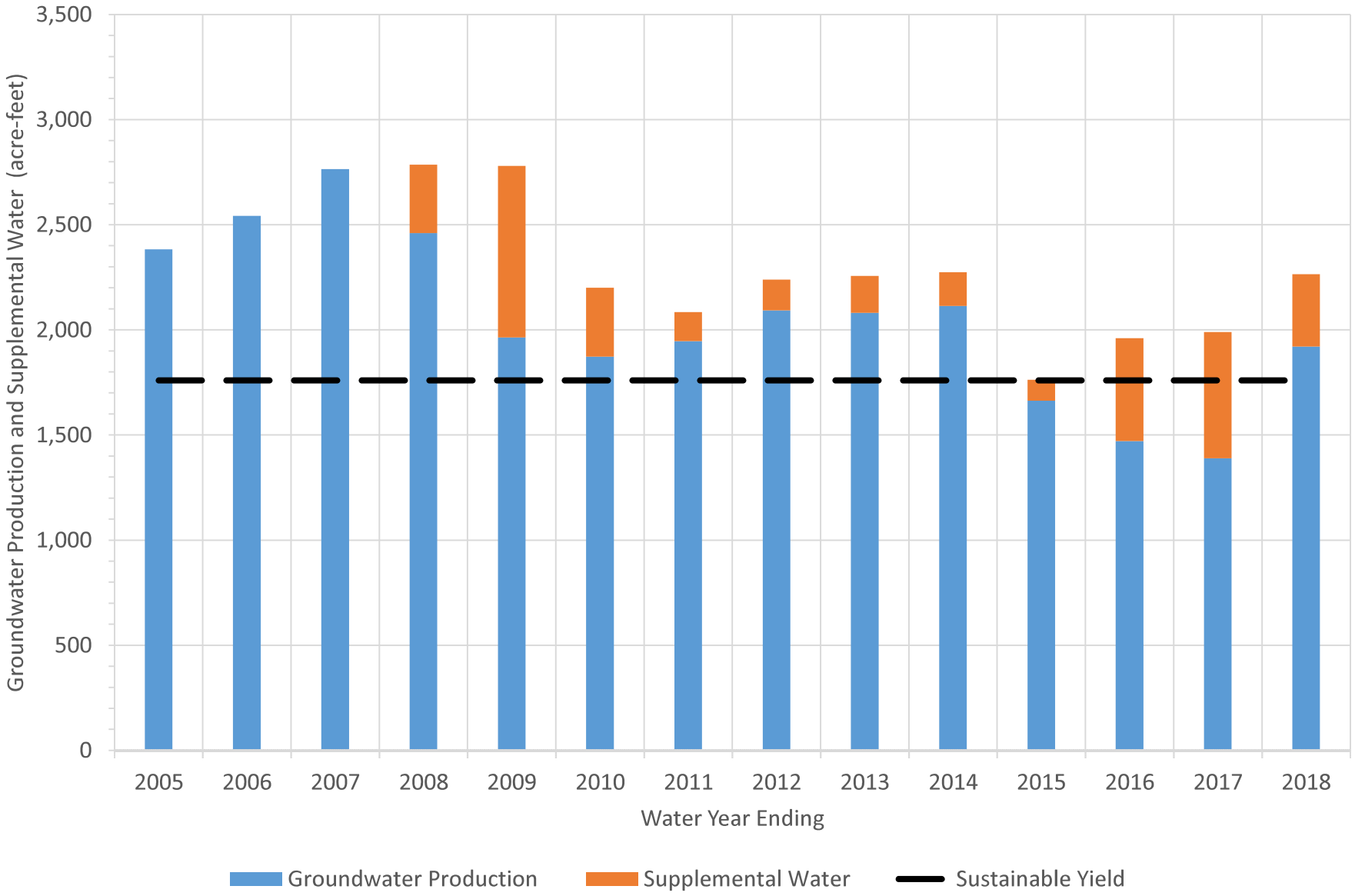
Figure 3-38. Minimum Threshold and Measurable Objective in the Western Heights Management Area



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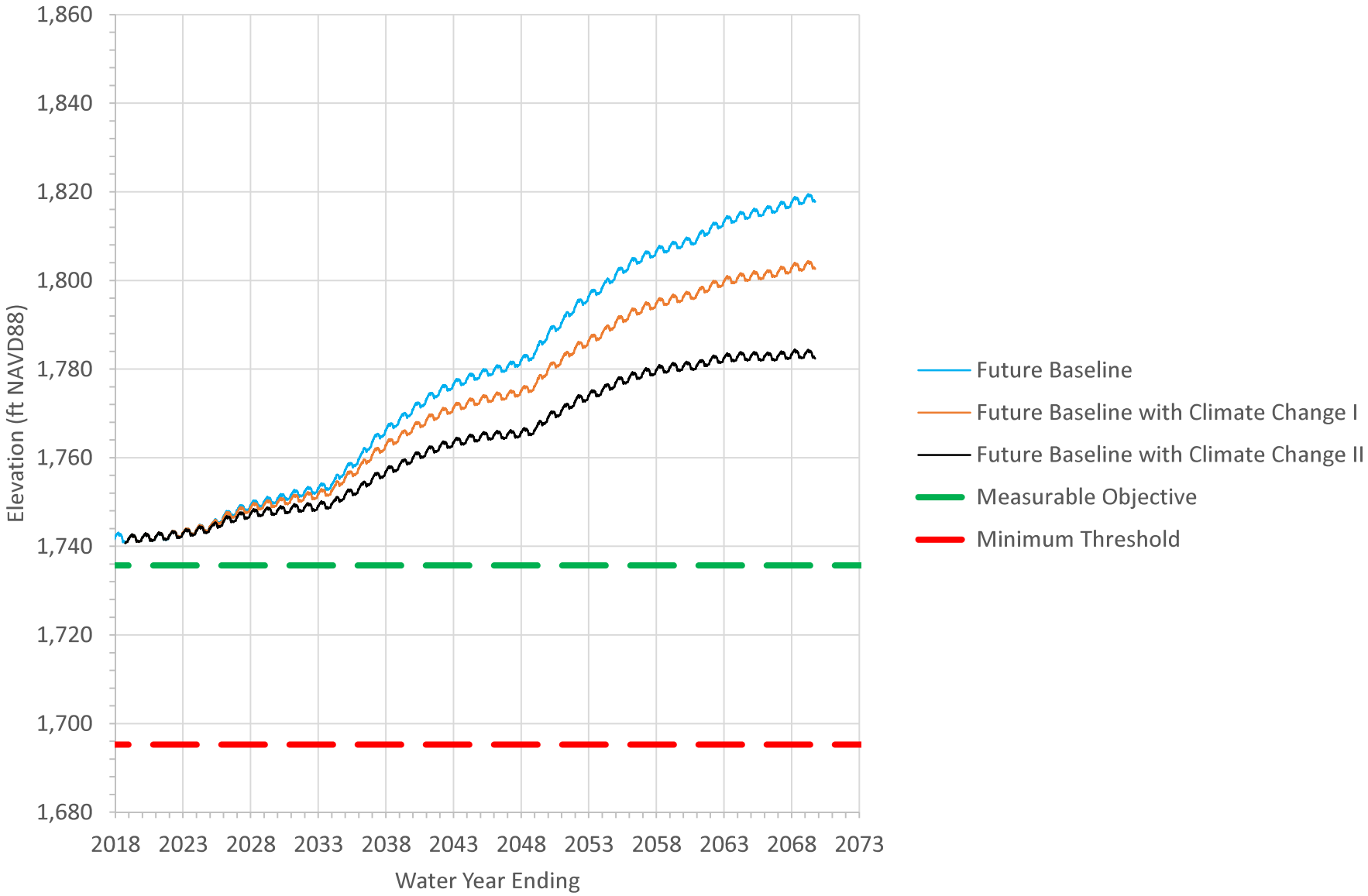
Figure 3-39. Groundwater Production and Supplemental Water Purchased in the Western Heights Management Area



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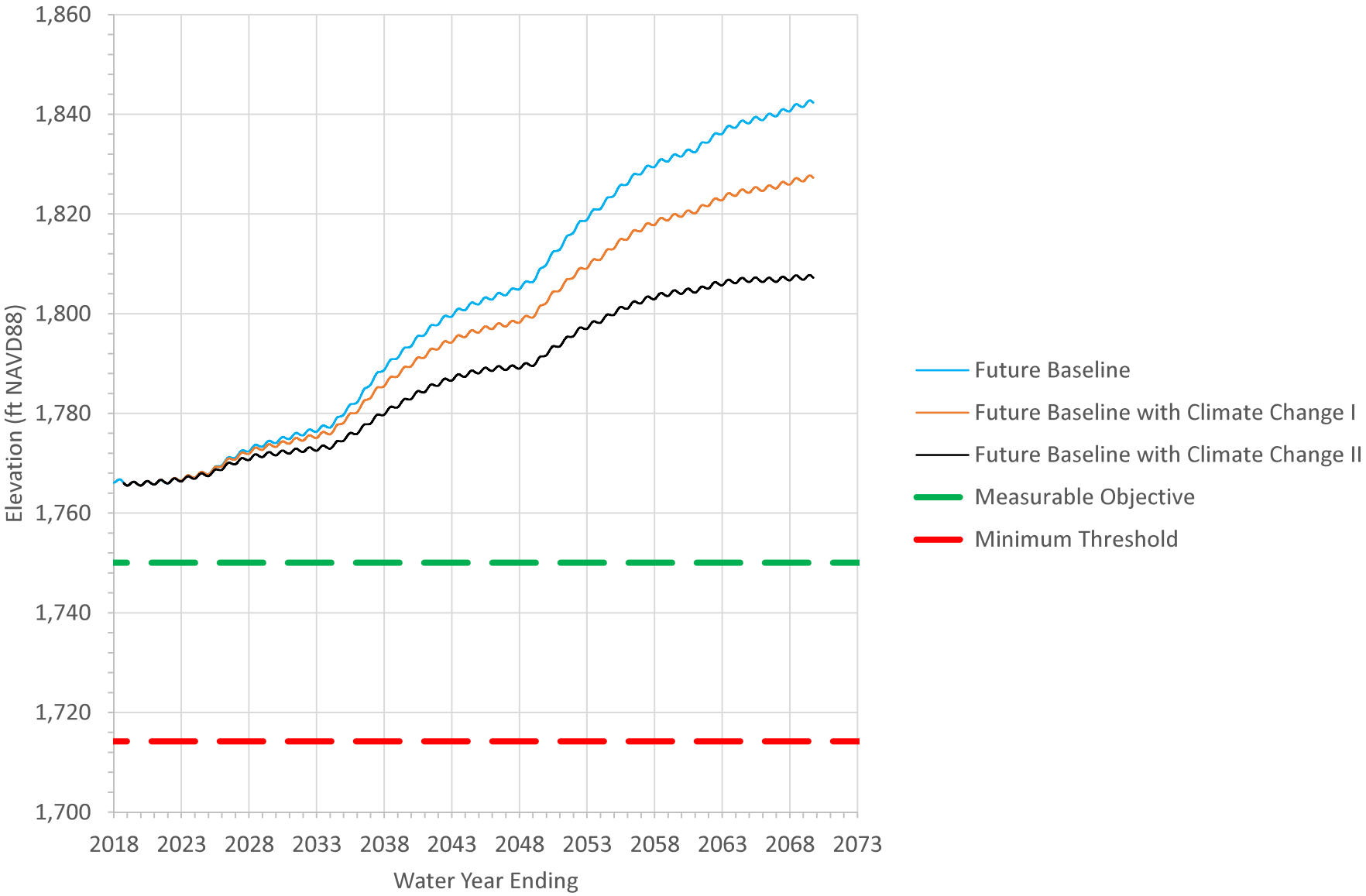
Figure 3-40. Predicted Simulated Hydraulic Heads at WHWC-02A in the Western Heights Management Area



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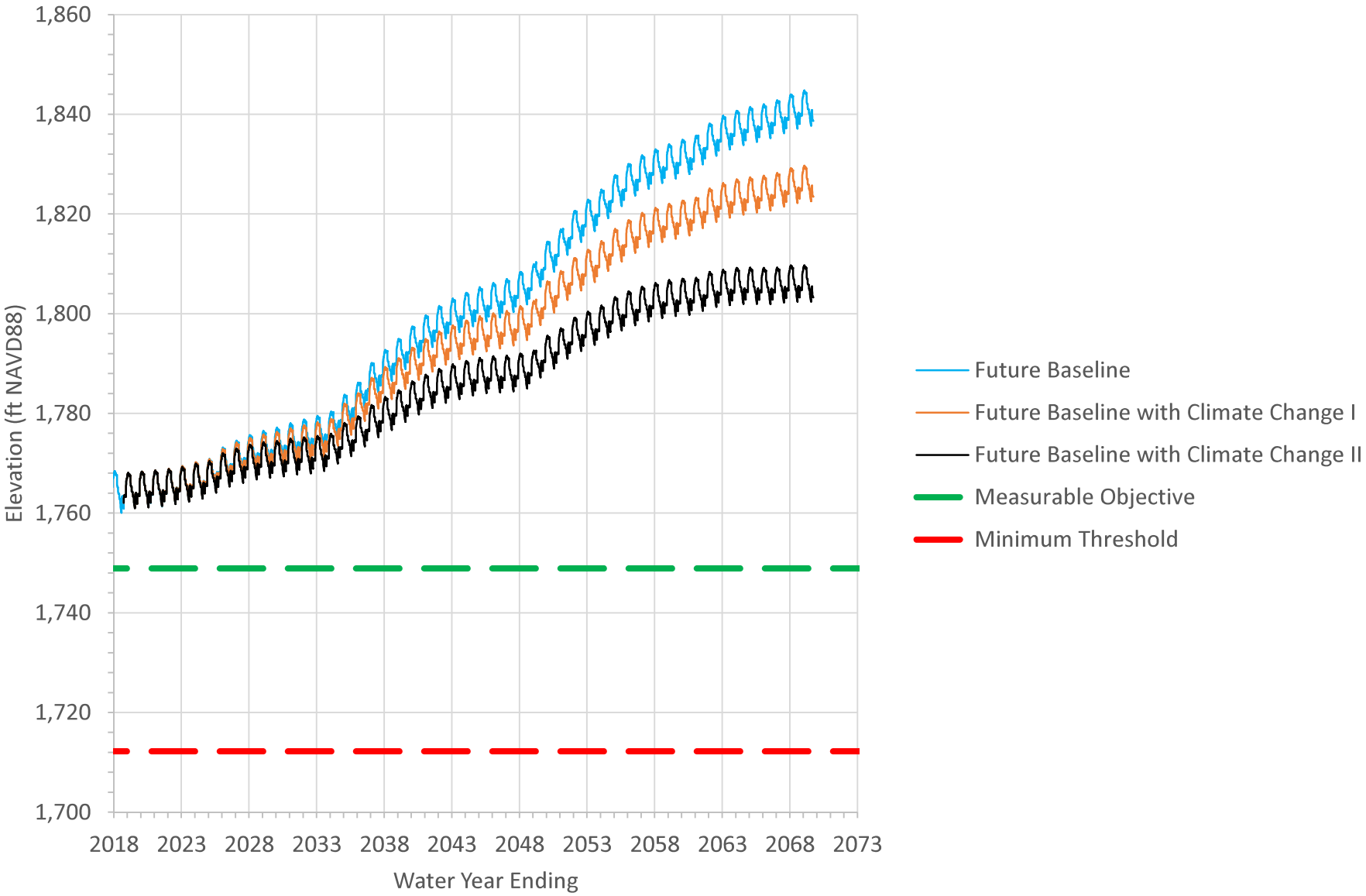
Figure 3-41. Predicted Simulated Hydraulic Heads at WHWC-10 in the Western Heights Management Area



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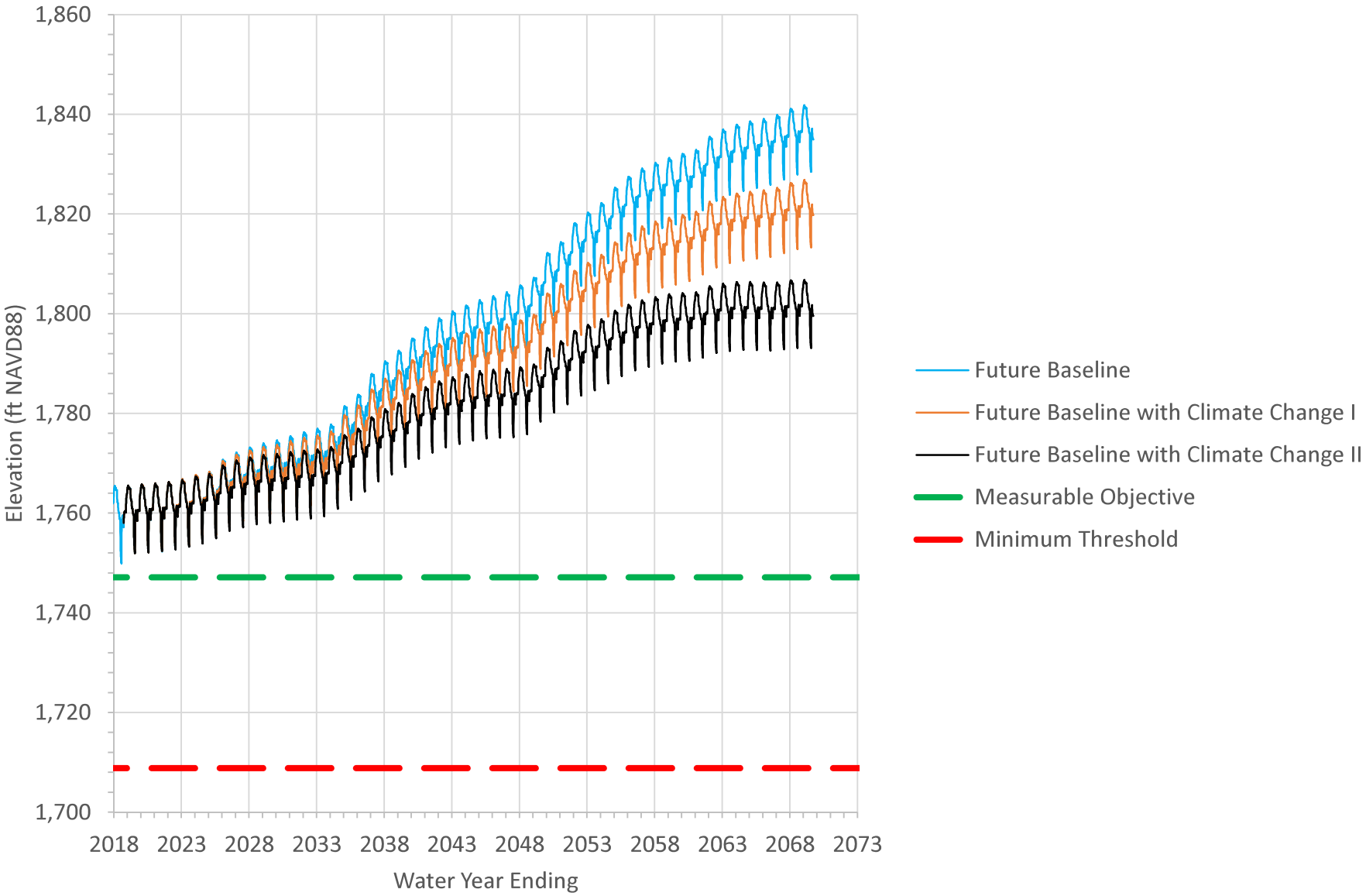
Figure 3-42. Predicted Simulated Hydraulic Heads at WHWC-11 in the Western Heights Management Area



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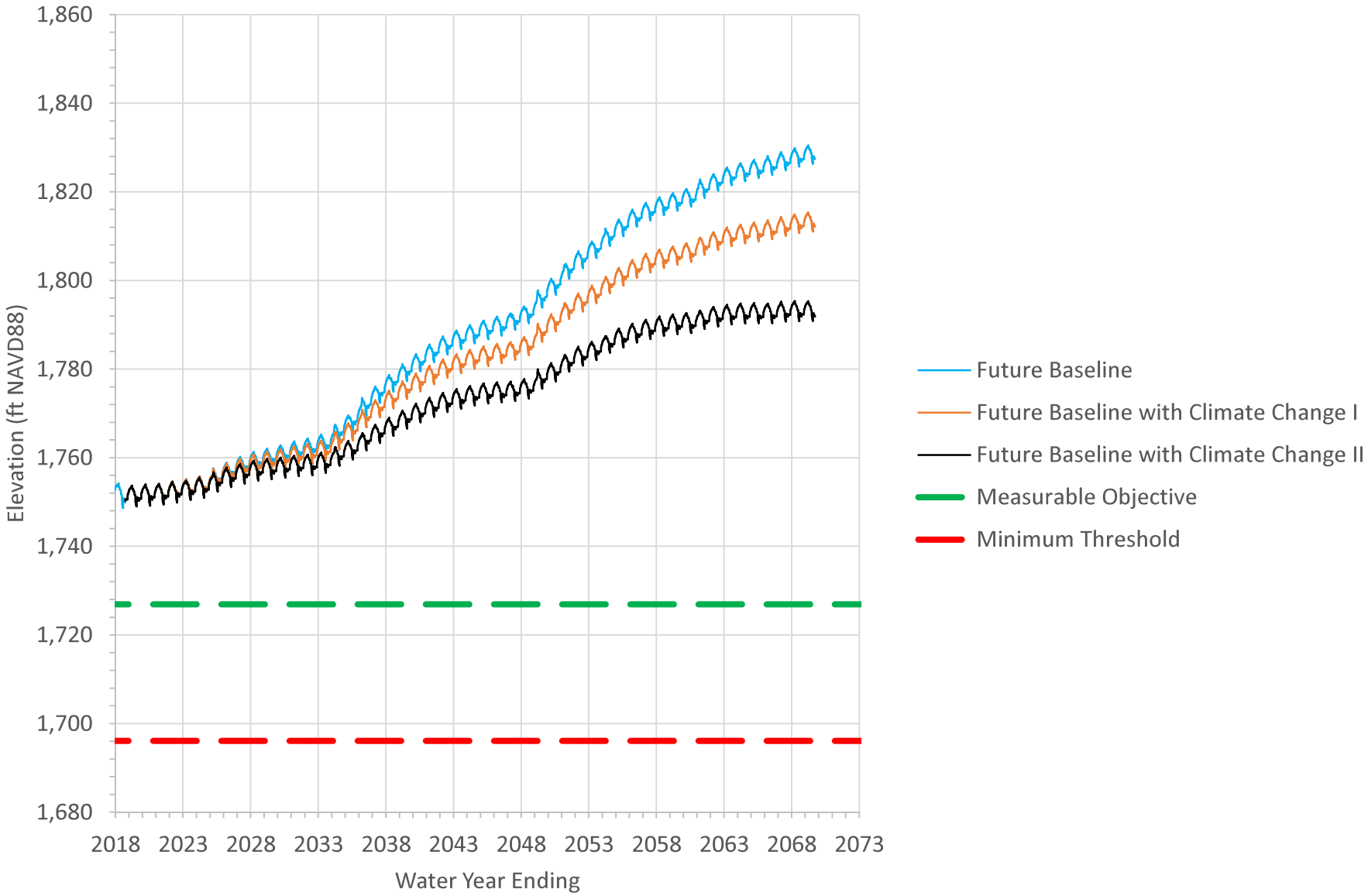
Figure 3-43. Predicted Simulated Hydraulic Heads at WHWC-12 in the Western Heights Management Area



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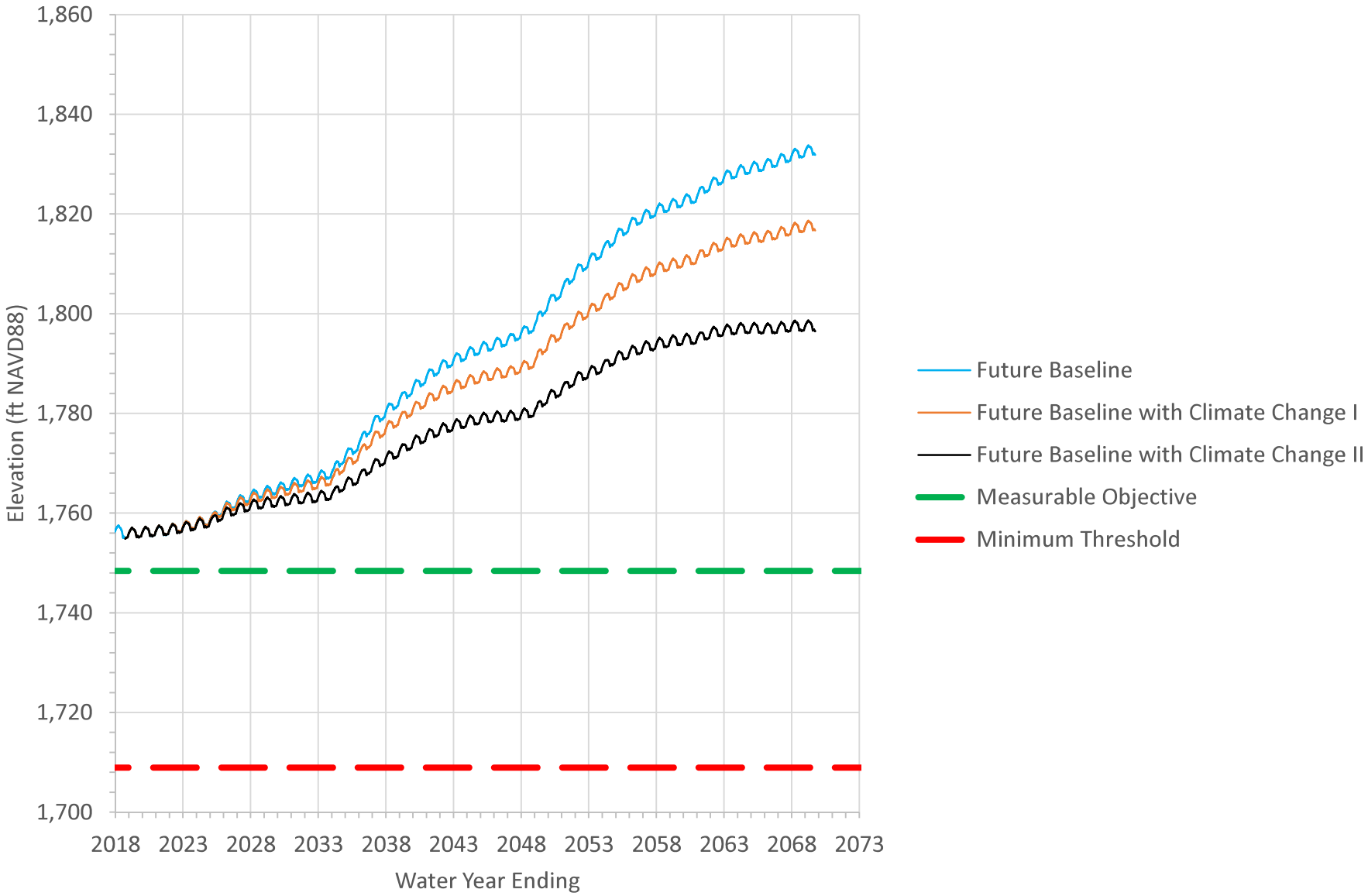
Figure 3-44. Predicted Simulated Hydraulic Heads at WHWC-14 in the Western Heights Management Area



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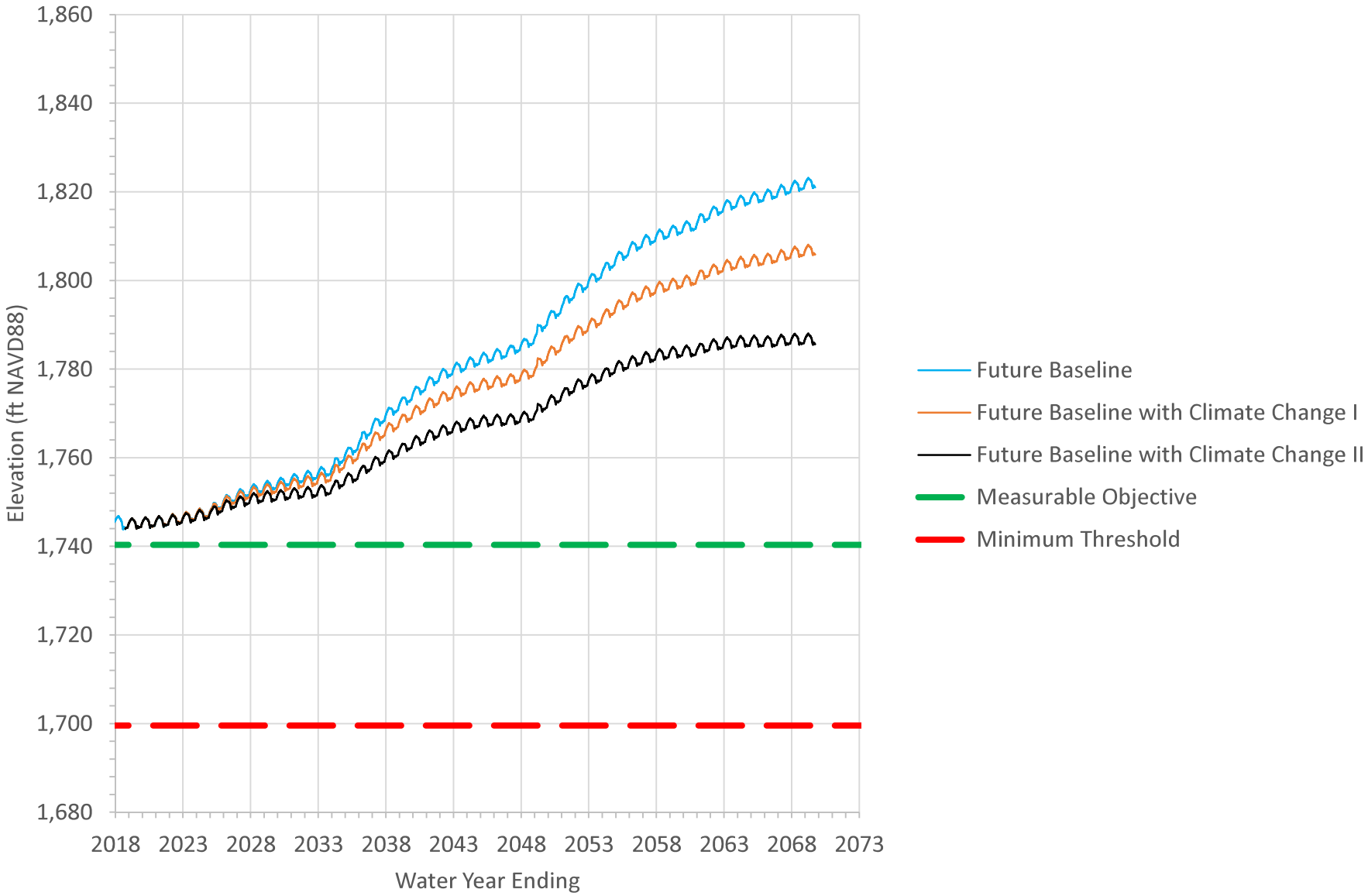
Figure 3-45. Predicted Simulated Hydraulic Heads at USGS Dunlap #2 Well in the Western Heights Management Area



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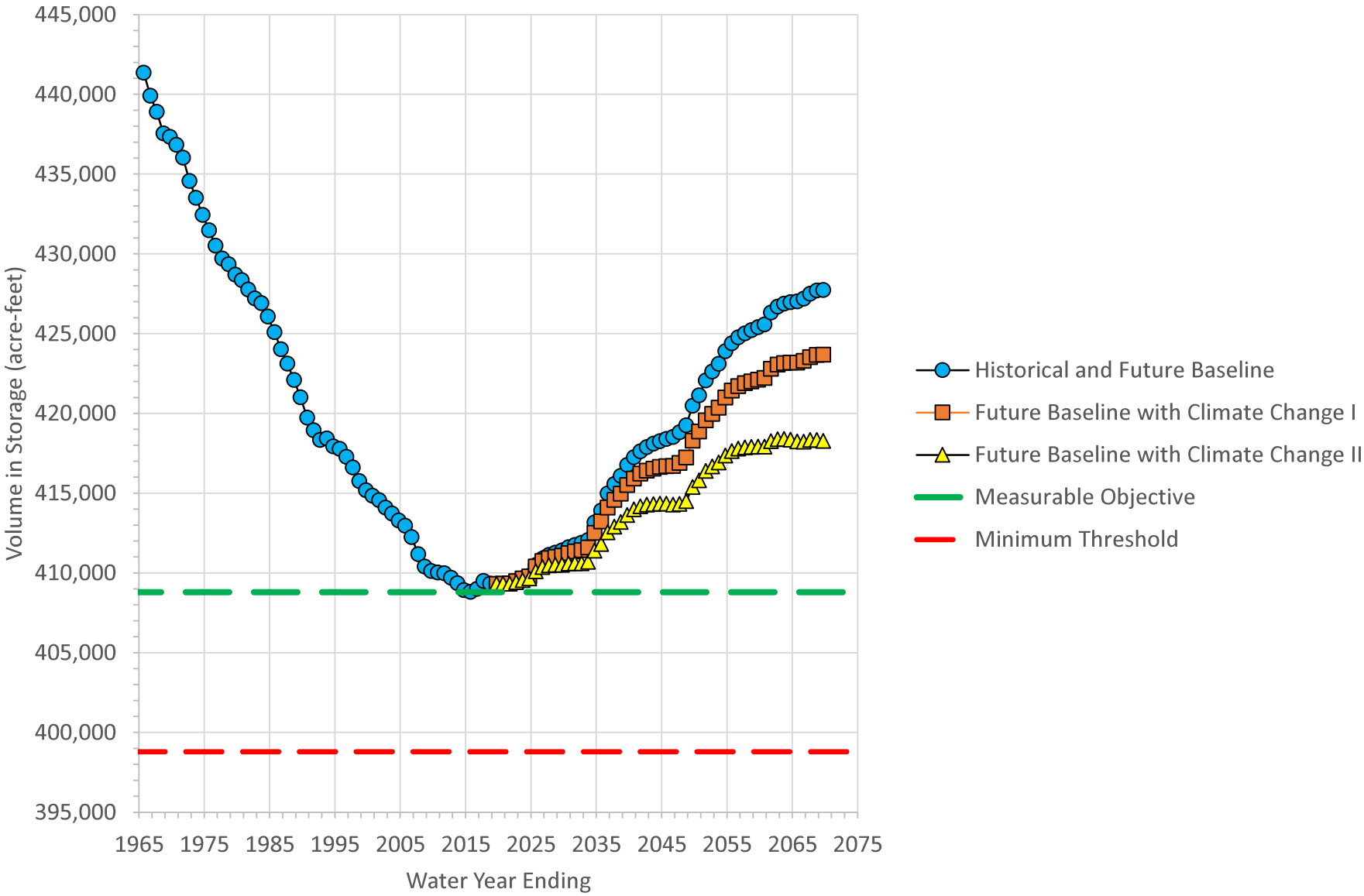
Figure 3-46. Predicted Simulated Hydraulic Heads at USGS Dunlap #4 Well in the Western Heights Management Area



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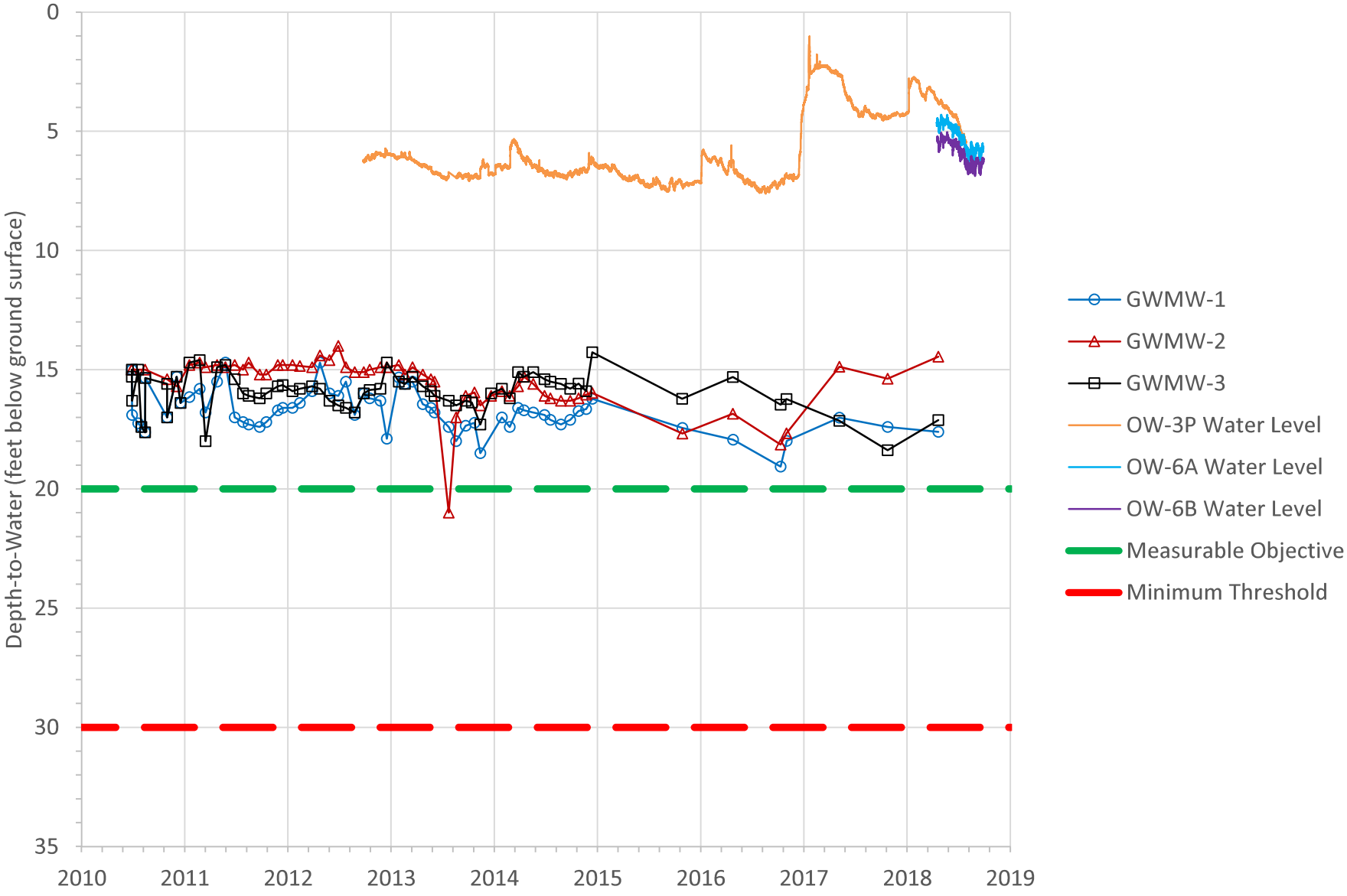
Figure 3-47. Predicted Volume in Storage by the Future Baseline and Future Baseline with Climate Change I and II Scenarios in the Western Heights Management Area



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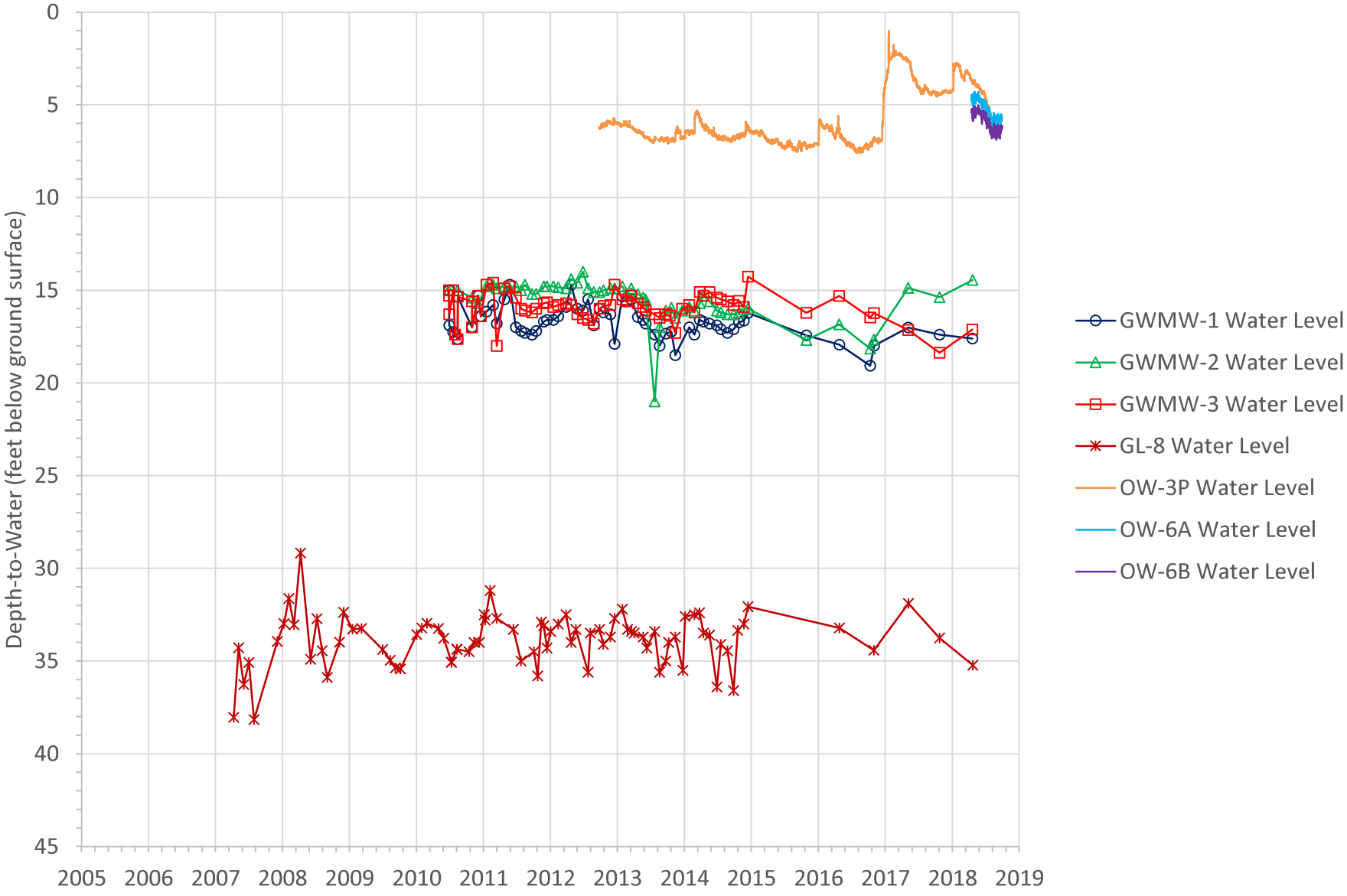
Figure 3-48. Groundwater Elevations and Sustainability Criteria for the San Timoteo Management Area



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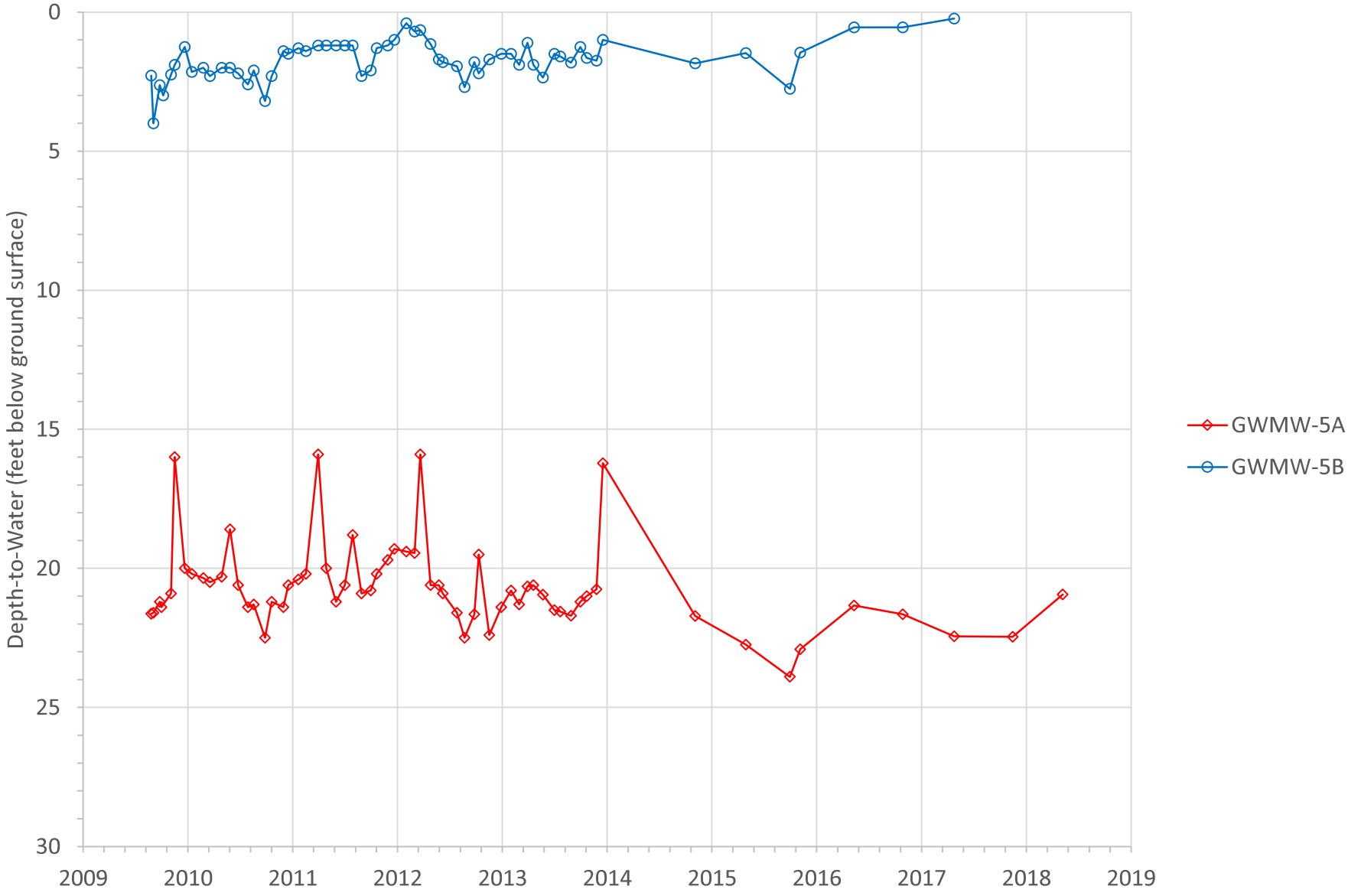
Figure 3-49. Historical Groundwater Elevations Measured in the San Timoteo Management Area



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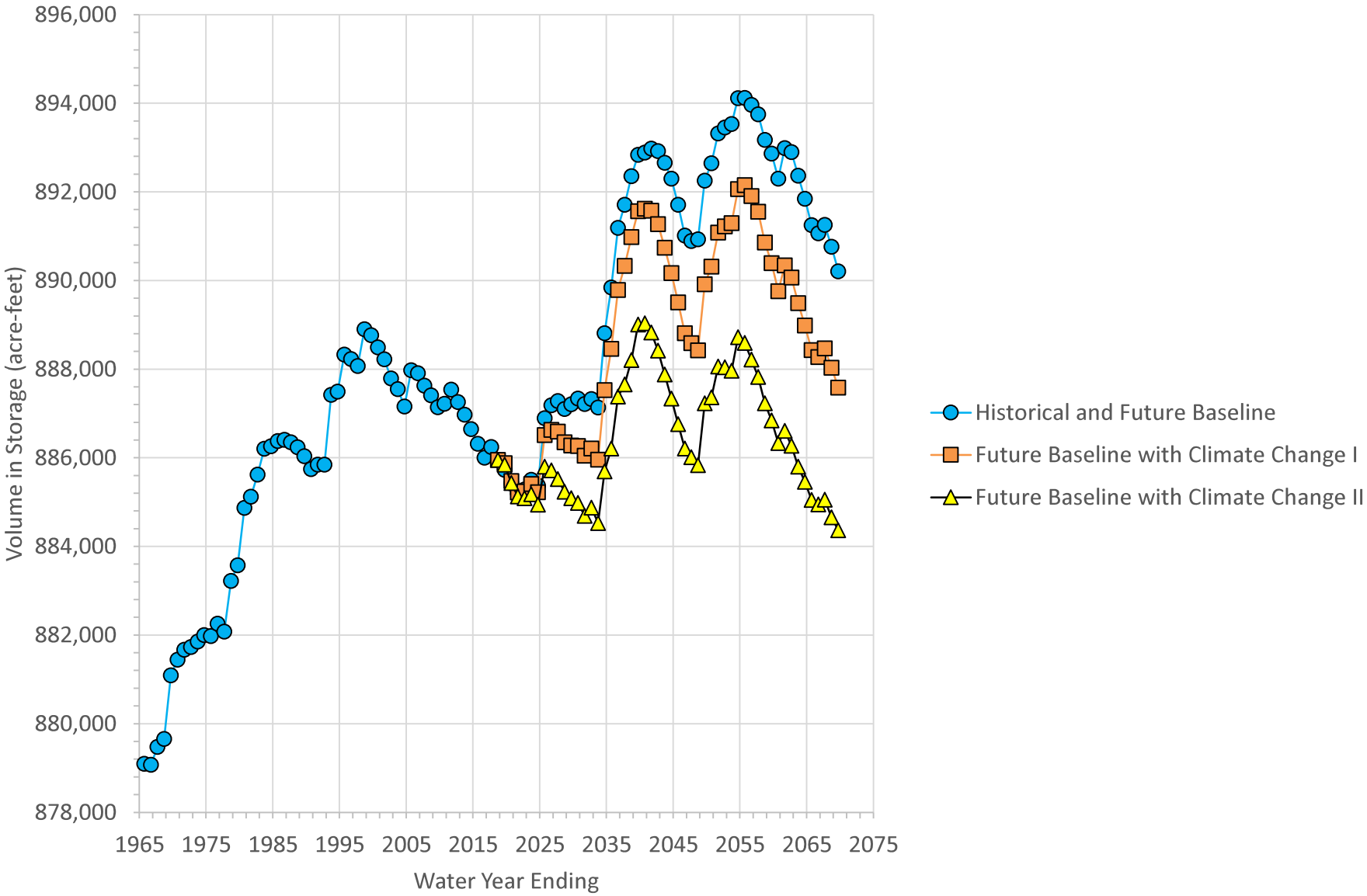
Figure 3-50. Groundwater Elevations at Nested Well GWMW-5 in the San Timoteo Management Area



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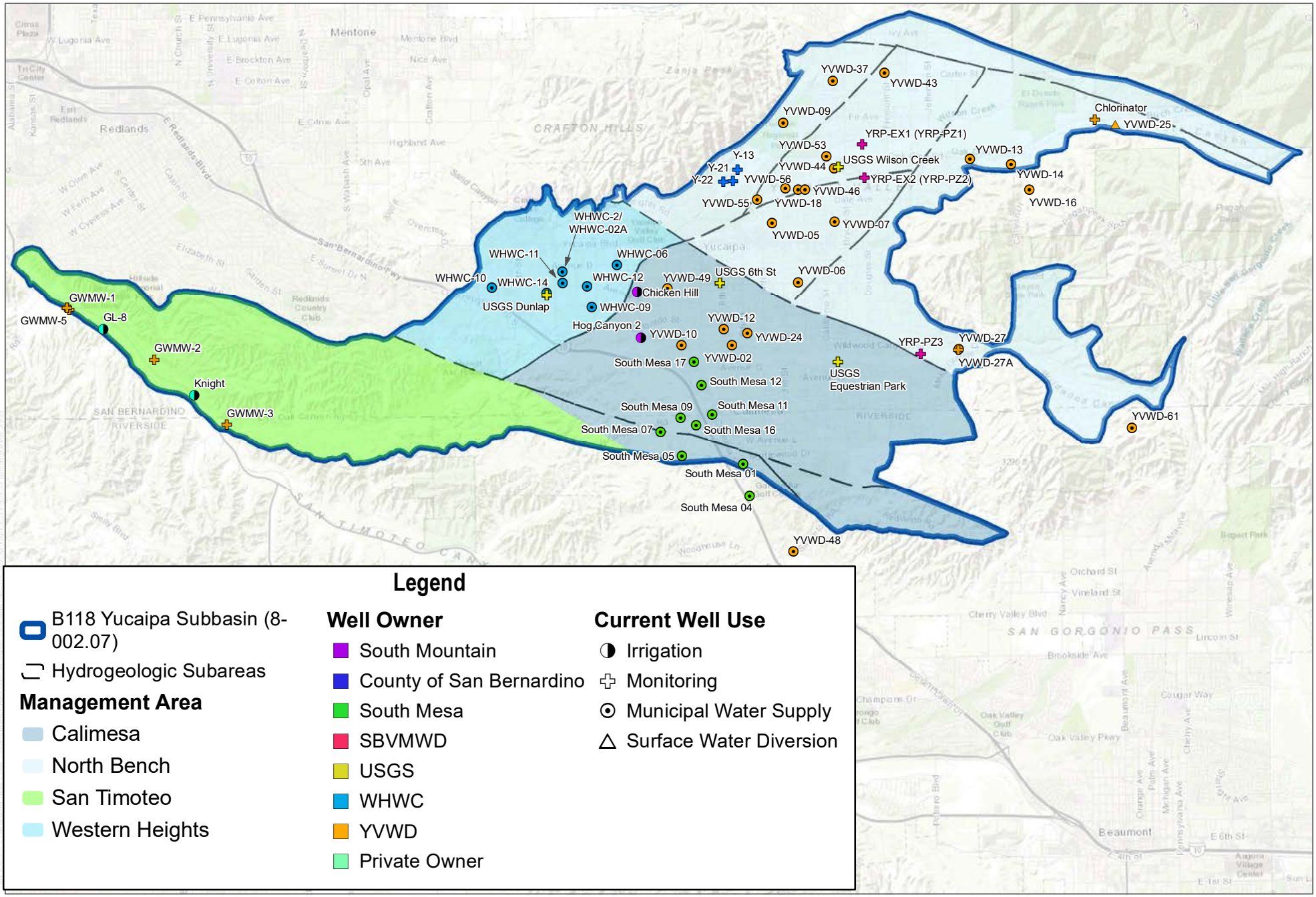
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Figure 3-51. Predicted Volume in Storage by the Future Baseline and Future Baseline with Climate Change I and II Scenarios in the San Timoteo Management Area



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SOURCE: SBVMWD, YVWD, WHWC, SMWC, City of Redlands, USGS

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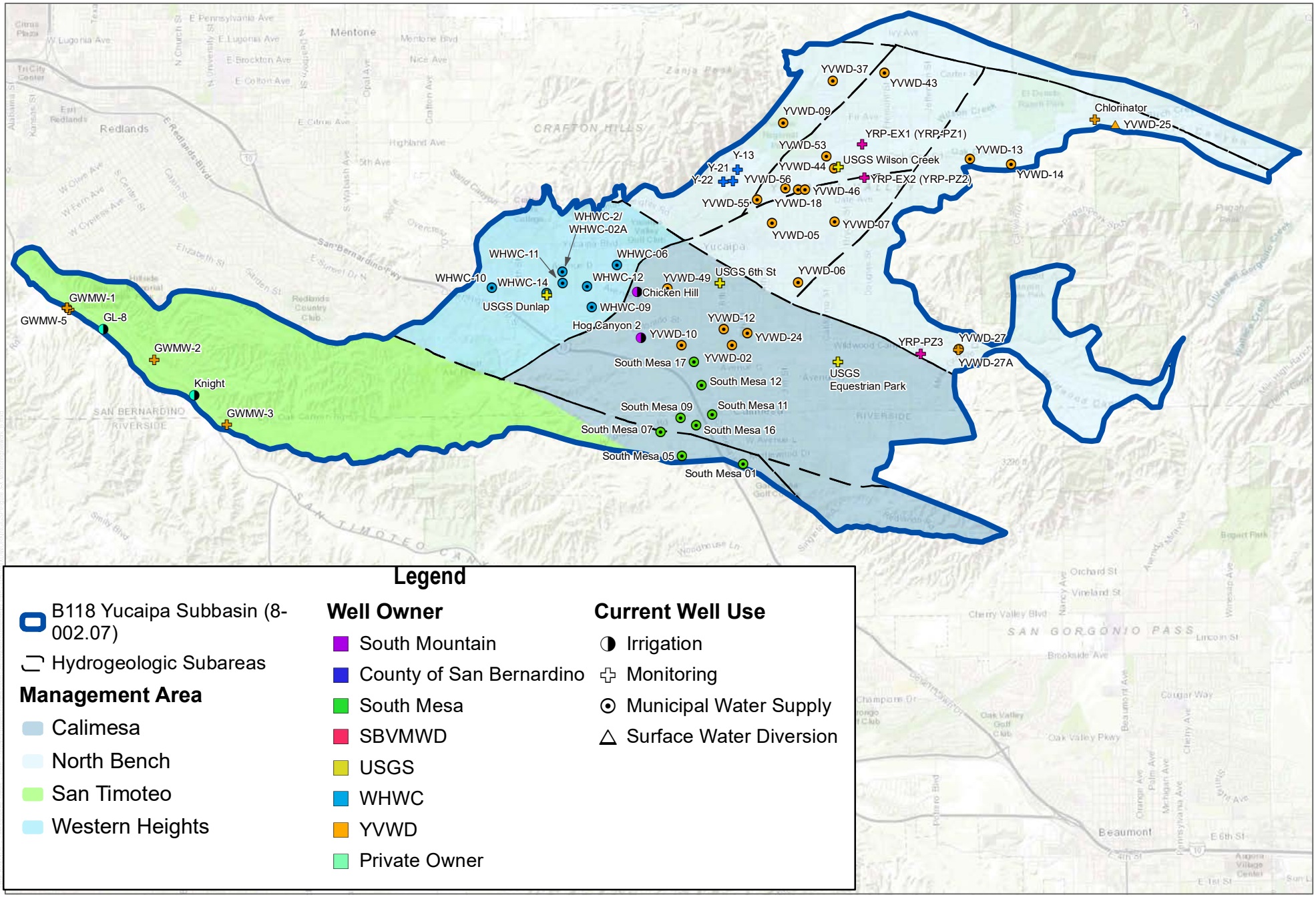
FIGURE 3-52

Yucaipa Subbasin Groundwater Monitoring Network

Yucaipa Subbasin Groundwater Sustainability Plan

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SOURCE: SBVMWD, YVWD, WHWC, SMWC, City of Redlands, USGS

FIGURE 3-53

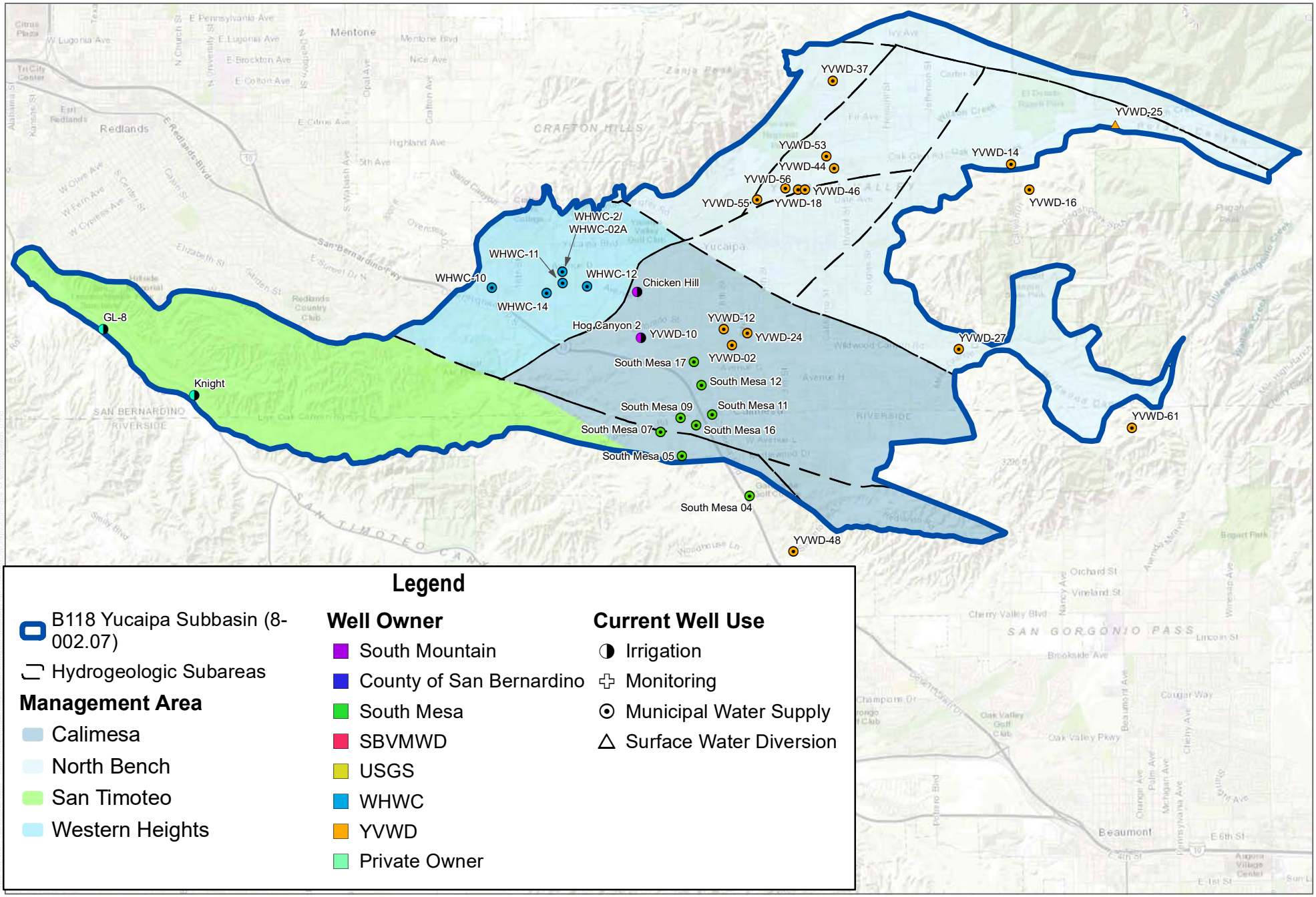
Monitoring Network Wells Designated to Measure Groundwater Elevations

Yucaipa Subbasin Groundwater Sustainability Plan

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SOURCE: SBVMWD, YVWD, WHWC, SMWC, City of Redlands, USGS

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0 0.5 1 Miles

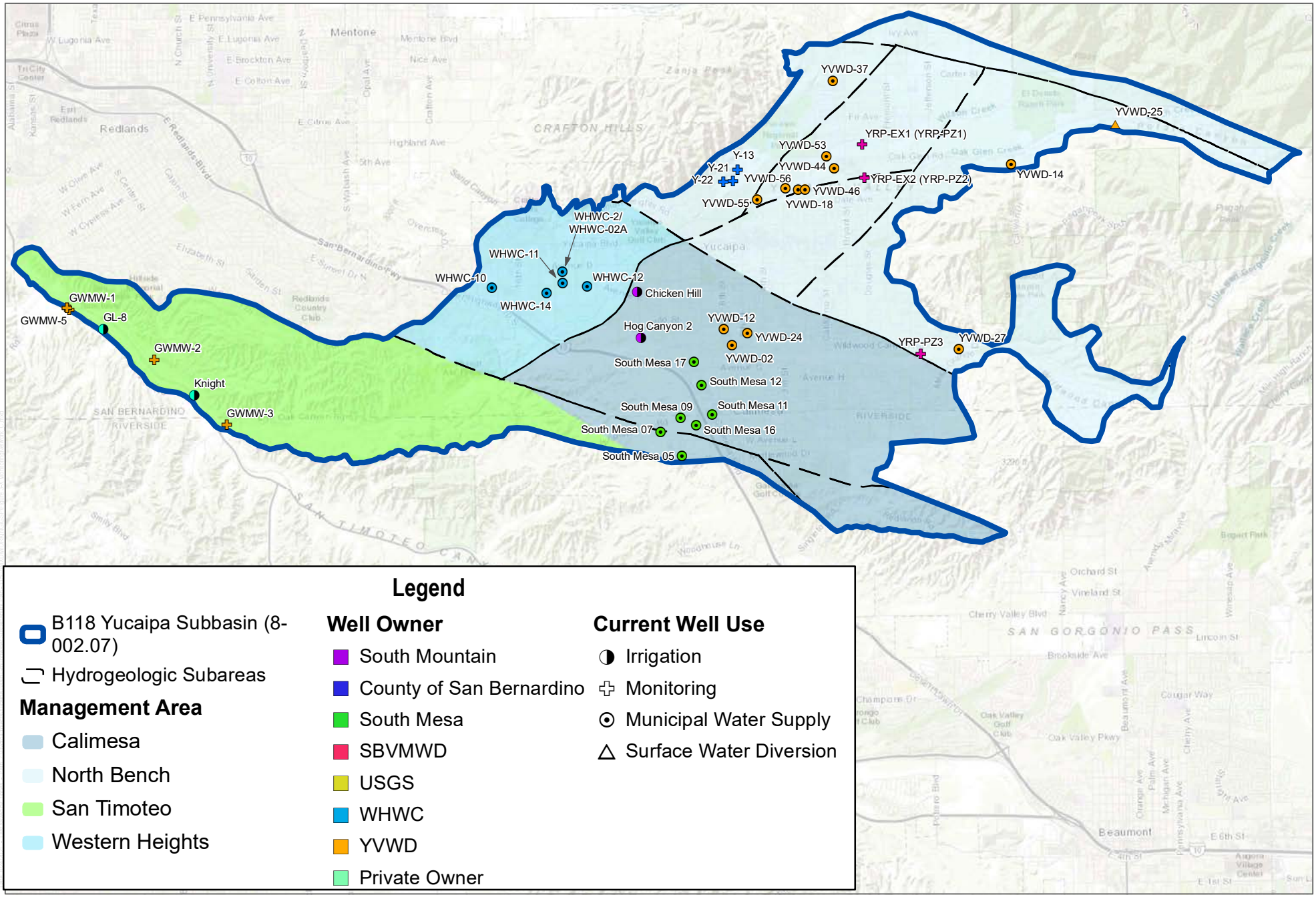
FIGURE 3-54

Monitoring Network Wells Designated to Measure Groundwater Production

Yucaipa Subbasin Groundwater Sustainability Plan

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SOURCE: SBVMWD, YVWD, WHWC, SMWC, City of Redlands, USGS

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0 0.5 1 Miles

FIGURE 3-55

Monitoring Network Wells Designated to Measure Groundwater Quality

Yucaipa Subbasin Groundwater Sustainability Plan

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4 Projects and Management Actions

4.1 Introduction to Projects and Management Actions

Sub article 5 of Article 5 of the California Code of Regulations (CCR) Division 2 Chapter 1.5 (23 CCR, Section 354.42–354.44) describes the criteria for projects and management actions to be included in a Groundwater Sustainability Plan (GSP) that will help achieve the sustainability goal established for the Plan Area over the planning and implementation horizon. Currently, the Yucaipa Subbasin is being managed sustainably. The importation of State Water Project (SWP) water as a supplemental source of water has allowed the water purveyors to reduce groundwater production in the Subbasin to below the estimated sustainable yield. Consequently, groundwater levels have recovered 50 to 200 feet in the past 10 years with groundwater storage increasing by approximately 18,000 AF (Section 2.8).

Future projections with groundwater production constrained to the estimated sustainable yield of 10,980 AFY, which is higher than the average annual extraction of 9,100 AFY observed from the 2014 WY to the-2018 WY period, indicate that the Yucaipa Subbasin will not experience undesirable results over the 50-year planning and implementation period. The simulated Future Baseline with Climate Change II scenario using the YIHM indicated that conditions in the Calimesa Management Area may decline below the measurable objective and trend toward the minimum threshold (Figure 3-35). Under such conditions that may be experienced in the Calimesa management area and throughout the Subbasin, the Yucaipa GSA has defined management actions that will be implemented to prevent undesirable results.

The management actions included in this Chapter document the actions that the Yucaipa GSA will implement in the event that groundwater elevations in one or more management areas decline below their respective measurable objectives and minimum thresholds. The management actions are not currently necessary to achieve sustainability in the Plan Area, which has experienced rising groundwater levels and increased groundwater in storage since 2008 (Section 2.7). However, the following management actions will be implemented, as necessary, to respond to declining conditions that deviate from the future predictions by the YIHM.

Currently, no projects have been identified as necessary to achieve groundwater sustainability in the Plan Area. Member agencies of the Yucaipa GSA have constructed spreading basins and stormwater capture basins, and are in the process of designing and constructing new ones, to enhance recharge to the Subbasin. The Wilson Creek and Oak Glen Creek spreading basins were designed to receive SWP water from the East Branch Extension and to capture major stormwater flows.

4.2 Management Actions

Minimum thresholds and measurable objectives were defined for the four management areas in the Plan Area. For the North Bench, Calimesa and Western Heights management areas, minimum thresholds were defined at either the historical low in groundwater elevations in the North Bench Management Area, or below historical lows in the Calimesa and Western Heights management areas. The minimum threshold and measurable objective for the San Timoteo management area were defined to prevent significant and unreasonable effects on groundwater-dependent ecosystems (GDEs) identified along San Timoteo Creek. A drought buffer was defined for the North Bench, Calimesa and Western Heights management areas to provide operational flexibility between their respective measurable objectives and minimum thresholds.

4.2.1 Management Action No. 1 – Reduce Net Use of Groundwater When Groundwater Levels Decline below Measurable Objectives

The drought buffers established for the North Bench, Calimesa and Western Heights management areas provide operational flexibility to implement management actions when groundwater conditions decline below their respective measurable objectives (Section 3.4). The following management actions for these three management areas will prevent undesirable results related to the chronic lowering of groundwater levels, reduction in groundwater storage, and land subsidence. The management action implemented when groundwater levels decline below the measurable objective for the San Timoteo management area will prevent significant and unreasonable effects resulting in a loss in surface water interconnected with shallow groundwater that sustain GDEs.

4.2.1.1 North Bench Management Area

The North Bench management area includes eight RMPs each associated with a groundwater elevation representing the measurable objective at 230,000 AF in storage and the minimum threshold at 220,000 AF in storage (Table 3-3). Currently, groundwater levels are 50 feet to 130 feet above the measurable objective levels designated at the RMPs (Table 4-1).

Table 4-1. Groundwater Elevations Pertaining to Management Actions for the North Bench Management Area

Representative Monitoring Point	Current Groundwater Elevations (feet NAVD88)	Groundwater Elevations at the Minimum Threshold (feet NAVD88)	Groundwater Elevations at the Measurable Objective (feet NAVD88)
YVWD-06	2,359.99	2,255.47	2,276.91
YVWD-07	2,435.42	2,239.38	2,318.07
YVWD-37	2,585.64	2,503.91	2,527.68
YVWD-46	2,357.42	2,209.32	2,228.73
YVWD-53	2,446.53	2,315.55	2,337.17
YVWD-56	2,426.23	2,269.24	2,291.03
USGS Wilson Creek #1 (820'-840')	2,455.55	2,300.24	2,329.25
USGS Wilson Creek #4 (350'-370')	2,482.04	2,317.09	2,349.27
Average	**2,443.60**	**2,301.27**	**2,332.26**

The YIHM predicts that future groundwater elevations with groundwater production constrained to the estimated sustainable yield of 3,940 AFY will remain above the measurable objective levels associated with each RMP (Figures 3-7 to 3-14). However, the following conditions will trigger management actions to be implemented by the Yucaipa GSA:

1) If groundwater elevations decline below the measurable objective levels at 50% or more of the RMPs (Table 4-1) for 2 consecutive years, then the following management action will be implemented:
   a) The net use of groundwater from the North Bench management area will decrease by 25% of the estimated sustainable yield of 3,940 AFY, or by 990 AFY. The Yucaipa GSA will implement this management action by either reducing groundwater production by 990 AFY, artificially recharging the aquifer with an additional 990 AFY of supplemental water, enacting water conservation programs or other programs that result in a net reduction of groundwater use by 990 AFY, or any combination of these actions that result in a net reduction of groundwater use by 990 AFY. Because the management area is not experiencing or is expected to experience conditions below the measurable objective through the 50-year planning and implementation horizon, no interim milestones are defined in this GSP. However, if conditions do develop and this management action is implemented, then the Yucaipa GSA will identify interim milestones at that time to evaluate progress in achieving groundwater sustainability.
   b) The 25% net reduction in groundwater use, which may be achieved with a reduction in groundwater production from 3,940 AFY to 2,950 AFY, was selected because historical data indicated that, when groundwater production was at 3,000 AFY or less, groundwater levels and the volume in storage were stable or increased during periods of "below normal" to "wet" water year types (Figures 2-3, 3-3, and 3- 6). The Yucaipa GSA, at its discretion, may modify the 25% reduction (e.g., implement a higher percentage of reduction) if this rate is not sufficient to improve conditions in the management area and avoid undesirable results.
   c) Implementing this management action will also require the Yucaipa GSA to reevaluate and, possibly, recalibrate the YIHM to improve the accuracy of the model in predicting future conditions. This action will be implemented if the occurrence is outside the scheduled 5-year evaluation, which already includes a reevaluation of the YIHM.
2) If conditions continue to decline and groundwater elevations at 50% or more of the RMPs fall below their respective minimum threshold levels (Table 4-1) for 2 consecutive years, then the following management action will be implemented:
   a) The net use of groundwater from the North Bench management area will decrease by 35% of the estimated sustainable yield of 3,940 AFY, or by 1,380 AFY. The Yucaipa GSA will achieve this management action by either reducing groundwater production by 1,380 AFY, artificially recharge the aquifer with an additional 1,390 AFY of supplemental water, enact water conservation programs or other programs that result in a net reduction of groundwater withdrawal by 1,380 AFY, or any combination of these actions that result in a net reduction of groundwater withdrawal by 1,380 AFY. Because the management area is not experiencing or is expected to experience conditions below the minimum threshold through the 50-year planning and implementation horizon, no interim milestones are defined in this GSP. However, if conditions do fall below the minimum threshold and this management action is implemented, then the Yucaipa GSA will identify interim milestones at that time to evaluate progress in improving conditions to achieve groundwater sustainability.
   b) The 35% net reduction in groundwater use, which may represent a reduction in groundwater production to 2,560 AFY, was selected because historical data indicated that, when groundwater production was at 2,600 AFY or less, groundwater levels and the volume in storage were stable or increased during periods

of "dry" to "wet" water year types (Figures 2-3, 3-3, and 3-6). The Yucaipa GSA, at its discretion, may modify the 35% reduction (e.g., implement a higher percentage of reduction) if this rate is not sufficient to improve conditions in the management area.

4.2.1.1.1 Measurable Objective Expected to Benefit

The measurable objective established for the sustainability indicators of chronic lowering of groundwater levels, reduction in groundwater storage, and land subsidence would benefit from the implementation of this management action. The goal of the management action is to reduce the net use of groundwater from the management area by 25% to 35% of the estimated sustainable yield until conditions improve to the measurable objective where the management area is managed sustainably.

4.2.1.1.2 Expected Benefits and Evaluation

The sustainability criteria established for the North Bench management area were designed to protect the long-term groundwater supply and maintain production for the existing wells operated by YVWD and private users. The establishment of a drought buffer, represented by a range in the volume in storage from 220,000 to 230,000 AF, provides operational flexibility for the Yucaipa GSA to implement these management actions to avoid or improve conditions from undesirable results. These actions allow the management area to recover during "dry" to "wet" water year types when recharge, either naturally or artificially, or both, will exceed the net withdrawal of groundwater.

Groundwater in storage will increase and chronic declines in groundwater elevation will cease or reverse with a net reduction in groundwater withdrawal from the management area. Groundwater in storage will be measured using groundwater elevations as a proxy. If groundwater elevations stabilize, or rise at the groundwater level RMPs, the management action will have succeeded in increasing the volume of groundwater in storage and prevented the chronic decline in groundwater levels. Conditions at the measurable objective or higher are at or above the historical low, which will negate the undesirable result of land subsidence potentially occurring due to a long-term groundwater level decline below the historical low.

4.2.1.1.3 Circumstances for Implementation

This management action would be implemented under the following circumstances:

1. When groundwater levels measured at 50% or more of the RMPs fall below their respective measurable objective levels for 2 consecutive years, or
2. When groundwater levels measured at 50% or more of the RMPs fall below their respective minimum threshold levels for 2 consecutive years.

4.2.1.1.4 Public Noticing

Public noticing is not required for this management action, which would be undertaken under the Yucaipa GSA's authority to control groundwater withdrawals from the Plan Area, including the North Bench management area. The Yucaipa GSA will notify private well owners that will be affected by the implementation of this management action if it requires a reduction in their respective groundwater production.

4.2.1.1.5 Permitting and Regulatory Process

No additional permitting or regulatory oversight is necessary to implement this management action, which would be undertaken under the Yucaipa GSA's authority per Water Code, Section 10726.4.

4.2.1.1.6 Implementation Schedule

There is no specific implementation schedule for this management action as projected groundwater levels indicate this management action will not be required. The Yucaipa GSA will implement this management action within six months of determining that one of the criteria for implementation described in Section 4.2.1.1.3 has been met.

4.2.1.1.7 Legal Authority

The Yucaipa GSA has the legal authority to operate and regulate the production from water supply wells in the Plan Area per Water Code, Section 10726.4; and to import surface water (e.g., SWP water) or other supplemental water to artificially recharge the Subbasin per Water Code, Section 10726.2. No additional legal authority is required.

4.2.1.1.8 Estimated Costs

The costs associated with the implementation of this management action have not yet been estimated. However, if this management action is implemented and groundwater production is decreased, then additional costs may be incurred by YVWD (the only water purveyor operating in the North Bench management area), or its respective customers, to supply additional supplemental water, enact water conservation programs, or other actions to meet water demands.

4.2.1.2 Calimesa Management Area

The Calimesa management area includes 13 RMPs; each is associated with groundwater elevations representing the measurable objective at 798,700 AF and the minimum threshold at 772,700 AF in storage (Table 3-4; Table 4-2). The measurable objective is represented by the historical low condition and indicates that no undesirable results are occurring in the management area.

Table 4-2. Groundwater Elevations Pertaining to Management Actions for the Calimesa Management Area

Representative Monitoring Point	Current Groundwater Elevations (feet NAVD88)	Groundwater Elevations at the Measurable Objective (Tier 1 in the Drought Buffer) (feet NAVD88)	Groundwater Elevations at Tier 2 in the Drought Buffer (feet NAVD88)	Groundwater Elevations at Tier 3 in the Drought Buffer (feet NAVD88)	Estimated Measured Groundwater Elevations at the Minimum Threshold (feet NAVD88)
Hog Canyon 2	2,090.13	2,083.77	2,063.66	2,040.10	2,021.82
South Mesa 07	2,062.73	2,044.08	2,022.66	2,000.74	1,982.14
South Mesa 09	2,068.70	2,024.19	1,993.77	1,972.09	1,958.58
South Mesa 12	2,095.74	2,080.33	2,059.58	2,036.88	2,018.27
South Mesa 17	2,092.77	2,068.72	2,048.20	2,024.96	2,006.30

Table 4-2. Groundwater Elevations Pertaining to Management Actions for the Calimesa Management Area

Representative Monitoring Point	Current Groundwater Elevations (feet NAVD88)	Groundwater Elevations at the Measurable Objective (Tier 1 in the Drought Buffer) (feet NAVD88)	Groundwater Elevations at Tier 2 in the Drought Buffer (feet NAVD88)	Groundwater Elevations at Tier 3 in the Drought Buffer (feet NAVD88)	Estimated Measured Groundwater Elevations at the Minimum Threshold (feet NAVD88)
USGS 6th St #1 (870 feet to-930 feet')	2,133.89	2,121.89	2,101.45	2,078.07	2,058.61
USGS 6th Street #4 (380 feet to-400 feet)	2,170.93	2,175.05	2,165.66	2,146.93	2,127.70
USGS Equestrian Park #1 (830'-850')	2,203.28	2,203.61	2,197.82	2,186.96	2,173.37
USGS Equestrian Park #4 (380'-400')	2,206.59	2,207.39	2,201.74	2,190.86	2,176.87
YVWD-10	2,087.74	2,076.79	2,056.62	2,033.14	2,014.16
YVWD-12	2,094.66	2,081.92	2,062.26	2,037.96	2,020.26
YVWD-24	2,184.66	2,120.42	2,100.29	2,075.90	2,061.63
YVWD-49	2,082.24	2,076.94	2,056.68	2,033.31	2,014.03
Average	**2,121.08**	**2,105.01**	**2,086.95**	**2,065.99**	**2,048.75**

The YIHM predicts that future groundwater elevations with groundwater production constrained to the estimated sustainable yield of 4,955 AFY will remain above the minimum threshold levels associated with each RMP, but will fall below the measurable objective levels under the Future Baseline with Climate Change II scenario (Figures 3-22 to 3-34). The following conditions will trigger management actions to be implemented by the Yucaipa GSA:

1) If groundwater elevations decline at 50% or more of the RMPs below their respective measurable objective levels for two consecutive years, then the following management action will be implemented:
   a) The net use of groundwater from the Calimesa management area will be reduced under a three-tier structure depending on the volume of groundwater in storage below the historical low of 798,700 AF. Actions to be implemented under the three-tier structure are as follows:
      i) The first tier extends from 798,700 to 790,700 AF, or the top 8,000 AF in the drought buffer (Figure 4-1). Groundwater elevations at the RMPs that represent the historical low (i.e., the top of tier 1) range from 2,024 to 2,204 feet NAVD88 (Table 4-2). If groundwater elevations decline at 50% or more of the RMPs below their respective tier 1 levels for two consecutive years, then a net reduction in groundwater use by 5% of the estimated sustainable yield of 4,955 AFY, or by 250 AFY, is required. The Yucaipa GSA will implement this management action by either reducing groundwater production by 250 AFY,

artificially recharging the aquifer with an additional 250 AFY of supplemental water, enacting water conservation programs or other programs that result in a net reduction of groundwater use by 250 AFY, or any combination of these actions that result in a net reduction of groundwater use by 250 AFY. Currently, no interim milestones are defined because the management area is managed sustainably and conditions are at or above the measurable objective. However, if conditions decline to this first tier in the drought buffer, then this management action would be implemented and the Yucaipa GSA will identify interim milestones at that time to evaluate progress in achieving groundwater sustainability.

ii) The second tier extends from 790,700 to 781,700 AF, or for 9,000 AF below the first tier in the drought buffer (Figure 4-1). Groundwater elevations at the RMPs that represent the top of tier 2 range from 1,994 to 2,202 feet NAVD88 (Table 4-2). If groundwater elevations decline at 50% or more of the RMPs below their respective tier 2 levels for two consecutive years, then a net reduction in groundwater use by 10% of the estimated sustainable yield of 4,955 AFY, or by 500 AFY, is required. The Yucaipa GSA will implement this management action by either reducing groundwater production by 500 AFY, artificially recharge the aquifer with an additional 500 AFY of supplemental water, enact water conservation programs or other programs that result in a net reduction of groundwater use by 500 AFY, or any combination of these actions that result in a net reduction of groundwater use by 500 AFY. Currently, no interim milestones are defined because the management area is managed sustainably and conditions are at or above the measurable objective. However, if conditions decline to this second tier in the drought buffer, then this management action would be implemented and the Yucaipa GSA will identify interim milestones at that time to evaluate progress in achieving groundwater sustainability.

iii) The third tier extends from 781,700 to 772,700 AF, or the bottom 9,000 AF in the drought buffer (Figure 4-1). Groundwater elevations at the RMPs that represent the top of tier 3 range from 1,972 to 2,191 feet NAVD88 (Table 4-2). If groundwater elevations decline at 50% or more of the RMPs below their respective tier 3 levels for two consecutive years, then a net reduction in groundwater use by 15% of the estimated sustainable yield of 4,955 AFY, or by 750 AFY, is required. The Yucaipa GSA will implement this management action by either reducing groundwater production by 750 AFY, artificially recharge the aquifer with an additional 750 AFY of supplemental water, enact water conservation programs or other programs that result in a net reduction of groundwater use by 750 AFY, or any combination of these actions that result in a net reduction of groundwater use by 750 AFY. Currently, no interim milestones are defined because the management area is managed sustainably and conditions are at or above the measurable objective. However, if conditions decline to this third tier in the drought buffer, then this management action would be implemented and the Yucaipa GSA will identify interim milestones at that time to evaluate progress in achieving groundwater sustainability.

b) The 5% to 15% net reduction in groundwater use was selected because historical data indicated that, when groundwater production was at these rates or less, groundwater levels and the volume in storage were stable or increased during periods of "dry" to "wet" water year types (Figures 2-3, 3-19 and 3-21). The Yucaipa GSA, at its discretion, may modify the 5% to 15% reduction (e.g., implement a higher percentage of reduction) if these rates are not sufficient to improve conditions in the management area and avoid undesirable results.

c) Implementing this management action will also require the Yucaipa GSA to reevaluate and, possibly, recalibrate the YIHM to improve the accuracy of the model in predicting future conditions. This action will be implemented if the occurrence is outside the scheduled 5-year evaluation, which already includes a reevaluation of the YIHM.

2) If conditions continue to decline and groundwater elevations at 50% or more of the RMPs fall below their respective minimum threshold levels for two consecutive years, then the following management action will be implemented:
    a) Groundwater elevations at the RMPs that represent the minimum threshold range from 1,959 to 2,177 feet NAVD88 (Table 4-2). The net use of groundwater from the Calimesa management area will be reduced by 20% of the estimated sustainable yield of 4,955 AFY, or by 990 AFY. The Yucaipa GSA will achieve this management action by either reducing groundwater production by 990 AFY, artificially recharging the aquifer with an additional 990 AFY of supplemental water, enacting water conservation programs or other programs that result in a net reduction of groundwater use by 990 AFY, or any combination of these actions that result in a net reduction of groundwater use by 990 AFY. Because the management area is not experiencing or is expected to experience conditions below the minimum threshold through the 50-year planning and implementation horizon, no interim milestones are defined in this GSP. However, if conditions do fall below the minimum threshold and this management action is implemented, then the Yucaipa GSA will identify interim milestones at that time to evaluate progress in improving conditions to achieve groundwater sustainability.
    b) The 20% net reduction in groundwater use, which may be achieved with a reduction in groundwater production by 990 AFY to 3,955 AFY, was selected because historical data indicated that, when groundwater production was at 4,000 AFY or less, groundwater levels and the volume in storage were stable or increased during periods of "dry" to "wet" water year types (Figures 2-3, 3-19 and 3-21). The Yucaipa GSA, at its discretion, may modify the 20% reduction (e.g., implement a higher percentage of reduction) if this rate is not sufficient to improve conditions in the management area.

4.2.1.2.1 Measurable Objective Expected to Benefit

The measurable objective established for the sustainability indicators of chronic lowering of groundwater levels, reduction in groundwater storage, and land subsidence would benefit from the implementation of this management action. The goal of the management action is to reduce the net use of groundwater from the management area by 5% to 20% of the estimated sustainable yield until conditions improve to the measurable objective where the management area is managed sustainably and no undesirable results are experienced. Currently, groundwater conditions in the Calimesa management area are managed sustainably.

4.2.1.2.2 Expected Benefits and Evaluation

The sustainability criteria established for the Calimesa management area were designed to protect the long-term groundwater supply and maintain production for the existing wells operated by South Mountain, South Mesa, YVWD, and private users. The establishment of a drought buffer, represented by a range in the volume in storage from 798,700 to 772,700 AF, provides operational flexibility for the Yucaipa GSA to implement these management actions to avoid or improve conditions from undesirable results. These actions allow the management area to recover during "dry" to "wet" water year types when recharge will exceed the net withdrawal of groundwater.

Groundwater in storage will increase and chronic declines in groundwater elevations will cease or reverse with a net reduction in groundwater use from the management area. Groundwater in storage will be measured using groundwater elevations as a proxy. If groundwater elevations stabilize, or rise at the groundwater level RMPs, the management action will have succeeded in increasing the volume of groundwater in storage and prevented the chronic decline in groundwater levels. Conditions at the measurable objective or higher are at or above the historical

low, which will negate the undesirable result of land subsidence potentially occurring due to a long-term groundwater level decline below the historical low.

4.2.1.2.3 Circumstances for Implementation

This management action would be implemented under the following circumstances:

1. When groundwater levels measured at 50% or more of the RMPs fall below their respective measurable objective levels and drought buffer tiers for 2 consecutive years, or
2. When groundwater levels measured at 50% or more of the RMPs fall below their respective minimum threshold levels for 2 consecutive years.

4.2.1.2.4 Public Noticing

Public noticing is not required for this management action, which would be undertaken under the Yucaipa GSA's authority to control groundwater withdrawals from the Calimesa management area. The Yucaipa GSA will notify private well owners that will be affected by the implementation of this management action if it requires a reduction in their respective groundwater production.

4.2.1.2.5 Permitting and Regulatory Process

No additional permitting or regulatory oversight is necessary to implement this management action, which would be undertaken under the Yucaipa GSA's authority per Water Code, Section 10726.4.

4.2.1.2.6 Implementation Schedule

The YIHM predicts long-term fluctuations of groundwater elevations at the RMPs above the measurable objective until approximately 2058 when drier conditions prevail and groundwater levels experience a declining trend to the end of the 50-year planning and implementation horizon (Figures 4-2 to 4-14). The circumstance for implementing this management action when groundwater elevations at 50% or more of the RMPs decline below their respective tier 1 levels is predicted in 2066. This is based on predicted groundwater elevations at Hog Canyon 2, South Mesa 7, YVWD-10, YVWD-12, YVWD-49, USGS Equestrian Park #1, and USGS 6th Street #1 falling below their respective tier 1 levels by 2065 and remaining below those levels into 2067 (Figures 4-2, 4-6, 4-7, 4-9, 4-10, 4-11, and 4-13). The Yucaipa GSA will implement this management action within six months from confirming the predicted declines in groundwater levels by reducing the net use of groundwater from the management area by 5%.

4.2.1.2.7 Legal Authority

Yucaipa GSA has the legal authority to operate and regulate the production from water supply wells in the Plan Area per Water Code, Section 10726.4; and to import surface water (e.g., SWP water) or other supplemental water to artificially recharge the Subbasin per Water Code, Section 10726.2. No additional legal authority is required.

4.2.1.2.8 Estimated Costs

The costs associated with the implementation of this management action have not yet been estimated. However, if this management action is implemented, then additional costs may be incurred by South Mountain, South Mesa, YVWD, or their respective customers, and private users to supply additional supplemental water, enact water

conservation programs, or other actions to meet water demands. The responsibilities for covering costs between the water purveyors and private users, if applicable, will be determined at the time of implementation and will depend on their respective action and/or program implemented to achieve the overall goal of reducing the net use of groundwater from the management area.

4.2.1.3 Western Heights Management Area

The Western Heights management area includes seven RMPs, each associated with groundwater elevations representing the measurable objective at 408,800 AF and the minimum threshold at 398,800 AF in storage (Table 3-5; Table 4-3). The measurable objective is represented by the historical low condition and indicates that no undesirable results are occurring in the management area.

Table 4-3. Groundwater Elevations Pertaining to Management Actions for the Western Heights Management Area

Representative Monitoring Point	Current Groundwater Elevations (feet NAVD88)	Groundwater Elevations at the Measurable Objective (Tier 1 of Drought Buffer) (feet NAVD88)	Groundwater Elevations at Tier 2 of Drought Buffer (feet NAVD88)	Groundwater Elevations at the Minimum Threshold (feet NAVD88)
WHWC-2A	1,740.68	1,735.68	1,716.00	1,695.24
WHWC-10	1,766.04	1,750.04	1,734.04	1,714.26
WHWC-11	1,723.93	1,748.93	1,735.76	1,712.24
WHWC-12	1,757.11	1,747.11	1,732.52	1,708.84
WHWC-14	1,749.90	1,726.90	1,717.20	1,696.12
USGS Dunlap #2 (830 feet to 850 feet)	1,754.85	1,748.40	1,729.36	1,708.97
USGS Dunlap #4 (440 feet to 460 feet)	1,743.89	1,740.32	1,720.05	1,699.54
Average	**1,748.06**	**1,742.48**	**1,726.42**	**1,705.03**

The YIHM predicts that future groundwater elevations with groundwater production constrained to the estimated sustainable yield of 1,760 AFY will remain above the measurable objective levels associated with each RMP (Figures 3-40 to 3-46). However, the following conditions will trigger management actions to be implemented by the Yucaipa GSA should conditions decline below the measurable objective:

1) If groundwater elevations decline at 50% or more of the RMPs below their respective measurable objective levels for two consecutive years, then the following management action will be implemented:
   a) The net use of groundwater from the Western Heights management area will be reduced under a two-tier structure depending on the volume of groundwater in storage below the historical low of 408,800 AF. Actions to be implemented under the two-tier structure are as follows:

i) The first tier, which begins at the historical low, extends from 408,800 to 403,800 AF, or the top 5,000 AF in the drought buffer (Figure 4-15). Groundwater elevations at the RMPs that represent the historical low (i.e., the top of tier 1) range from 1,727 to 1,750 feet NAVD88 (Table 4-3). If groundwater elevations decline at 50% or more of the RMPs below their respective tier 1 levels for two consecutive years, then a net reduction in groundwater use by 5% of the estimated sustainable yield of 1,760 AFY, or 90 AFY, is required. The Yucaipa GSA will implement this management action by either reducing groundwater production by 90 AFY, artificially recharging the aquifer with an additional 90 AFY of supplemental water, enacting water conservation programs or other programs that result in a net reduction of groundwater use by 90 AFY, or any combination of these actions that result in a net reduction of groundwater use by 90 AFY. Currently, no interim milestones are defined because the management area is managed sustainably and conditions are at the measurable objective. However, if conditions decline to this first tier in the drought buffer, then this management action would be implemented and the Yucaipa GSA will identify interim milestones at that time to evaluate progress in achieving groundwater sustainability.

ii) The second tier extends from 403,800 to 398,800 AF, or the bottom 5,000 AF in the drought buffer (Figure 4-15). Groundwater elevations at the RMPs that represent the top of tier 2 range from 1,716 to 1,736 feet NAVD88 (Table 4-3). If groundwater elevations decline at 50% or more of the RMPs below their respective tier 2 levels for two consecutive years, then a net reduction in groundwater use by 10% of the estimated sustainable yield of 1,760 AFY, or by 180 AFY, is required. The Yucaipa GSA will implement this management action by either reducing groundwater production by 180 AFY, artificially recharging the aquifer with an additional 180 AFY of supplemental water, enacting water conservation programs or other programs that result in a net reduction of groundwater use by 180 AFY, or any combination of these actions that result in a net reduction of groundwater use by 180 AFY. Currently, no interim milestones are defined because the management area is managed sustainably and conditions are at the measurable objective. However, if conditions decline to this second tier in the drought buffer, then this management action would be implemented and the Yucaipa GSA will identify interim milestones at that time to evaluate progress in achieving groundwater sustainability.

b) The 5% to 10% net reduction in groundwater use, which may be achieved with a reduction in groundwater production from 1,760 AFY to 1,670 AFY (5% less) or 1,580 AFY (10% less), was selected because historical data indicated that when groundwater production was at these rates or less groundwater levels and the volume in storage were stable or increased during periods of "dry" to "wet" water year types (Figures 2-34, 3-37, and 3-38). The Yucaipa GSA, at its discretion, may modify the 5% to 10% reduction (e.g., implement a higher percentage of reduction) if these rates are not sufficient to improve conditions in the management area and avoid undesirable results.

c) Implementing this management action will also require the Yucaipa GSA to reevaluate and, possibly, recalibrate the YIHM to improve the accuracy of the model in predicting future conditions. This action will be implemented if the occurrence is outside the scheduled 5-year evaluation, which already includes a reevaluation of the YIHM.

2) If conditions continue to decline and groundwater elevations at 50% or more of the RMPs fall below their respective minimum threshold levels for two consecutive years, then the following management action will be implemented:

a) The net use of groundwater from the Calimesa management area will be reduced by 15% of the estimated sustainable yield of 1,760 AFY, or by 260 AFY. Groundwater elevations at the RMPs that represent the minimum threshold range from 1,695 to 1,714 feet NAVD88 (Table 4-3). The Yucaipa GSA will achieve

this management action by either reducing groundwater production by 260 AFY, artificially recharge the aquifer with an additional 260 AFY of supplemental water, enact water conservation programs or other programs that result in a net reduction of groundwater use by 260 AFY, or any combination of these actions that result in a net reduction of groundwater use by 260 AFY. Because the management area is not experiencing or is expected to experience conditions below the minimum threshold through the 50-year planning and implementation horizon, no interim milestones are defined in this GSP. However, if conditions do fall below the minimum threshold and this management action is implemented, then the Yucaipa GSA will identify interim milestones at that time to evaluate progress in improving conditions to achieve groundwater sustainability.

b) The 15% net reduction in groundwater use, which may be achieved with a reduction in groundwater production by 260 AFY from 1,760 AFY to 1,500 AFY, was selected because historical data indicated that, when groundwater production was at 1,500 AFY or less, groundwater levels and the volume in storage were stable or increased during periods of "dry" to "wet" water year types (Figures 2-34, 3-37, and 3-38). The Yucaipa GSA, at its discretion, may modify the 15% reduction (e.g., implement a higher percentage of reduction) if this rate is not sufficient to improve conditions in the management area.

4.2.1.3.1 Measurable Objective Expected to Benefit

The measurable objective established for the sustainability indicators of chronic lowering of groundwater levels, reduction in groundwater storage, and land subsidence would benefit from the implementation of this management action. The goal of the management action is to reduce the net use of groundwater from the management area by 5% to 15% of the estimated sustainable yield until conditions improve to the measurable objective where the management area is managed sustainably and no undesirable results are experienced. Currently, groundwater conditions in the Western Heights management area are managed sustainably.

4.2.1.3.2 Expected Benefits and Evaluation

The sustainability criteria established for the Western Heights management area were designed to protect the long-term groundwater supply and maintain production for the existing wells operated by WHWC and private users. The establishment of a drought buffer, represented by a range in the volume in storage from 408,800 to 398,800 AF, provides operational flexibility for the Yucaipa GSA to implement these management actions to avoid or improve conditions from undesirable results. These actions allow the management area to recover during "dry" to "wet" water year types when recharge will exceed the net withdrawal of groundwater.

Groundwater in storage will increase and chronic declines in groundwater elevation will cease or reverse with a net reduction in groundwater use from the management area. Groundwater in storage will be measured using groundwater elevations as a proxy. If groundwater elevations stabilize, or rise at the groundwater level RMPs, the management action will have succeeded in increasing the volume of groundwater in storage and prevented a chronic decline in groundwater levels. Conditions at the measurable objective or higher are at or above the historical low, which will negate the undesirable result of land subsidence potentially occurring due to a long-term groundwater level decline below the historical low.

4.2.1.3.3 Circumstances for Implementation

This management action would be implemented under the following circumstances:

1. when groundwater levels measured at 50% or more of the RMPs fall below their respective measurable objective levels and drought buffer tiers for two consecutive years, or
2. when groundwater levels measured at 50% or more of the RMPs fall below their respective minimum threshold levels for two consecutive years.

4.2.1.3.4 Public Noticing

Public noticing is not required for this management action, which would be undertaken under the Yucaipa GSA's authority to control groundwater withdrawals from the Western Heights management area. The Yucaipa GSA will notify private well owners that will be affected by the implementation of this management action if it requires a reduction in their respective groundwater production.

4.2.1.3.5 Permitting and Regulatory Process

No additional permitting or regulatory oversight is necessary to implement this management action, which would be undertaken under the Yucaipa GSA's authority per Water Code, Section 10726.4.

4.2.1.3.6 Implementation Schedule

The YIHM predicts that groundwater elevations at the RMPs will not decline to tier 1 of the drought buffer through the 50-year planning and implementation horizon (Figures 4-16 to 4-22). Predicted groundwater elevations will not decline to tier 1 levels at more than 50% of the RMPs; therefore, there is no specific implementation schedule for this management action. However, the Yucaipa GSA will implement this management action within six months of determining that one of the criteria for implementation described in Section 4.2.1.3.3 has been met.

4.2.1.3.7 Legal Authority

Yucaipa GSA has the legal authority to operate and regulate the production from water supply wells in the Plan Area per Water Code, Section 10726.4; and to import surface water (e.g., SWP water) or other supplemental water to artificially recharge the Subbasin per Water Code, Section 10726.2. No additional legal authority is required.

4.2.1.3.8 Estimated Costs

The costs associated with the implementation of this management action have not yet been estimated. However, if this management action is implemented, then additional costs may be incurred by WHWC, or its respective customers, to supply additional supplemental water, enact water conservation programs, or other actions to meet water demands while reducing the net use of groundwater from the management area.

4.2.1.4 San Timoteo Management Area

The San Timoteo management area includes six RMPs to characterize shallow groundwater elevations and evaluate whether groundwater production from the principal aquifer will cause significant and unreasonable effects on the interconnection between surface water and groundwater. GDEs have been identified along the reach of San

Timoteo Creek in the Plan Area and the following management actions are intended to protect the habitat sustained by surface water in the creek and the underlying shallow groundwater. No management actions were developed for the chronic lowering of groundwater elevations, reduction in groundwater storage, and land subsidence because no sustainability criteria were developed for these indicators (Sections 3.4.4 and 3.5.4).

A measurable objective was established for shallow groundwater levels at 20 feet bgs (Figure 3-48). The following management action will be implemented to prevent the significant and unreasonable effects to the interconnection of surface water and groundwater and to protect the GDEs sustained in the management area:

1) If groundwater levels decline at 50% or more of the RMPs below 20 feet bgs for two consecutive years, then the following management action will be implemented:
   a) Confirm that the decline in the water table is a result of groundwater production from the principal aquifer. This may include observing groundwater levels at the RMPs and measuring stream flow when the principal aquifer well(s) is operating, or designing and implementing an aquifer test to confirm the influence of groundwater production from the principal aquifer on stream flow and the groundwater table. Currently, only private users are extracting groundwater from this management area. The Yucaipa GSA will contact the private well owners to obtain information to assess whether pumping at a private well is the cause for the observed surface water flow and/or groundwater level declines. The Yucaipa GSA will request historical and projected pumping demands to better characterize conditions in this subarea and determine the extent of influence of pumping at the private well(s) on stream flow and shallow groundwater.
   b) If an aquifer test is conducted and confirms the influence of production from the principal aquifer on the surface water/groundwater interconnection and a subsequent drawdown of the water table, then production from the principal aquifer will be reduced to the extent that it no longer causes a significant and unreasonable effect.

4.2.1.4.1 Measurable Objective Expected to Benefit

The measurable objective established for the sustainability indicator of surface water/groundwater interconnection would benefit from the implementation of this management action. The goal of the management action is to prevent significant and unreasonable effects on GDEs sustained by the interaction of surface water and the underlying shallow groundwater. Currently, groundwater conditions in the San Timoteo management area are not experiencing undesirable results.

4.2.1.4.2 Expected Benefits and Evaluation

The sustainability criteria established for the San Timoteo management area were designed to protect the GDEs along San Timoteo Creek. This includes reducing groundwater production from the principal aquifer that directly influences stream flow in the creek and the underlying shallow groundwater that sustains the GDEs. YVWD monitors stream flow and shallow groundwater conditions along this reach of San Timoteo Creek as part of the HMP implemented in 2011 (Section 1.5.1.2). Monitoring includes collecting groundwater elevation data at shallow wells and evaluating habitat conditions via NDVI analysis along this reach of the creek. To date, HMP monitoring has indicated that significant fluctuations in groundwater levels and habitat conditions result from climatic conditions (i.e., prolong drought, large storm events) rather than by other potential factors like local groundwater production.

4.2.1.4.3 Circumstances for Implementation

This management action would be implemented under the following circumstances:

1. When groundwater levels measured at 50% of the RMPs fall below the measurable objective for 2 consecutive years.

4.2.1.4.4 Public Noticing

Public noticing is not required for this management action, which would be undertaken under the Yucaipa GSA's authority to control groundwater withdrawals from the principal aquifer in the San Timoteo management area. The Yucaipa GSA will notify private well owners that will be affected by the implementation of this management action.

4.2.1.4.5 Permitting and Regulatory Process

No additional permitting or regulatory oversight is necessary to implement this management action, which would be undertaken under the Yucaipa GSA's authority per Water Code, Section 10726.4.

4.2.1.4.6 Implementation Schedule

There is no specific implementation schedule for this management action. There is no indication of declining groundwater levels and stress on GDEs from the extraction of groundwater from the principal aquifer. The Yucaipa GSA will reach out to known and potential private well owners to obtain information on pumping schedules and volumes to better characterize conditions in this management area. This information will help inform the management action taken should groundwater elevations at three or more of the RMPs decline below the measurable objective.

4.2.1.4.7 Legal Authority

Yucaipa GSA has the legal authority to operate and regulate the production from water supply wells in the Plan Area per Water Code, Section 10726.4; and to import surface water (e.g., SWP water) or other supplemental water to artificially recharge the Subbasin per Water Code, Section 10726.2. No additional legal authority is required.

4.2.1.4.8 Estimated Costs

The costs associated with the implementation of this management action have not yet been estimated. Costs may be incurred by the Yucaipa GSA to reach out to the private well owners to collect the necessary information to better characterize conditions in this management area. If aquifer tests are required, then additional costs will be incurred by the Yucaipa GSA to conduct the tests, collect and analyze the test data, and develop an appropriate action or response based on the test data to ensure that no undesirable results occur in the management area. These costs will be assessed at the time such action is identified.

4.2.2 Management Action No. 2 – Sustainable Yield Pumping Allocations and Groundwater Replenishment

Groundwater sustainable yield pumping allocations will be assigned to YVWD and private water users in the North Bench Management Area, to South Mountain, South Mesa, YVWD and private water users in the Calimesa Management Area, and to WHWC in the Western Heights management area per the subsections below when this GSP is adopted. No sustainable yield pumping allocations were assigned in the San Timoteo management area at this time because the Yucaipa GSA needs to confirm the location and volume of private pumping from the principal aquifer and determine whether sustainable yield pumping allocations are appropriate to manage groundwater production in this management area. The pumping allocations are designed to regulate the annual volume of groundwater produced by each groundwater user and maintain the total groundwater produced at or below the estimated sustainable yields for these management areas. The sustainable yield pumping allocations will be reevaluated within three months (i.e., every December) of the end of a water year.

As an incentive to manage groundwater production at or below the sustainable yield pumping allocation, a groundwater user may earn pumping credits in the amount of the sustainable yield pumping allocation less the groundwater pumped. For example, if water purveyor A pumped 1,000 AF in a water year and the sustainable yield pumping allocation is 1,200 AFY, then water purveyor A earned a 200 AF pumping credit. The Yucaipa GSA will apply a 5-year rolling pumping credit system to keep account of the pumping credits earned by each water purveyor, meaning pumping credits that are earned and not used after 5 years will be lost. Pumping credits, if available, may be used to offset the volume of groundwater produced in excess of the sustainable yield pumping allocation to the extent that the credits equal the pumping exceedance. Any remaining deficit will be charged a replenishment fee. Any pumping credits remaining will carry over into the next water year under the 5-year rolling pumping credit system. The accounting of pumping credits will begin with the adoption of the GSP. The volume of water pumped per user will be accounted for on a monthly basis beginning February 2022. The initial assessment for pumping credits will occur at the conclusion of the 2022 WY, and then reassessed at the conclusion of subsequent water years. Pumping credits will be assigned to users that pump less than their respective sustainable yield pumping allocation, or a deficit will be assigned should the volume pumped exceed the sustainable yield pumping allocation. Pumping credits cannot be transferred or sold to another entity within a given management area or with the Subbasin.

As an alternative to using pumping credits to offset a pumping exceedance, a water purveyor may use surplus supplemental water that directly recharged the Subbasin (See Management Action No. 3, Section 4.2.3). If such water is available and accessible to the water purveyor, then this water may be used instead of pumping credits to offset the pumping exceedance.

The following provides a description of how the pumping allocations were assigned to each purveyor, and the management actions that will be implemented when a groundwater user exceeds their respective sustainable yield pumping allocation.

4.2.2.1 North Bench Management Area

YVWD and private users are the two groundwater users in the North Bench Management Area. From the 1966 WY to the 2018 WY, the average annual production rates for YVWD and private users were 2,647 AFY and 778 AFY, respectively (Figure 4-23, Table 4-4). Groundwater production by YVWD accounted for 77.3% of the total production, private users accounted for 22.7%. Applying these allocations to the estimated sustainable yield of 3,940 AFY for

the North Bench management area, the sustainable yield pumping allocations for YVWD and private users are 3,045 AFY and 895 AFY, respectively (Table 4-4).

Table 4-4. Sustainable Yield Pumping Allocations in the North Bench Management Area

Groundwater User	Average Historical Pumping (AFY)	Historical Pumping Allocation (%)	Sustainable Yield Pumping Allocation (AFY)
YVWD	2,647	77.3%	3,045
Private	778	22.7%	895
Total	**3,425**	**100.0%**	**3,940**

The volume of groundwater produced will be quantified per water year (October 1 to September 30) with the total volumes reported to the Yucaipa GSA by the end of the calendar year. If a groundwater user exceeds their respective sustainable yield pumping allocation, then the groundwater user will be charged a replenishment fee equivalent to the volume of groundwater that exceeds the sustainable yield pumping allocation multiplied by the rate per AF to purchase supplemental water at San Bernardino Valley Municipal Water District (SBVMWD) rates for imported SWP water. If the groundwater user has accrued pumping credits or has surplus supplemental water available in the aquifer, then the pumping credits or surplus supplemental water may be applied up to the pumping exceedance. If there continues to be a deficit, then a replenishment fee will be charged to the groundwater user. The supplemental water required under this management action will be purchased in the subsequent water year, if available, and used to artificially recharge and replenish the Subbasin at the Wilson Creek spreading basins.

The historical production by private users was based on data from the USGS that was incorporated into the YIHM. Figure 4-23 indicates that groundwater production by private users has been steadily declining since the early 1980s to where the average rate over the last 10 years has been approximately 160 AFY. The Yucaipa GSA will make efforts to contact private well users in this management area to confirm the estimated rate of groundwater production per private user. This will provide the Yucaipa GSA with information to characterize the influence of each individual private user on conditions in the management area, and to apply the appropriate pumping allocation. The sustainable yield pumping allocations between YVWD and private users will be reassessed when data on the current and projected usage by private users is collected and analyzed.

4.2.2.1.1 Measurable Objective Expected to Benefit

The measurable objective established for the sustainability indicators of chronic lowering of groundwater levels, reduction in groundwater storage, and land subsidence would benefit from the implementation of this management action.

4.2.2.1.2 Expected Benefits and Evaluation

The goal of this management action is to replenish the management area when groundwater withdrawals exceed the sustainable yield pumping allocation assigned to a groundwater user. This action will prevent long-term declines in groundwater elevations and storage due to groundwater production above the sustainable yield, and help prevent conditions from falling below the historical low in groundwater levels that potentially cause significant and unreasonable effects due to land subsidence. Currently, groundwater extractions from the North Bench management area are below the estimated sustainable yield of 3,940 AFY (Figure 3-3).

The benefit of this management action will be evaluated after the purchase of replenishment water and subsequent discharge to the Wilson Creek and Oak Glen Creek spreading basins to replenish the Subbasin.

4.2.2.1.3 Circumstances for Implementation

This management action would be implemented when the volume of groundwater produced by a water purveyor and/or private user per water year exceeds their respective sustainable yield pumping allocation, and the use of pumping credits and/or surplus supplemental water (Section 4.2.3) was insufficient to offset the pumping exceedance. The groundwater user will be required to purchase supplemental water in the subsequent water year for replenishment purposes via the Wilson Creek and Oak Glen Creek spreading basins. If no supplemental water is available, then the volume to replenish will be held in account for up to 5 years until water is available or the groundwater user has earned pumping credits to offset this exceedance. If after 5 years there is no supplemental water available to replenish the management area and the groundwater user has not earned pumping credits to offset the exceedance, then a reassessment of the sustainable yield and pumping allocations will be conducted for the management area.

4.2.2.1.4 Public Noticing

Public noticing is not required for this management action, which would be undertaken under the Yucaipa GSA's authority to control groundwater production from the North Bench management area and acquire surface water to direct to spreading basins and/or other purposes per Water Code Sections 10726.2 and 10726.4.

4.2.2.1.5 Permitting and Regulatory Process

No additional permitting or regulatory oversight is necessary to implement this management action, which would be undertaken under the Yucaipa GSA's authority per Water Code Sections 10726.2 and 10726.4.

4.2.2.1.6 Implementation Schedule

This management action requires the purchase of supplemental water for replenishment purposes in the subsequent water year after the management action is implemented and the application of pumping credits and/or surplus supplemental water, if any, do not offset the pumping exceedance. If no supplemental water is available to replenish the Subbasin in the subsequent water year, then the replenishment water volume will be held in account for up to 5 years until there is supplemental water available or pumping credits are earned to offset the pumping exceedance.

4.2.2.1.7 Legal Authority

Yucaipa GSA has the legal authority to operate and regulate the production from water supply wells in the Plan Area per Water Code, Section 10726.4; and to import surface water (e.g., SWP water) or other supplemental water per Water Code, Section 10726.2. No additional legal authority is required.

4.2.2.1.8 Estimated Costs

The costs associated with the implementation of this management action are based on the volume of groundwater in excess of the sustainable yield pumping allocation and the rate of SWP water by SBVMWD per acre-foot. Additional costs may be incurred for the distribution and delivery to the Wilson Creek and Oak Glen Creek spreading basins. The estimated costs may vary annually depending on the rate charged by SBVMWD for supplemental water to replenish the Subbasin.

4.2.2.2 Calimesa Management Area

The four groundwater users in the Calimesa Management Area are South Mountain, South Mesa, YVWD and private users. From the 1966 WY to the 2018 WY, the average annual production rates for South Mountain, South Mesa, YVWD and private users were 544 AFY, 2,056 AFY, 2,457 AFY and 143 AFY, respectively (Figure 4-24; Table 4-5). Historically, groundwater production by South Mountain, South Mesa, YVWD and private users accounted for 10.5%, 39.5%, 47.2%, and 2.8%, respectively, of the average annual production of 5,200 AFY. Applying these allocations to the estimated sustainable yield of 4,955 AFY for the Calimesa management area, the sustainable yield pumping allocations for South Mountain, South Mesa, YVWD and private users are 518 AFY, 1,959 AFY, 2,341 AFY, and 137 AFY, respectively[1] (Table 4-5).

Table 4-5. Sustainable Yield Pumping Allocations in the Calimesa Management Area

Groundwater User	Average Historical Pumping (AFY)	Historical Pumping Allocation (%)	Sustainable Yield Pumping Allocation (AFY)
YVWD	2,457	47.2%	2,341
South Mesa	2,056	39.5%	1,959
South Mountain	544	10.5%	518
Private	143	2.8%	137
Total	**5,200**	**100.0%**	**4,955**

The volume of groundwater produced will be quantified per water year (October 1 to September 30) with the total volumes reported to the Yucaipa GSA by the end of the calendar year. If a groundwater user exceeds their respective sustainable yield pumping allocation, then the groundwater user will be charged a fee equivalent to the volume of groundwater that exceeds their respective sustainable yield pumping allocation multiplied by the rate per AF of supplemental water supplied by SBVMWD and/or San Gorgonio Pass Water Agency (SGPWA) depending on the availability of supplemental water for purchase. The Calimesa management area straddles the boundary between San Bernardino County and Riverside County, which includes the service areas of SBVMWD and SGPWA. SWP water supplied by these two regionals may be available as a supplemental water source under this management action. If a groundwater user has accrued pumping credits and/or surplus supplemental water that directly recharged the aquifer, then the pumping credits and/or surplus supplemental water may be applied to offset the pumping exceedance. If there continues to be a deficit, then a fee will be charged to the groundwater user to purchase supplemental water. The supplemental water will be purchased in the subsequent water year, if available, and used to artificially replenish the aquifer, if applicable, or as in lieu use to offset the pumping exceedance.

Currently, there are no spreading basins in the Calimesa management area, but the Yucaipa GSA member agencies are evaluating two potential sites to develop surface water spreading basins for the purposes of artificially recharging the Subbasin. The Yucaipa GSA will utilize the YIHM as a tool to evaluate the feasibility of operating spreading basis at the two proposed sites. The feasibility studies will evaluate the beneficial impact of recharging the aquifer at these two potential locations. In the meantime, the supplemental water may be used as in lieu use to offset the pumping exceedance.

[1] In accordance with Water Code Section 10720.5, the sustainable yield allocations set forth in Management Action No. 2 are neither intended to nor actually comprise any determination of water rights.

The historical production by private users was based on data from the USGS that was incorporated into the YIHM. Figure 4-24 indicates that groundwater production by private users has been steady at approximately 200 AFY since 2000. The Yucaipa GSA will make efforts to contact private well users in this management area to confirm the locations and estimated rates of groundwater extraction for the active private groundwater users. The sustainable yield pumping allocations between the water purveyors and individual private users will be reassessed when data on the current and projected usage by private users is collected and analyzed.

4.2.2.2.1 Measurable Objective Expected to Benefit

The measurable objective established for the sustainability indicators of chronic lowering of groundwater levels, reduction in groundwater storage, and land subsidence would benefit from the implementation of this management action.

4.2.2.2.2 Expected Benefits and Evaluation

The goal of this management action is to replenish the management area or reduce groundwater withdrawals when groundwater production exceeds the sustainable yield pumping allocation assigned to a groundwater user. This action will prevent long-term declines in groundwater elevations and storage due to groundwater production above the sustainable yield, and help prevent conditions from falling below the historical low in groundwater levels that potentially cause significant and unreasonable effects due to land subsidence. Currently, groundwater extractions from the Calimesa management area are below the sustainable yield of 4,955 AFY (Figure 3-19). Because there are no spreading basins in the Calimesa management area, the supplemental water may be used as in lieu use to offset the pumping exceedance.

4.2.2.2.3 Circumstances for Implementation

This management action would be implemented when the volume of groundwater produced by a water purveyor and/or private user per water year exceeds their respective sustainable yield pumping allocation. The groundwater user will be assessed a fee to purchase supplemental water if the application of pumping credits and/or surplus supplemental water, if available, do not offset the production exceedance. If no supplemental water is available to replenish the aquifer, then the volume to replenish will be held in account for up to 5 years until water is available or the groundwater user has earned pumping credits to offset this exceedance. If after 5 years there is no supplemental water available and the groundwater user has not earned pumping credits to offset the exceedance, then a reassessment of the sustainable yield and pumping allocations will be conducted for the management area.

4.2.2.2.4 Public Noticing

Public noticing is not required for this management action, which would be undertaken under the Yucaipa GSA's authority to control groundwater production from the Calimesa management area and acquire surface water to import into the Plan Area per Water Code Sections 10726.2 and 10726.4.

4.2.2.2.5 Permitting and Regulatory Process

No additional permitting or regulatory oversight is necessary to implement this management action, which would be undertaken under the Yucaipa GSA's authority per Water Code Sections 10726.2 and 10726.4.

4.2.2.2.6 Implementation Schedule

This management action requires the purchase of supplemental water in the subsequent water year after the management action is implemented and the application of pumping credits and/or surplus supplemental water, if any, do not offset the pumping exceedance. If no supplemental water is available in the subsequent water year to replenish the aquifer, then the supplemental water volume will be held in account for up to 5 years until there is supplemental water available or pumping credits are earned to offset the pumping exceedance.

4.2.2.2.7 Legal Authority

Yucaipa GSA has the legal authority to operate and regulate the production from water supply wells in the Plan Area per Water Code, Section 10726.4; and to import surface water (e.g., SWP water) or other supplemental water per Water Code, Section 10726.2. No additional legal authority is required.

4.2.2.2.8 Estimated Costs

The costs associated with the implementation of this management action are based on the volume of supplemental water required to offset the pumping exceedance after pumping credits and/or surplus supplemental water, if any, have been applied. The cost for supplying supplemental water for replenishment purposes or as in lieu water will be based on the rate of SWP water per AF by SBVMWD and/or SGPWA. Additional costs may be incurred for the distribution and delivery of supplemental water to the management area. The estimated costs may vary annually depending on the rate charged by the Regionals for supplemental water.

4.2.2.3 Western Heights Management Area

WHWC is the only groundwater user in the Western Heights Management Area. The sustainable yield pumping allocation to WHWC is the sustainable yield of 1,760 AFY. The volume of groundwater produced will be quantified per water year (Oct. 1 to Sep. 30) with the total volume reported to the Yucaipa GSA by the end of the calendar year. If WHWC exceeds the sustainable yield, then WHWC will be charged a fee equivalent to the volume of groundwater that exceeds the sustainable yield multiplied by the rate per AF to purchase supplemental water at SBVMWD rates for imported SWP water. The supplemental water will be purchased in the subsequent water year, if available, and used as in lieu water to offset the pumping exceedance in the subsequent water year. There are no spreading basins in the Western Heights management area to receive SWP water.

4.2.2.3.1 Measurable Objective Expected to Benefit

The measurable objective established for the sustainability indicators of chronic lowering of groundwater levels, reduction in groundwater storage, and land subsidence would benefit from the implementation of this management action.

4.2.2.3.2 Expected Benefits and Evaluation

The goal of this management action is to replenish the management area or reduce groundwater withdrawals when groundwater production exceeds the sustainable yield. This action will prevent long-term declines in groundwater elevations and storage due to groundwater production above the sustainable yield, and help prevent conditions from falling below the historical low in groundwater levels that potentially cause significant and unreasonable effects due to land subsidence. Currently, groundwater extractions from WHWC in the Western Heights management area are below the sustainable yield of 1,760 AFY (Figure 3-37).

4.2.2.3.3 Circumstances for Implementation

This management action would be implemented when the volume of groundwater produced by WHWC per water year exceeds the sustainable yield. WHWC will be assessed a fee to purchase supplemental water if WHWC cannot apply pumping credits to offset the production exceedance. If no supplemental water is available, then the volume of supplemental water will be held in account for up to 5 years until water is available or the groundwater user has earned pumping credits to offset this exceedance. If after 5 years there is no supplemental water available and the groundwater user has not earned pumping credits to offset the exceedance, then a reassessment of the sustainable yield and pumping allocations will be conducted for the management area.

4.2.2.3.4 Public Noticing

Public noticing is not required for this management action, which would be undertaken under the Yucaipa GSA's authority to control groundwater production and acquire surface water to import into the Plan Area per Water Code Sections 10726.2 and 10726.4.

4.2.2.3.5 Permitting and Regulatory Process

No additional permitting or regulatory oversight is necessary to implement this management action, which would be undertaken under the Yucaipa GSA's authority per Water Code Sections 10726.2 and 10726.4.

4.2.2.3.6 Implementation Schedule

This management action requires the purchase of supplemental water as in lieu water in the subsequent water year after the management action is implemented. If no supplemental water is available, then the volume of supplemental water will be held in account for up to 5 years until there is supplemental water available or a reevaluation of the sustainable yield is conducted at the end of the 5-year limit.

4.2.2.3.7 Legal Authority

Yucaipa GSA has the legal authority to operate and regulate the production from water supply wells in the Plan Area per Water Code, Section 10726.4; and to import surface water (e.g., SWP water) or other supplemental water per Water Code, Section 10726.2. No additional legal authority is required.

4.2.2.3.8 Estimated Costs

The costs associated with the implementation of this management action are based on the volume of groundwater produced in excess of the sustainable yield and the rate of SWP water by SBVMWD per acre-foot. Additional costs may be incurred for the distribution and delivery to the Western Heights management area. The estimated costs may vary annually depending on the rate charged by SBVMWD for supplemental water to replenish the Subbasin.

4.2.2.4 San Timoteo Management Area

This management action does not apply to the San Timoteo Management Area.

4.2.3 Management Action No. 3 – Surplus Supplemental Water Spreading

YVWD has purchased SWP water, when available, to artificially recharge the Subbasin via the Wilson Creek and Oak Glen Creek spreading basins (Section 2.5.4.2; Figure 2-21). This water has helped contribute to the recovery of the North Bench management area since it was first used to artificially recharge the Subbasin in 2011. The Yucaipa GSA will continue to obtain, when available, surplus supplemental water to artificially recharge the Subbasin to help maintain groundwater in storage above historical lows.

Surplus supplemental water, which is not associated with Management Action No. 2 (Section 4.2.2), and discharged to a spreading basin to facilitate the artificial recharge of the Subbasin will have a separate accounting by the Yucaipa GSA. The surplus supplemental water will be accessible to the water purveyor that purchased the water and percolated it at a spreading basin. This water will be available to help offset production exceedances above the sustainable yield pumping allocations instead of pumping credits earned via Management Action No. 2.

The Yucaipa GSA will conduct a study within the first year of adopting the GSP to estimate the amount of water lost from the point of discharge at a spreading basin to the water table. This study will estimate monthly losses due to evaporation of water from a spreading basin to water retained in the soil column between the bottom of a spreading basin and the underlying water table. The estimate of water loss will be applied to the volume of surplus supplemental water discharged on a monthly basis to a spreading basin. Monthly estimates of water loss are appropriate because evaporative losses in the summer are higher than in the winter. The remaining water will directly recharge the aquifer and be available to the water purveyor that purchased the water. The study will include the existing spreading basins and stormwater capture basins, and proposed basins that may be constructed in the Subbasin. Potential basins in the Calimesa management area would be evaluated to assess the effect of artificial recharge on the projected declines in groundwater in storage under the Future Baseline with Climate Change II scenario.

The YIHM was used to simulate the flow of water from the Wilson Creek and Oak Glen Creek spreading basins over the 50-year implementation and planning horizon. The YIHM indicated that water originating from these two spreading basins will remain in the North Bench Management Area over the 50-year period. The YIHM also indicated that water originating at the locations of two potential basins in the Calimesa management area would remain in the management area. Consequently, the accounting of surplus supplemental water that directly recharges the aquifer does not include additional losses when the water is in the aquifer.

4.2.3.1 Measurable Objective Expected to Benefit

The measurable objective established for the sustainability indicators of chronic lowering of groundwater levels, reduction in groundwater storage, and land subsidence would benefit from the implementation of this management action.

4.2.3.2 Expected Benefits and Evaluation

This management action provides the Yucaipa GSA with an accounting methodology to purchase surplus supplemental water and directly recharge the Subbasin. This water will be accessible to the water purveyor that

purchased the water and directed it to a spreading basin. The water may be used to help offset pumping exceedances over the sustainable yield pumping allocation.

4.2.3.3 Circumstances for Implementation

This management action would be implemented when a water purveyor purchases surplus supplemental water and directly recharges the Subbasin.

4.2.3.4 Public Noticing

Public noticing is not required for this management action, which would be undertaken under the Yucaipa GSA's authority to acquire surface water to import into the Plan Area per Water Code Section 10726.2.

4.2.3.5 Permitting and Regulatory Process

No additional permitting or regulatory oversight is necessary to implement this management action at existing spreading basins, which would be undertaken under the Yucaipa GSA's authority per Water Code Section 10726.2. New spreading basins or direct injection wells would require permitting and regulatory process services before installation and use. The Yucaipa GSA will complete the appropriate permitting and regulatory requirements to facilitate the design, installation, and operations of new facilities in order to enhance the recharge of surplus supplemental water in the Subbasin.

4.2.3.6 Implementation Schedule

This management action will be implemented when surplus supplemental water is available and purchased to directly recharge the Subbasin.

4.2.3.7 Legal Authority

Yucaipa GSA has the legal authority to import surface water (e.g., SWP water) or other supplemental water per Water Code, Section 10726.2. No additional legal authority is required.

4.2.3.8 Estimated Costs

The costs associated with the implementation of this management action are based on the volume of surplus supplemental water purchased from the regionals and the costs for directing the water to spreading basins to artificially recharge the Subbasin. The estimated costs may vary annually depending on the rate charged by SBVMWD and/or SGPWA for surplus supplemental water to replenish the Subbasin.

4.3 Projects

Currently, the Plan Area is not experiencing undesirable results with regard to the chronic lowering of groundwater elevations, reduction of groundwater in storage, land subsidence, and depletion of surface water as a result of groundwater production from the principal aquifer that threatens GDEs. The importation of SWP water as a

supplemental source of water has allowed the Yucaipa GSA member agencies to reduce groundwater production in the North Bench, Calimesa and Western Heights management areas to levels below their respective estimated sustainable yields. Groundwater production by private well owners in the San Timoteo management area has not caused significant and unreasonable effects related to the sustainability indicators per the Sustainable Groundwater Management Act. The Subbasin is currently managed sustainably.

Measurable objectives defined for the North Bench, Calimesa and Western Heights management areas were based on volumes of groundwater in storage that represent historical low conditions (Calimesa and Western Heights) or conditions that are above historical lows (North Bench). The measurable objective defined for the San Timoteo management area was based on the presence of GDEs and maintaining a water table elevation within 20 feet below ground surface to sustain the GDEs.

Management actions (Section 4.2) were defined to achieve sustainable management of the groundwater resources in the Plan Area should groundwater elevations decline below measurable objectives. These actions will be implemented if groundwater levels decline to the drought buffers established for the North Bench, Calimesa and Western Heights management areas. The drought buffers provide operational flexibility for the Yucaipa GSA to implement these management actions and/or other programs to prevent undesirable results.

Some of the member agencies of the Yucaipa GSA have constructed stormwater capture basins to enhance recharge to the Subbasin (Table 4-6). The Wilson Creek and Oak Glen Creek spreading basins are designed to capture stormwater and are used to artificially recharge the Subbasin using surplus SWP water delivered by the SWP East Branch Extension. These basins are included in the YIHM to simulate their contributions to recharge to the Subbasin. The Wilson Creek and Oak Glen Creek basins have contributed an average 1,900 AFY and 170 AFY, respectively, of SWP water since 2011 (Table 2C-5). The other existing stormwater capture basins are estimated to capture approximately 1,800 AFY (Section 5.xxx). Recharge at these basins was not included in the future water budget analyses for the North Bench and Western Heights management areas using the YIHM, because these management areas are sustainably managed and are projected to not experience undesirable results over the 50-year planning and implementation horizon.

The Yucaipa GSA identified proposed projects that have been designed, permitted, and are undergoing development or will in the near future. These include the Wilson Creek III Basins, the Pendleton Avenue Low Water Crossing, and the Upper Wildwood Creek Basin (Table 4-7). These basins are designed to capture stormwater flows and enhance recharge to the Subbasin. The estimated average annual recharge contribution is approximately 1,500 AF. These basins will be located in the North Bench management area. As with the existing basins, these planned basins were not included in the future water budget analyses for the North Bench management area using the YIHM, because the North Bench management area is not projected to experience undesirable results over the 50-year planning and implementation horizon.

The Yucaipa GSA is evaluating potential sites to construct and operate spreading basins to enhance recharge in the Calimesa management area. The YIHM predicts that groundwater elevations will decline below the measurable objective under the Future Baseline with Climate Change II scenario within the 50-year planning and implementation horizon. Therefore, in addition to the management actions described in Section 4.2.1..2, the potential construction of one or two spreading basins will benefit users in this management area. The Yucaipa GSA will evaluate the proposed basin(s) after more details of their construction and operation are developed. The basins will be included in the YIHM and evaluated during the 5-year evaluation study after this GSP is adopted.

Table 4-6. Existing Surface Water Spreading Basins in the Yucaipa Subbasin

Existing Projects	Lead Agency/ Designer	Latitude	Longitude	Management Area	Hydrogeologic Subarea	Source Water	Estimated Annual Increase in Groundwater Recharge (AFY)
Tennessee St. Basins	City of Yucaipa	34.034215°	−117.105489°	Western Heights	Western Heights	Stormwater	300
Fremont Avenue Low Water Crossing	City of Yucaipa	34.051403°	−117.026008°	North Bench	Gateway	Stormwater	300
Dunlap Channel Basins	City of Yucaipa	34.030576°	−117.096333°	Western Heights	Western Heights	Stormwater	600
Oak Glen Creek Basins	City of Yucaipa	34.044545°	−117.031828°	North Bench	Wilson Creek/ Gateway	Stormwater	170
Wildwood Creek Basins	City of Yucaipa	34.014461°	−117.018201°	North Bench	Oak Glen	Stormwater	600
Wildwood Channel	City of Yucaipa	34.01292°	−117.04551°	Calimesa	Calimesa	Stormwater	
Wilson Creek Spreading Basins	City of Yucaipa	34.05°	−117.03°	North Bench	Gateway	Stormwater/ SWP Water	1,900

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Table 4–7. Planned Surface Water Spreading Basins in the Yucaipa Subbasin

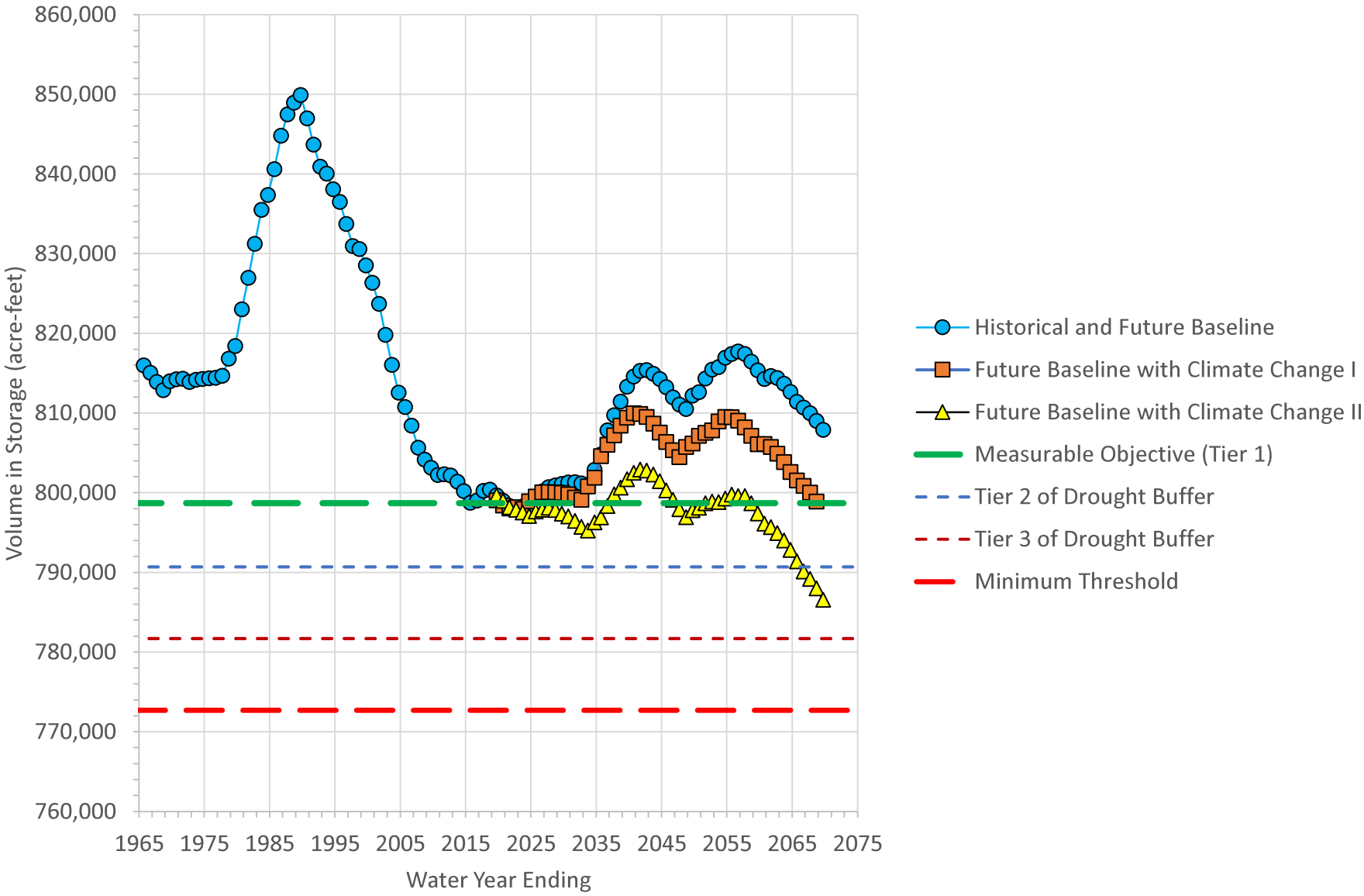
Existing/ Proposed Projects	Lead Agency/ Designer	Latitude	Longitude	Management Area	Hydrogeological Subarea	Source Water	Estimated Annual Increase in Groundwater Recharge (AFY)	Estimated Decrease in Annual Groundwater Production (AF)
Wilson Creek III Basins	City of Yucaipa	34.044446°	−117.042468°	North Bench	Gateway	SWP Water / Stormwater	750	—
Pendleton Avenue Low Water Crossing	City of Yucaipa	34.046855°	−117.018298°	North Bench	Oak Glen	Stormwater	500	—
Upper Wildwood Creek Basin	City of Yucaipa	34.014126°	−116.999070°	North Bench	Oak Glen	Stormwater	250	—
Salinity and Groundwater Enhancement	YVWD	34.006887°	−117.095094°	—	—	Recycled Water	—	5000

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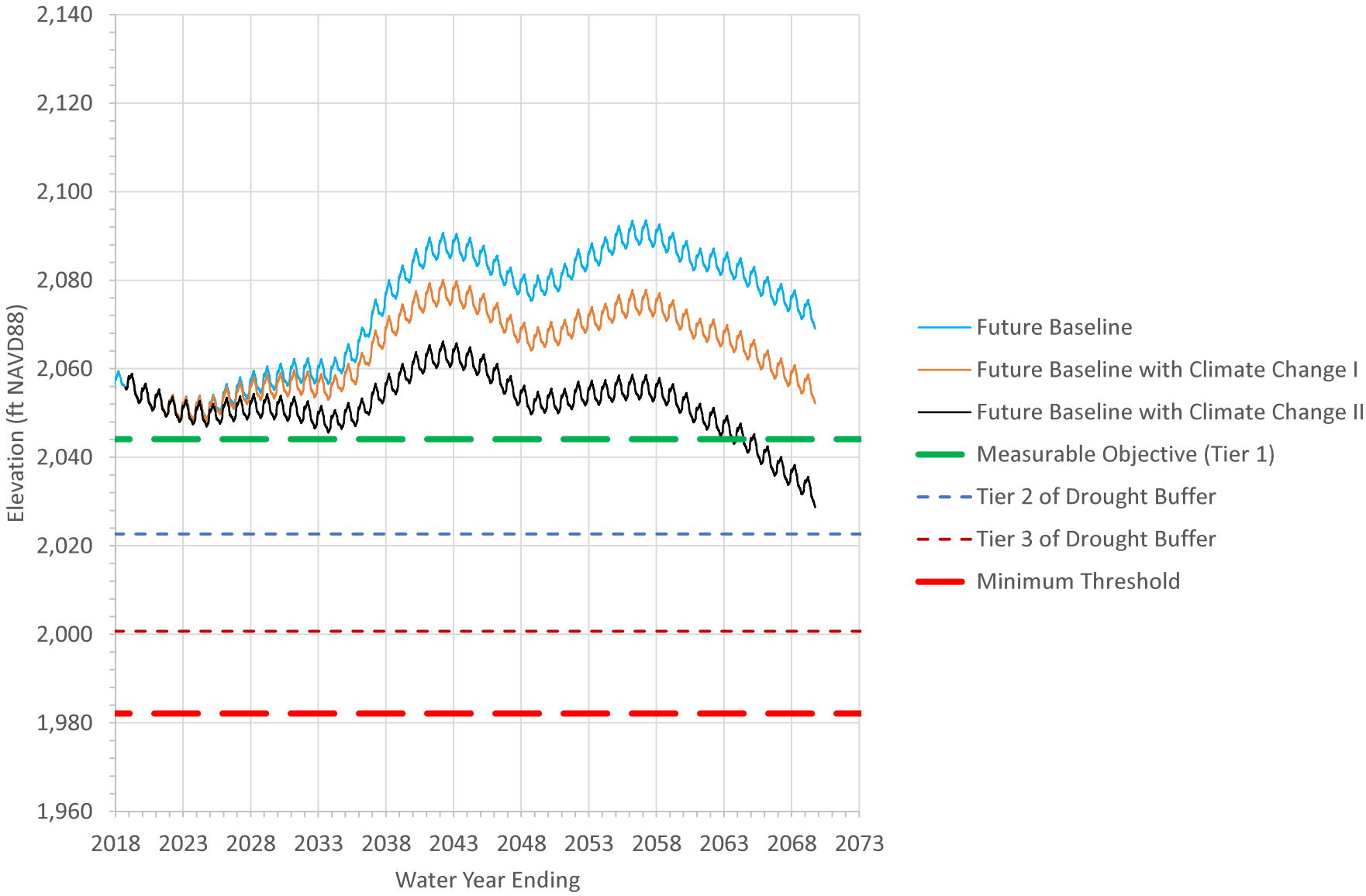
Figure 4-1. Predicted Volume in Storage by the Future Baseline and Future Baseline with Climate Change I and II Scenarios and Drought Buffer in the Calimesa Management Area



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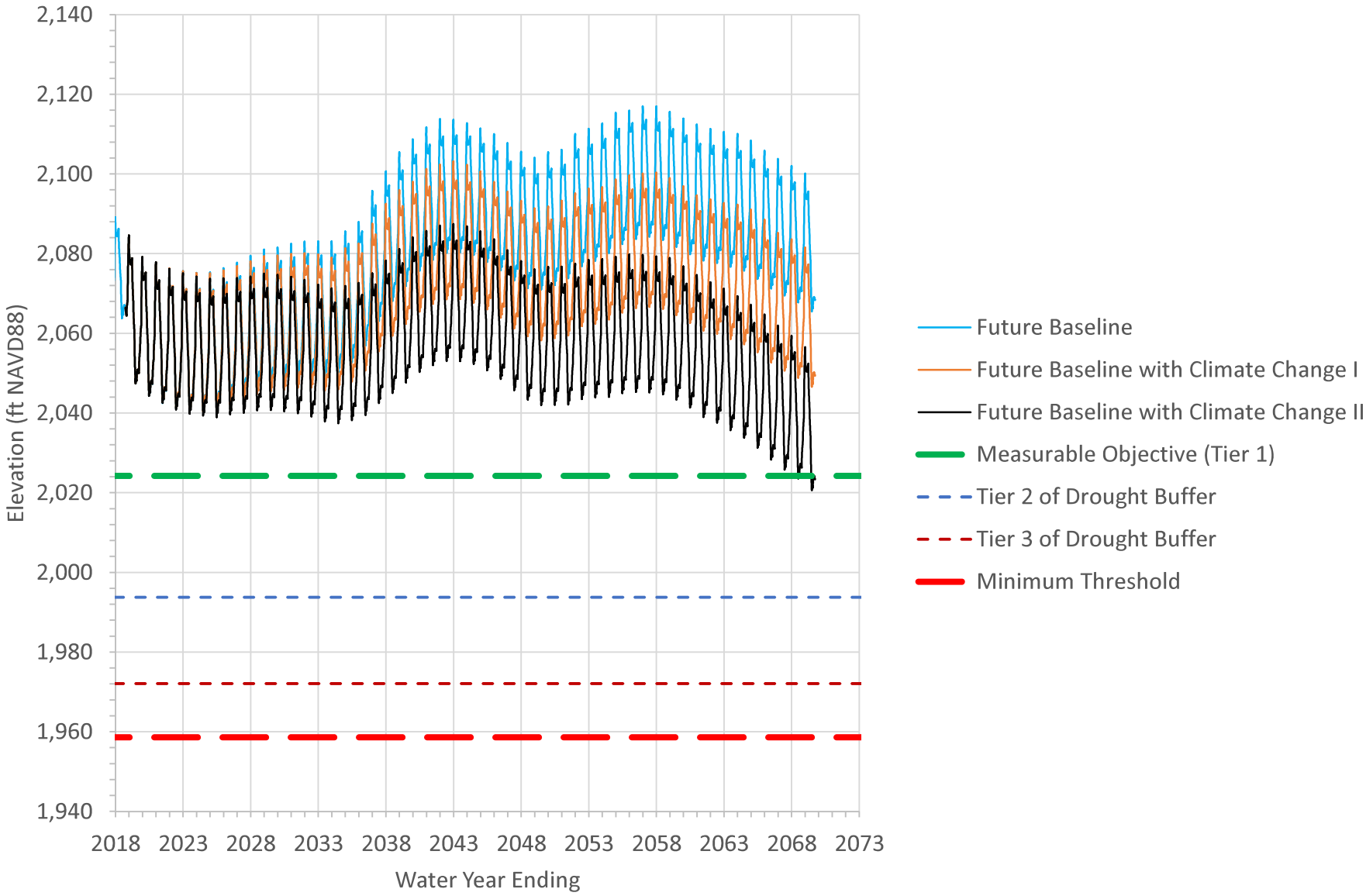
Figure 4-2. Predicted Hydraulic Heads and Management Action Tiers at South Mesa 7 in the Calimesa Management Area



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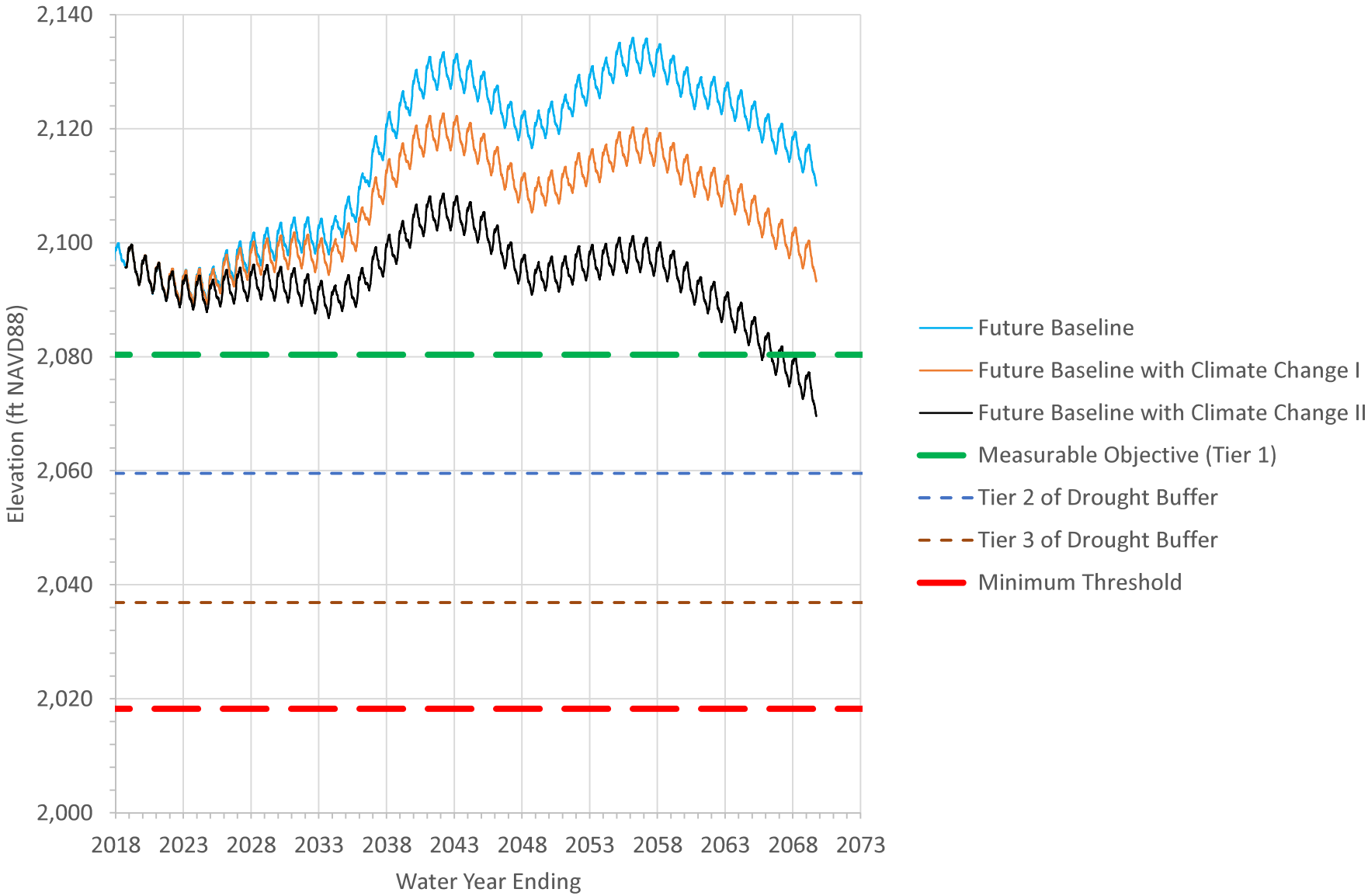
Figure 4-3. Predicted Hydraulic Heads and Management Action Tiers at South Mesa 9 in the Calimesa Management Area



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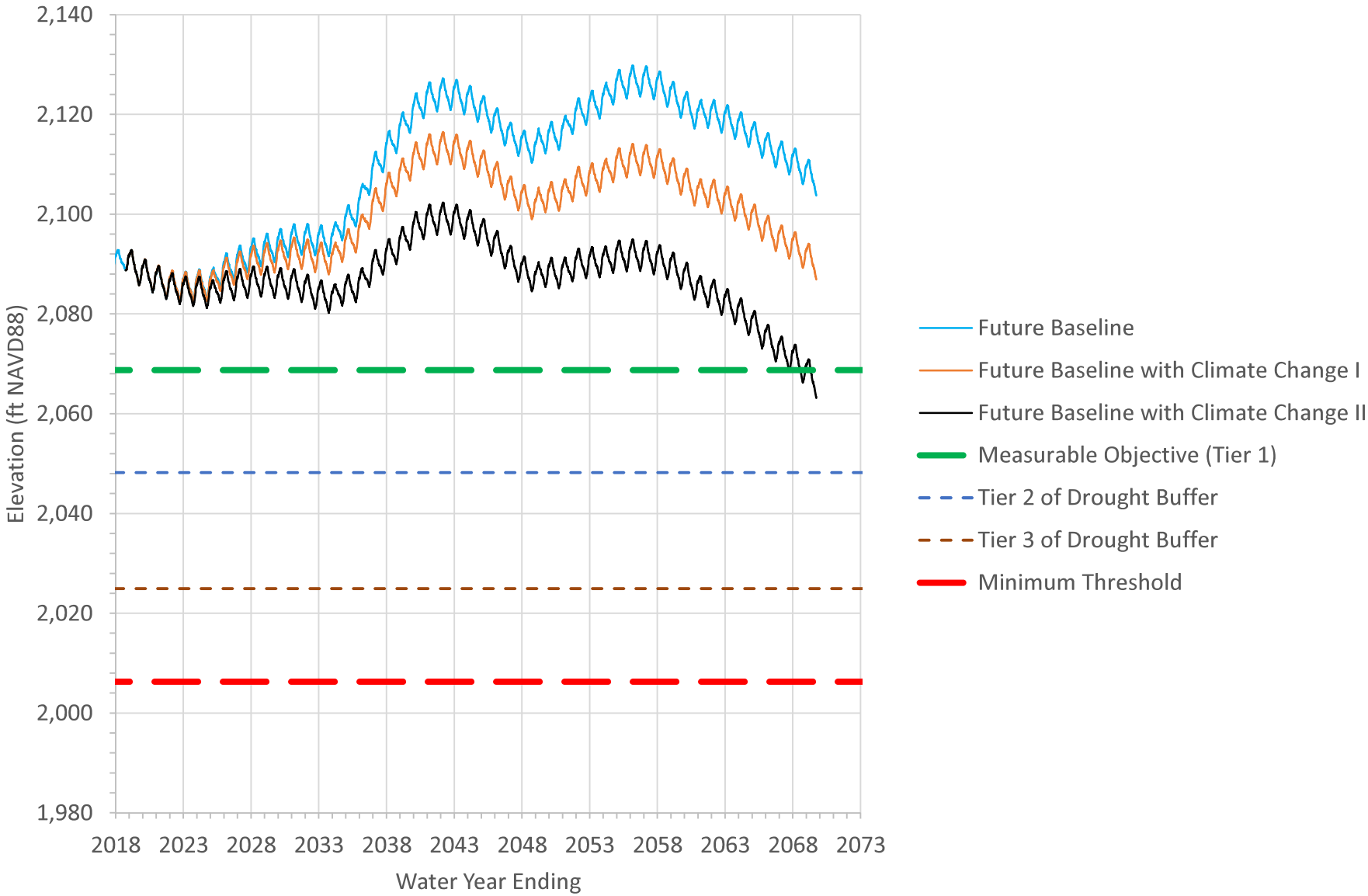
Figure 4-4. Predicted Hydraulic Heads and Management Action Tiers at South Mesa 12 in the Calimesa Management Area



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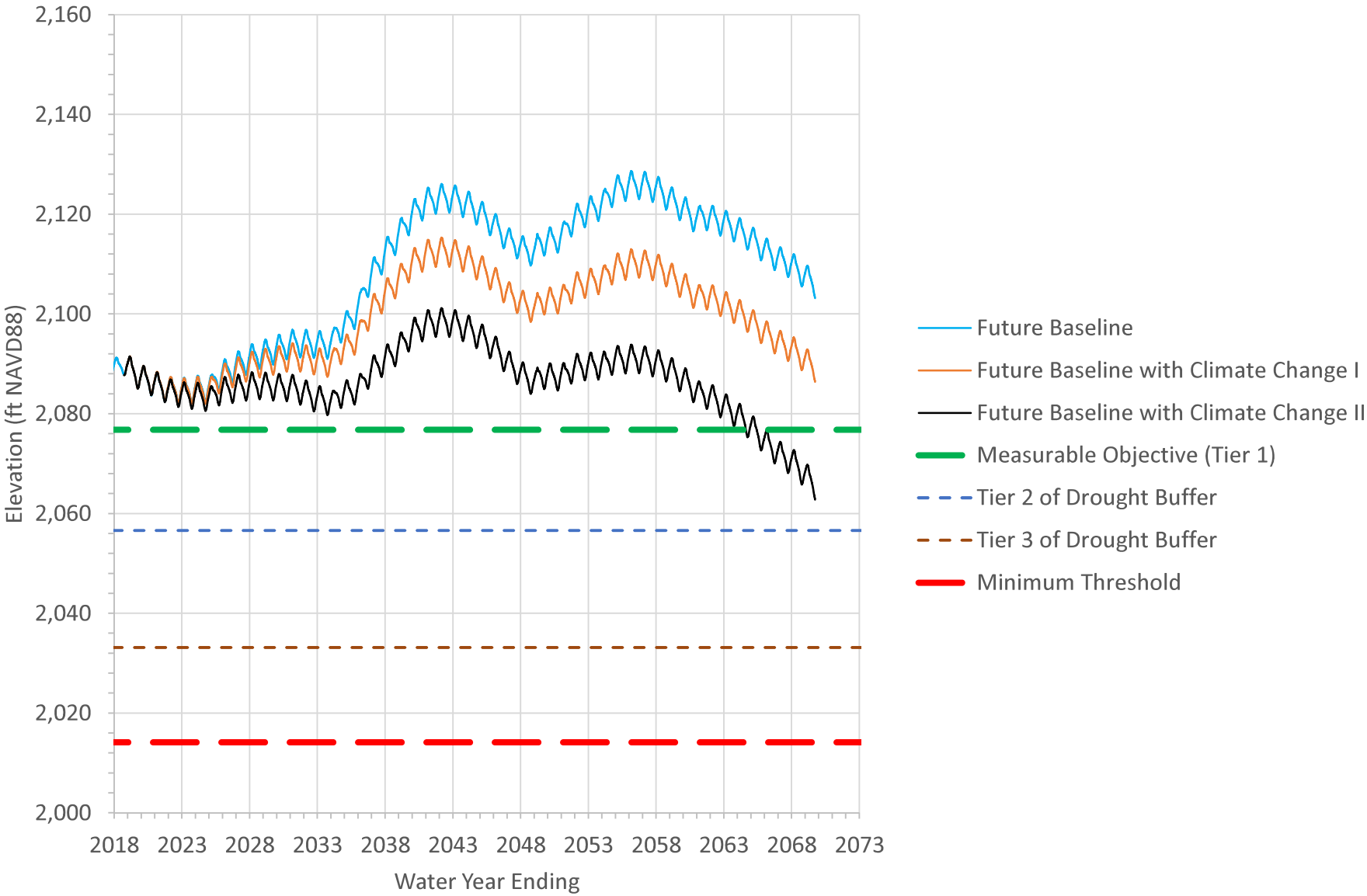
Figure 4-5. Predicted Hydraulic Heads and Management Action Tiers at South Mesa 17 in the Calimesa Management Area



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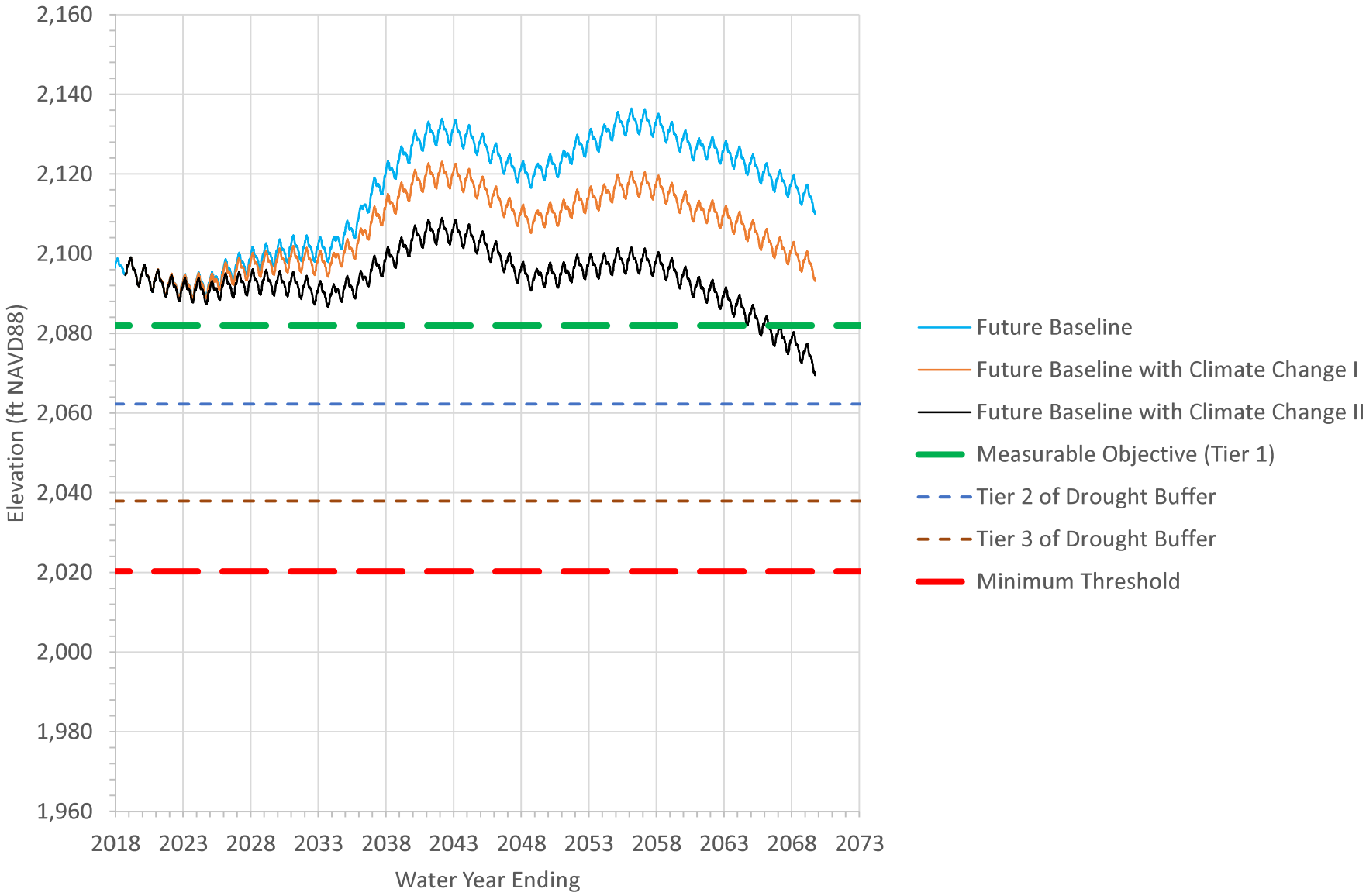
Figure 4-6. Predicted Hydraulic Heads and Management Action Tiers at YVWD-10 in the Calimesa Management Area



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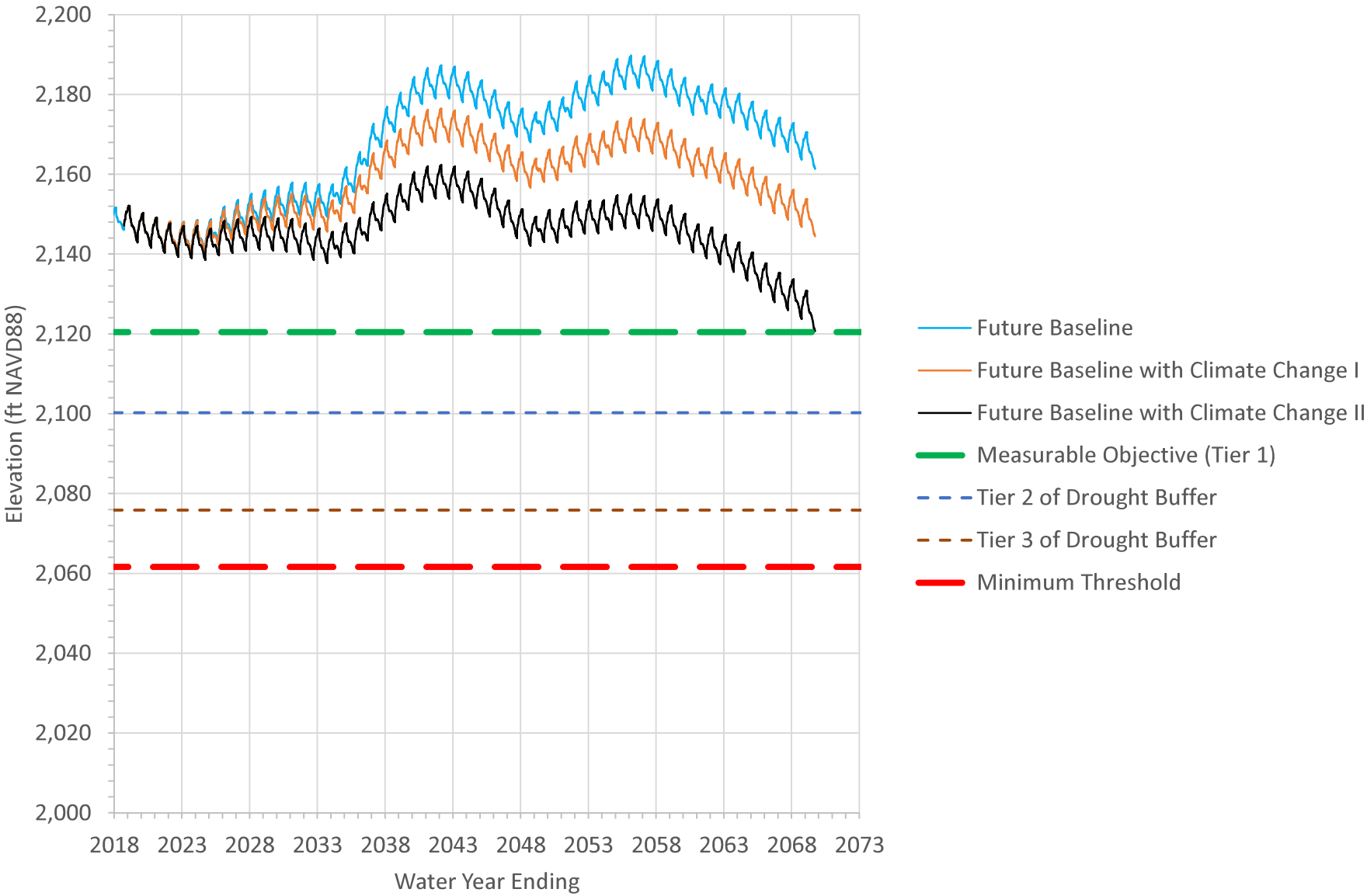
Figure 4-7. Predicted Hydraulic Heads and Management Action Tiers at YVWD-12 in the Calimesa Management Area



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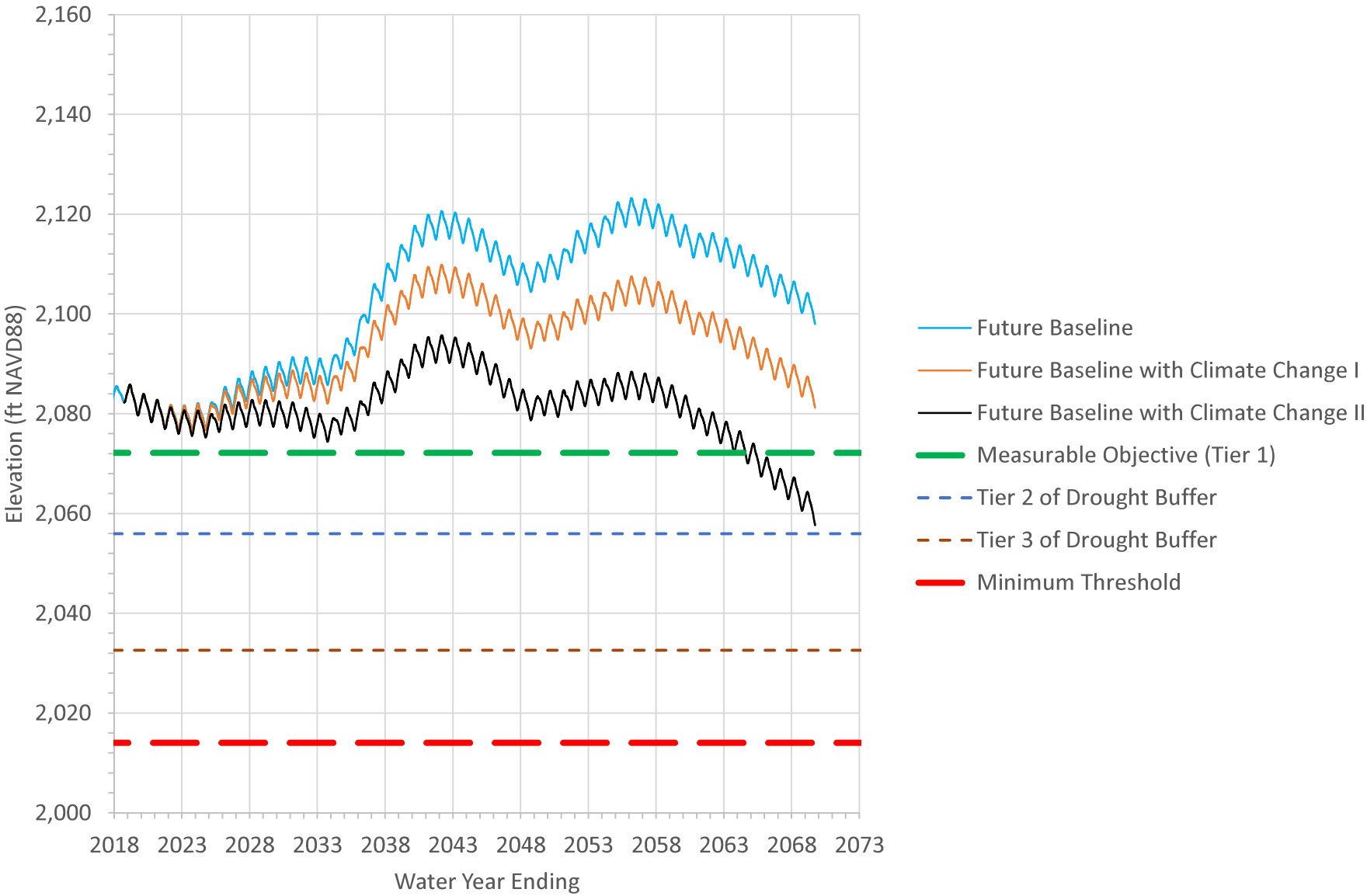
Figure 4-8. Predicted Hydraulic Heads and Management Action Tiers at YVWD-24 in the Calimesa Management Area



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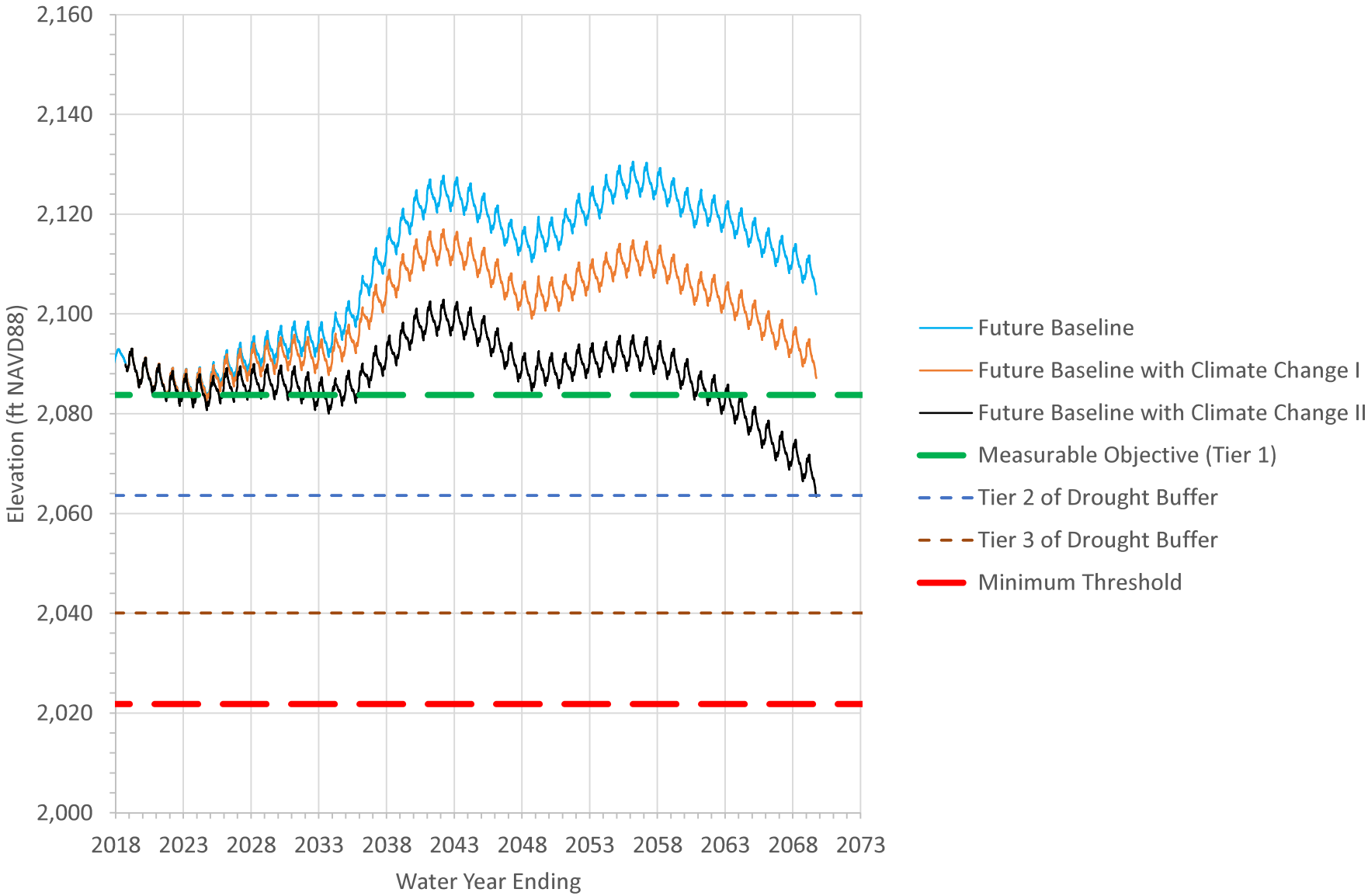
Figure 4-9. Predicted Hydraulic Heads and Management Action Tiers at YVWD-49 in the Calimesa Management Area



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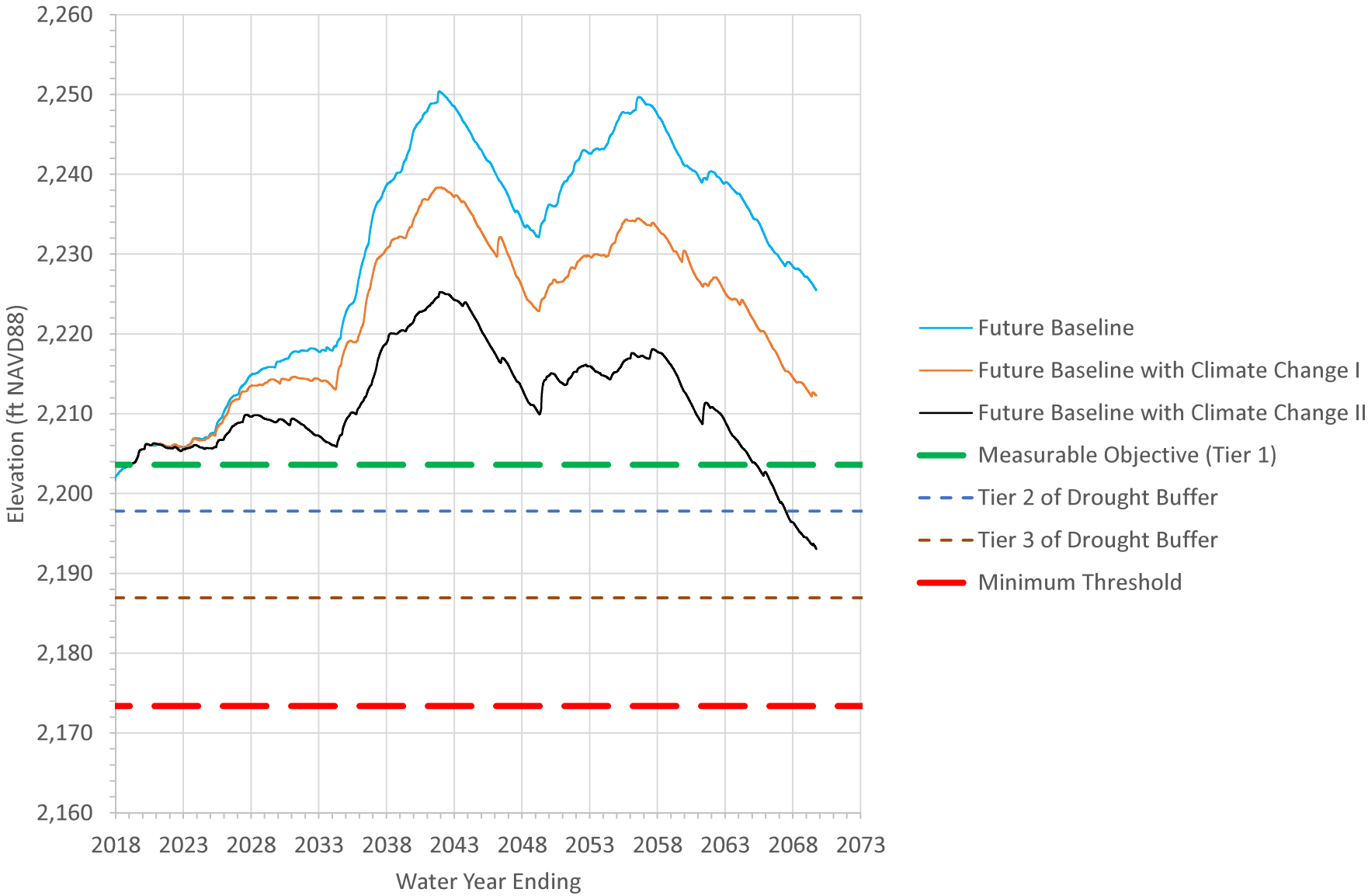
Figure 4-10. Predicted Hydraulic Heads and Management Action Tiers at Hog Canyon 2 in the Calimesa Management Area



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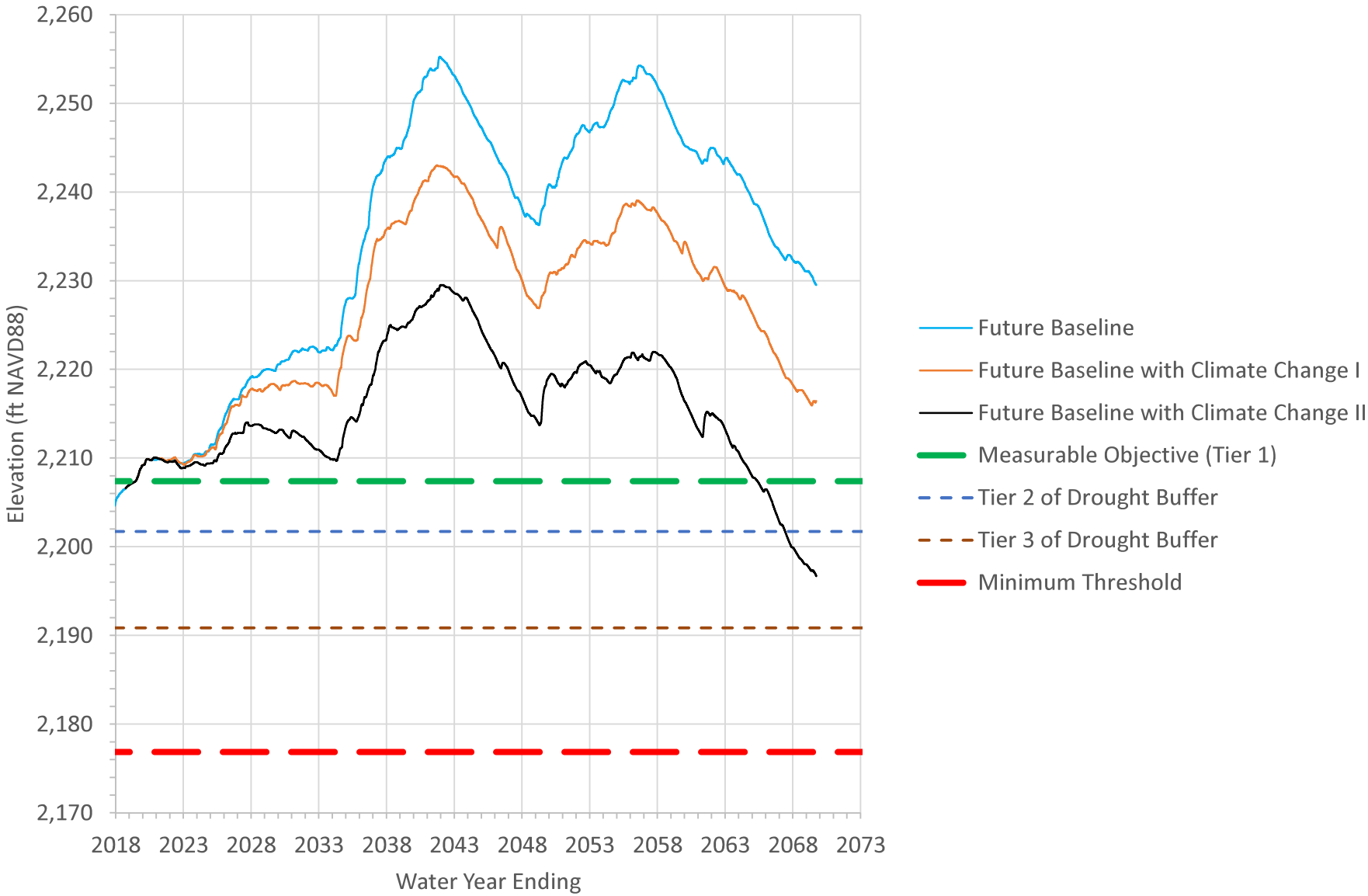
Figure 4-11. Predicted Hydraulic Heads and Management Action Tiers at USGS Equestrian Park #1 Well in the Calimesa Management Area



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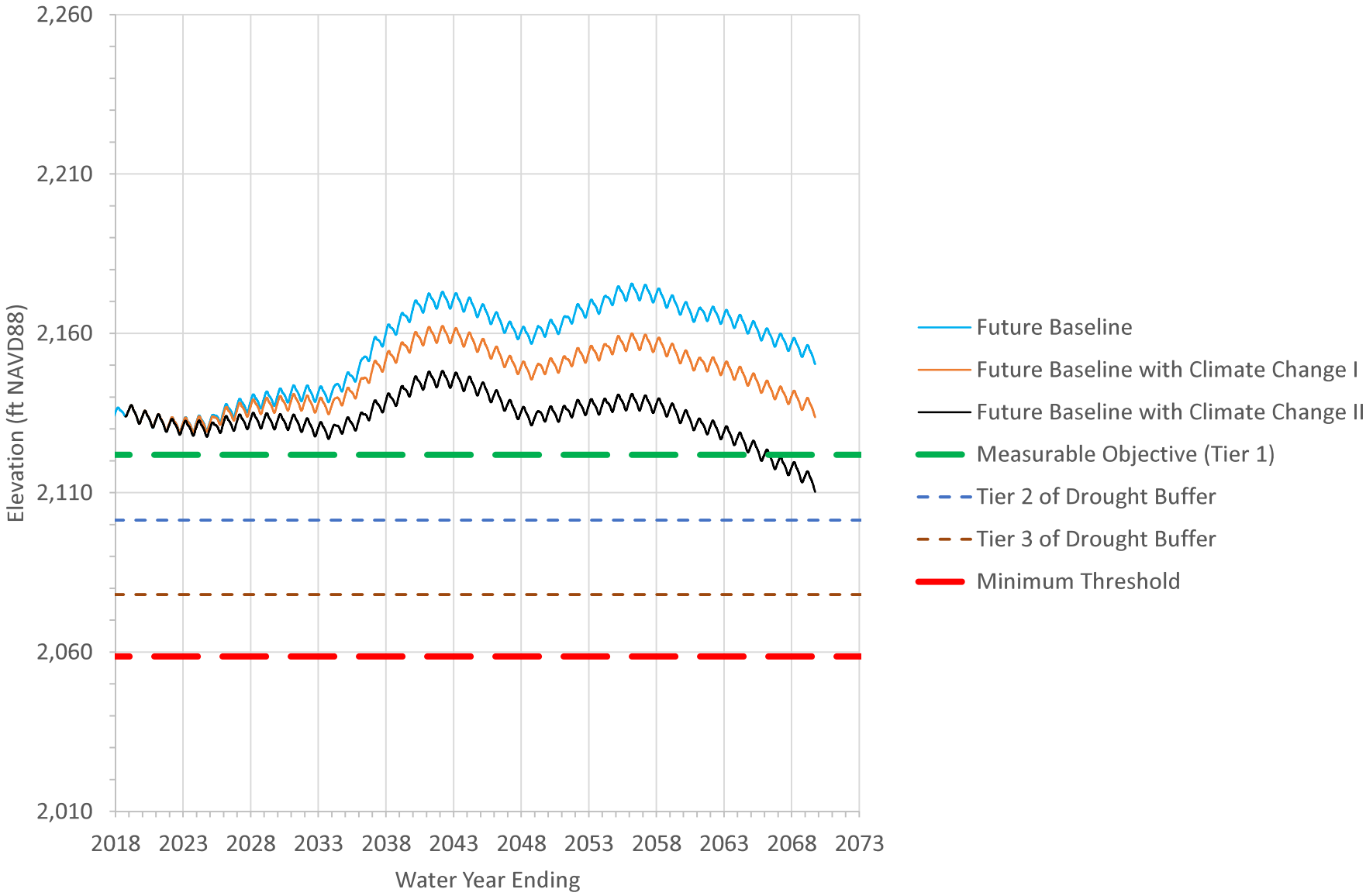
Figure 4-12. Predicted Hydraulic Heads and Management Action Tiers at USGS Equestrian Park #4 Well in the Calimesa Management Area



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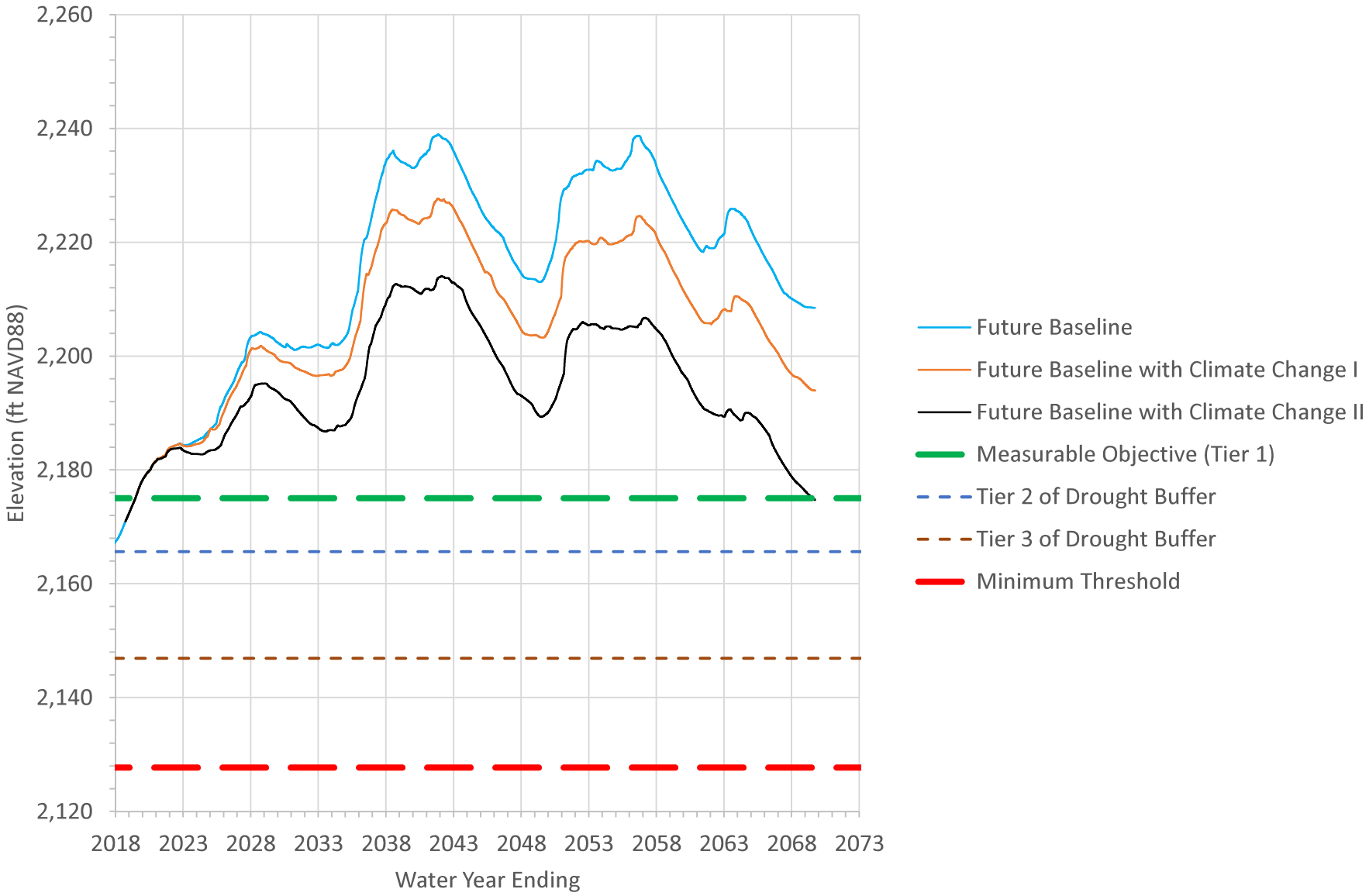
Figure 4-13. Predicted Hydraulic Heads and Management Action Tiers at USGS 6th Street #1 Well in the Calimesa Management Area



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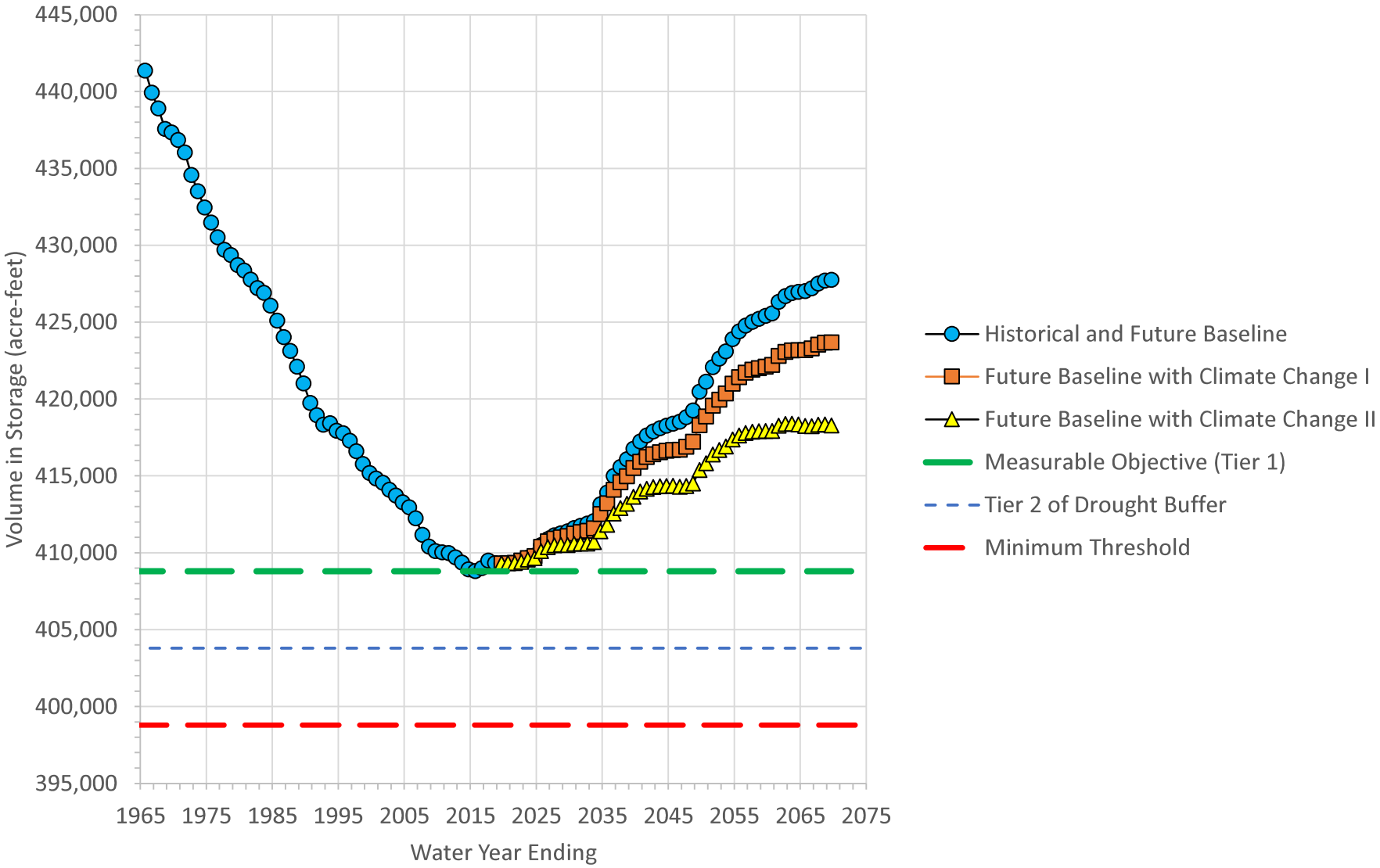
Figure 4-14. Predicted Hydraulic Heads and Management Action Tiers at USGS 6th Street #4 Well in the Calimesa Management Area



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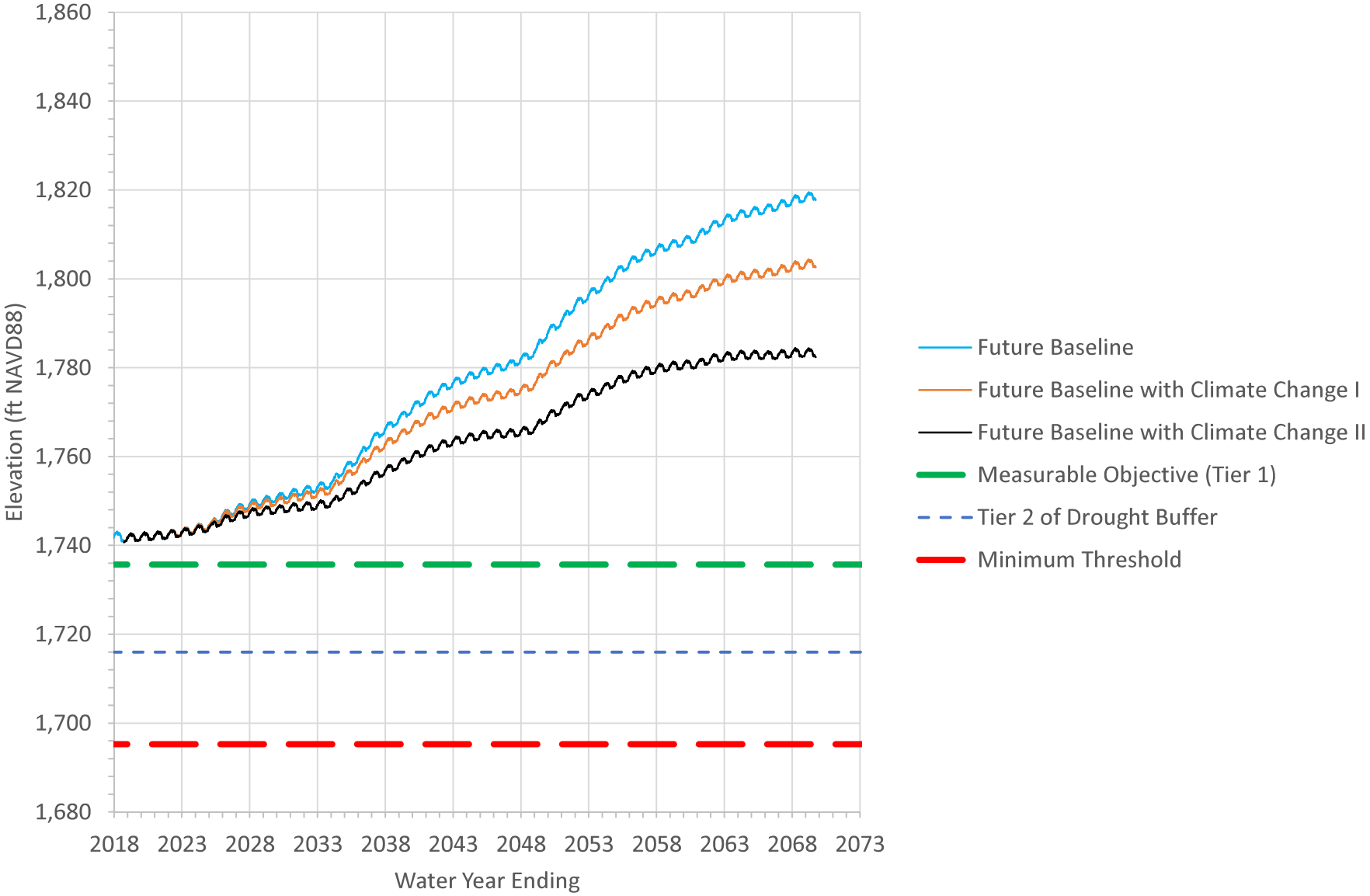
Figure 4-15. Predicted Volume in Storage by the Future Baseline and Future Baseline with Climate Change I and II Scenarios and Management Action Tiers in the Western Heights Management Area



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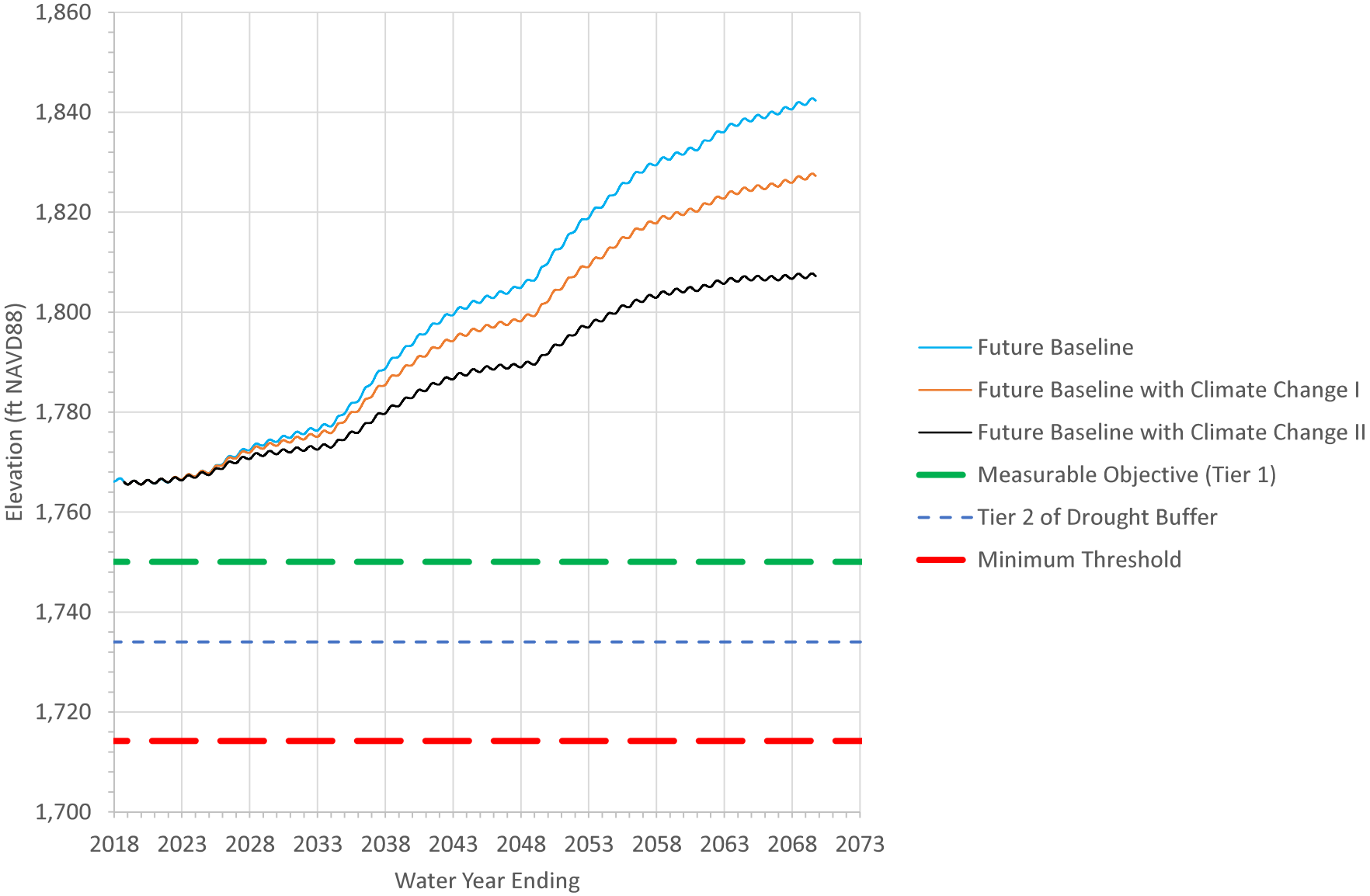
Figure 4-16. Predicted Simulated Hydraulic Heads and Management Action Tiers at WHWC-02A in the Western Heights Management Area



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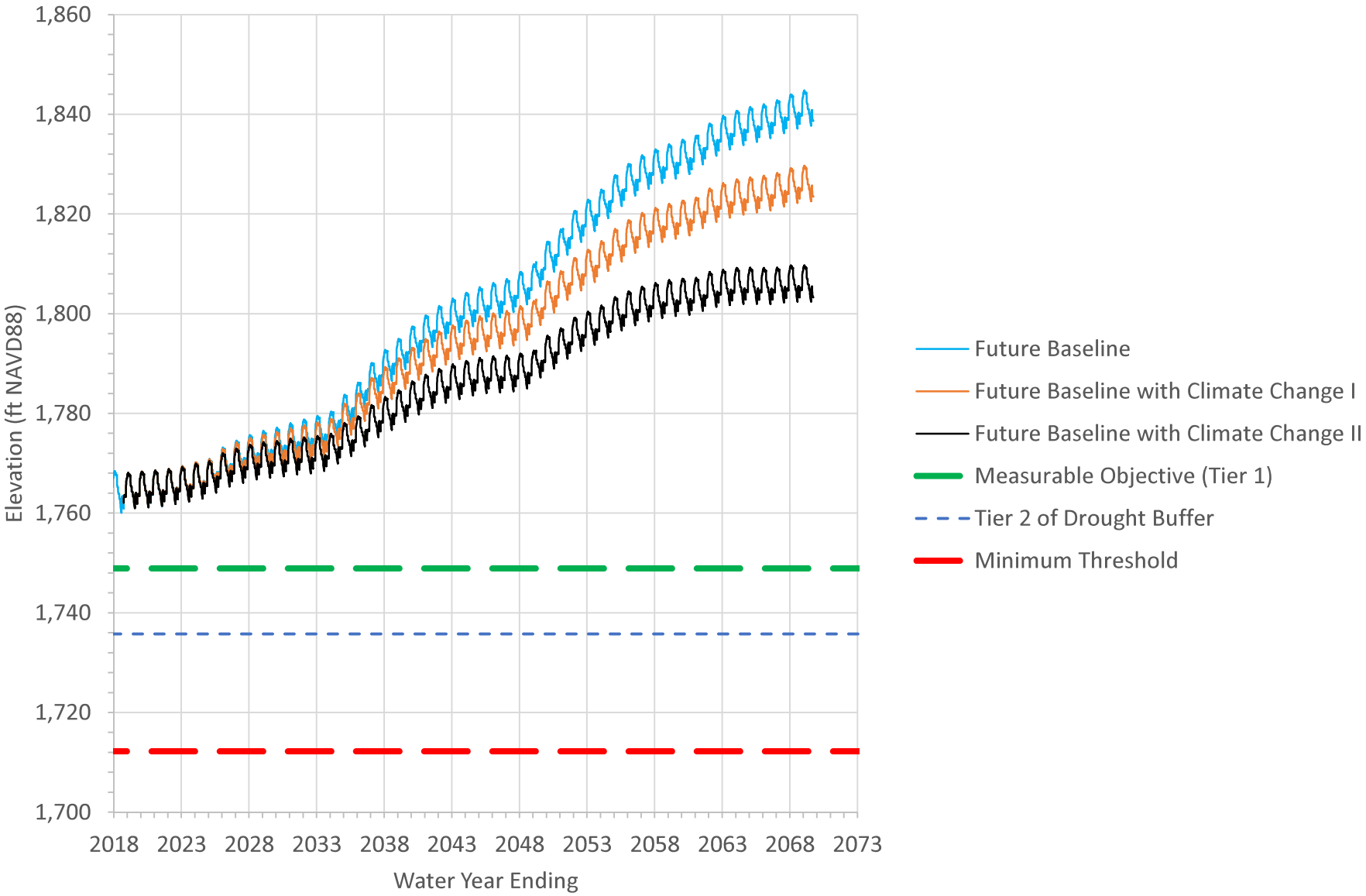
Figure 4-17. Predicted Simulated Hydraulic Heads and Management Action Tiers at WHWC-10 in the Western Heights Management Area



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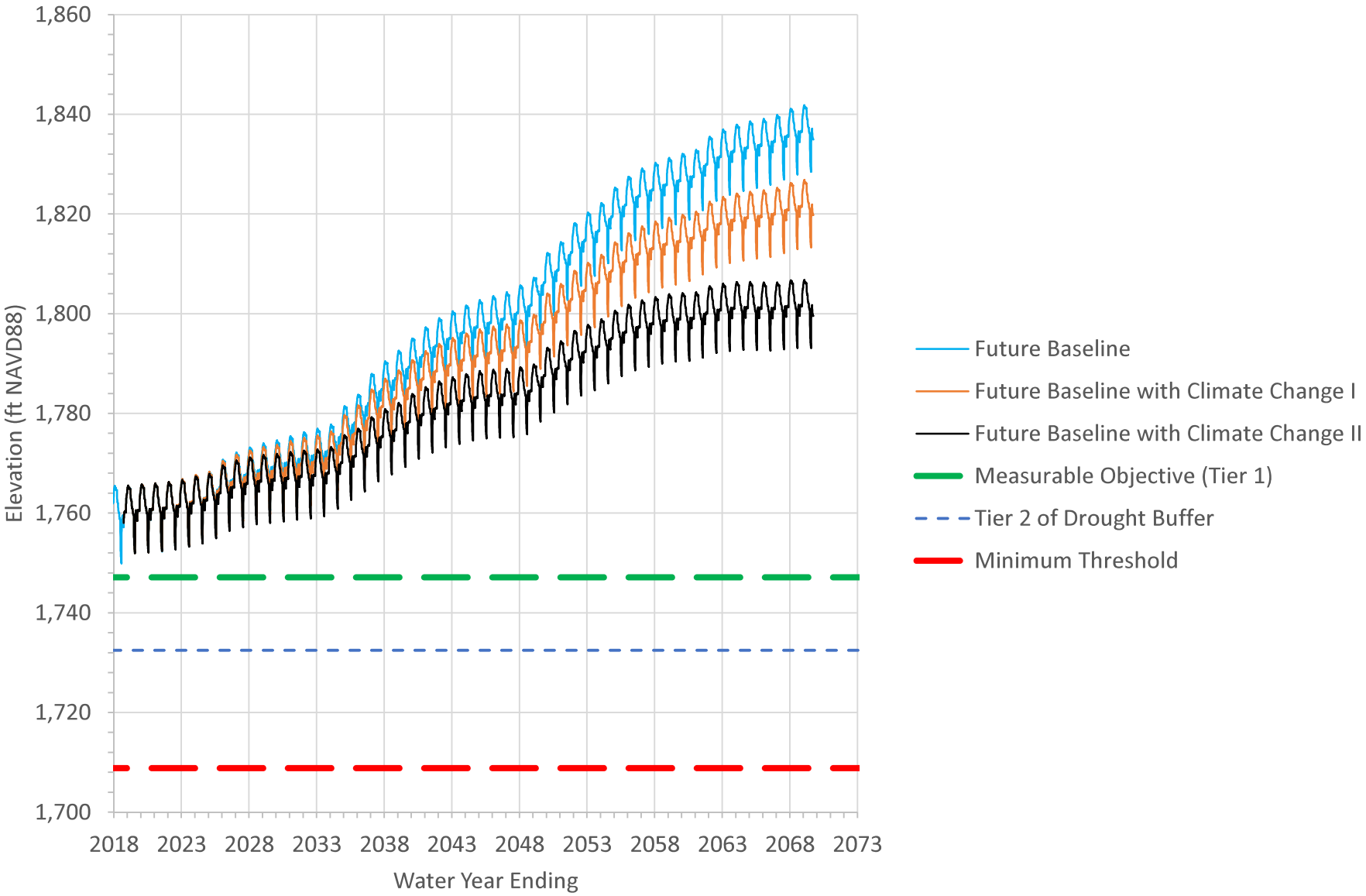
Figure 4-18. Predicted Simulated Hydraulic Heads and Management Action Tiers at WHWC-11 in the Western Heights Management Area



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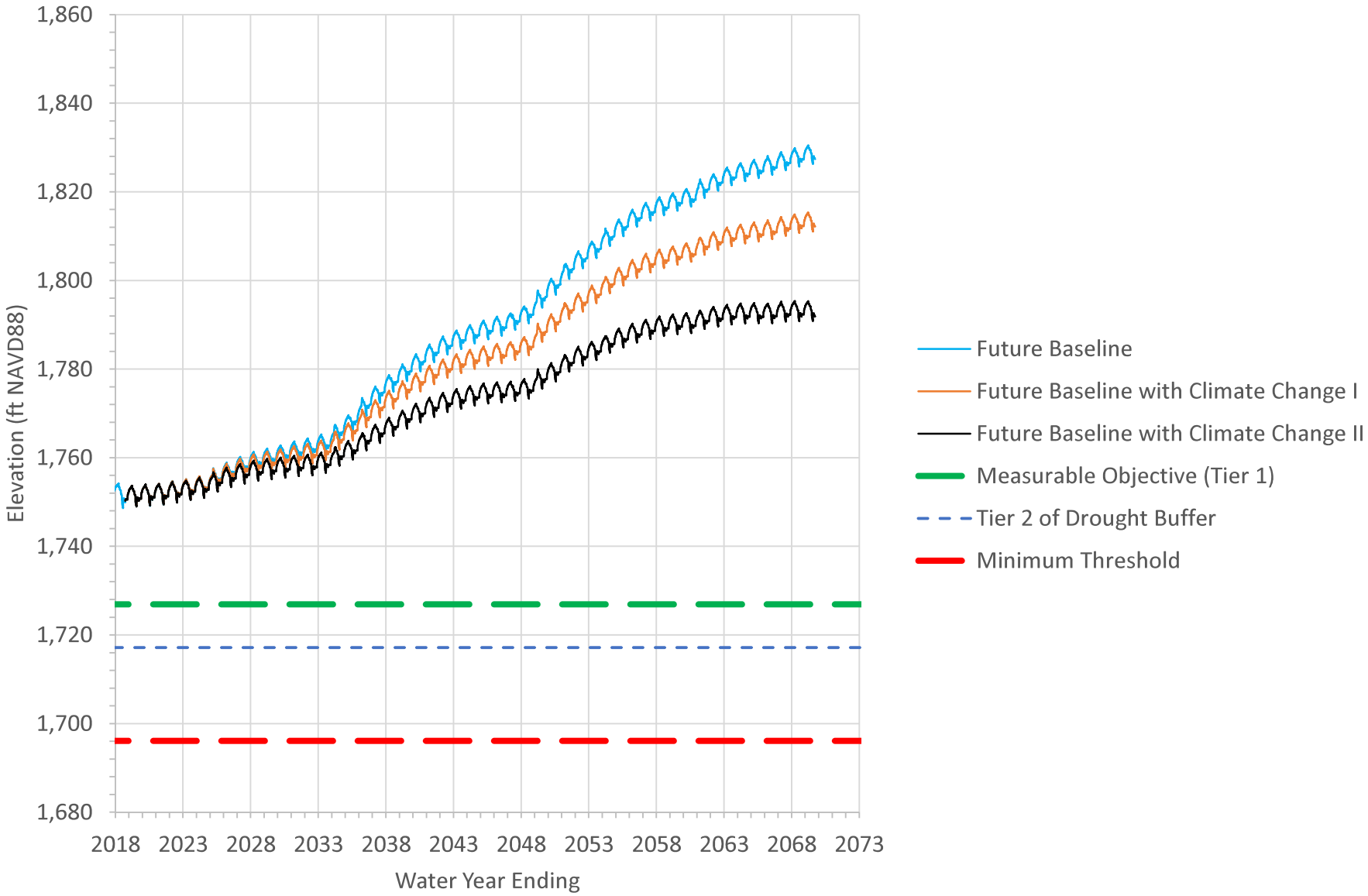
Figure 4-19. Predicted Simulated Hydraulic Heads and Management Action Tiers at WHWC-12 in the Western Heights Management Area



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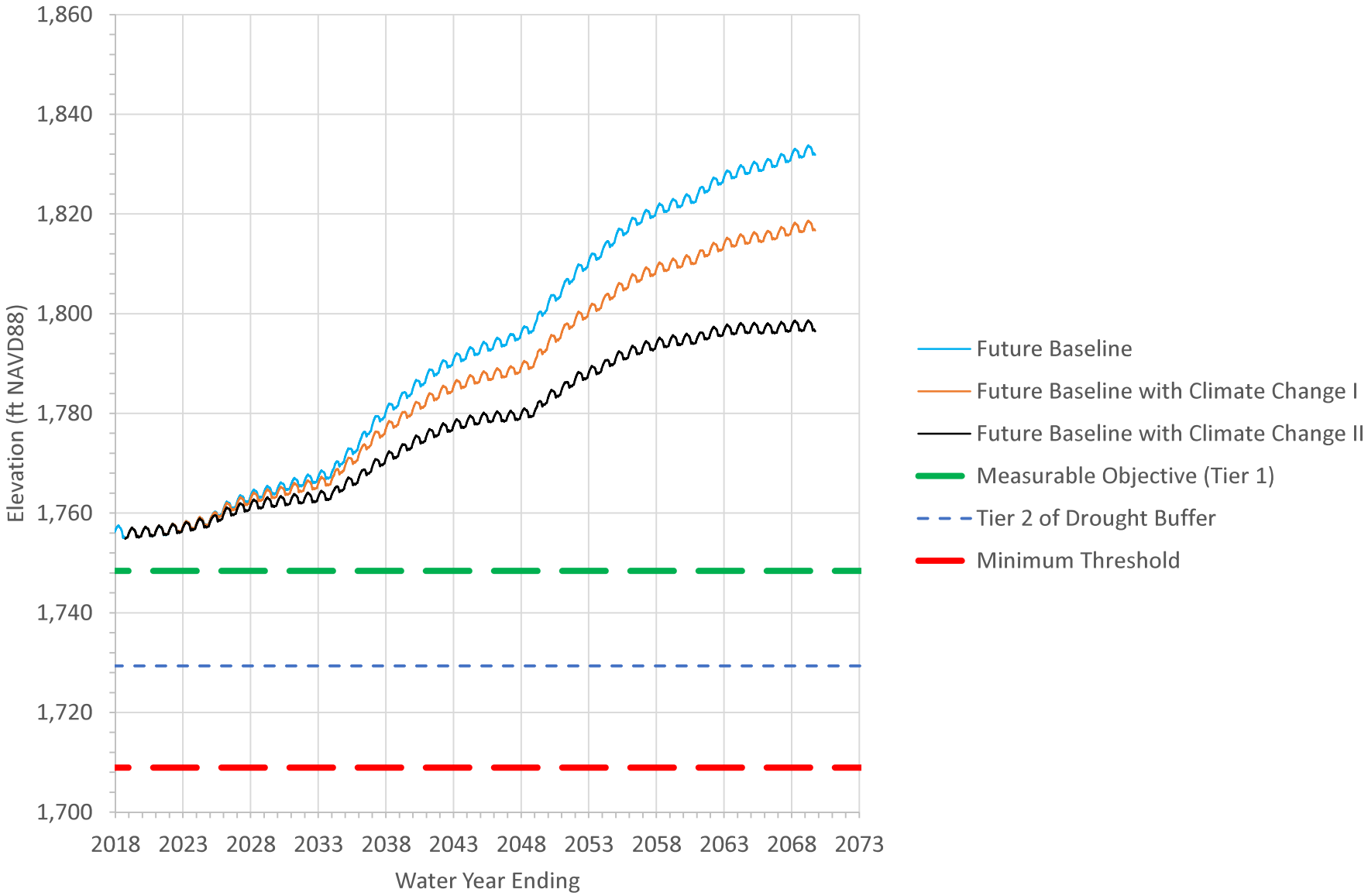
Figure 4-20. Predicted Simulated Hydraulic Heads and Management Action Tiers at WHWC-14 in the Western Heights Management Area



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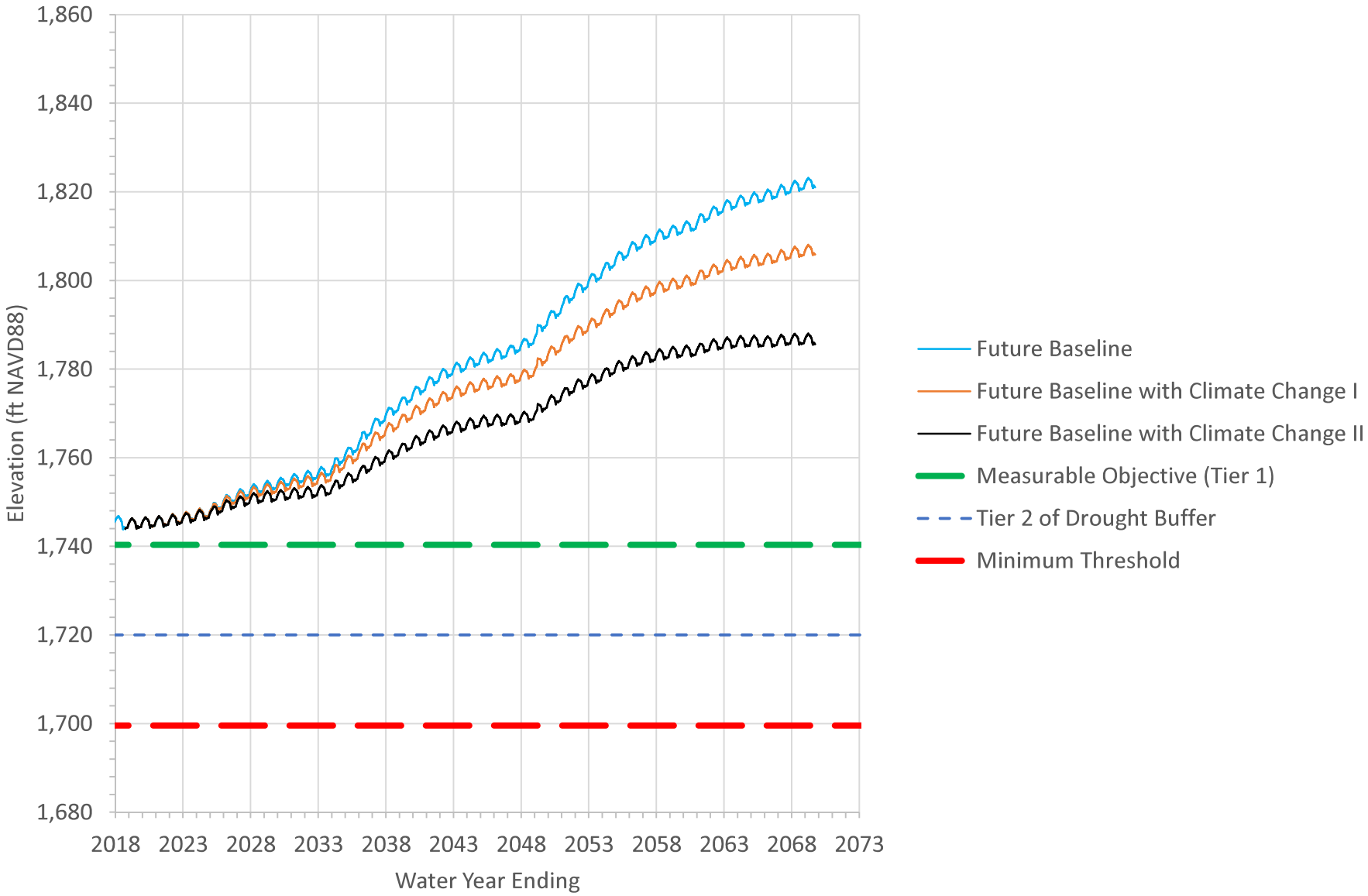
Figure 4-21. Predicted Simulated Hydraulic Heads and Management Action Tiers at USGS Dunlap #2 Well in the Western Heights Management Area



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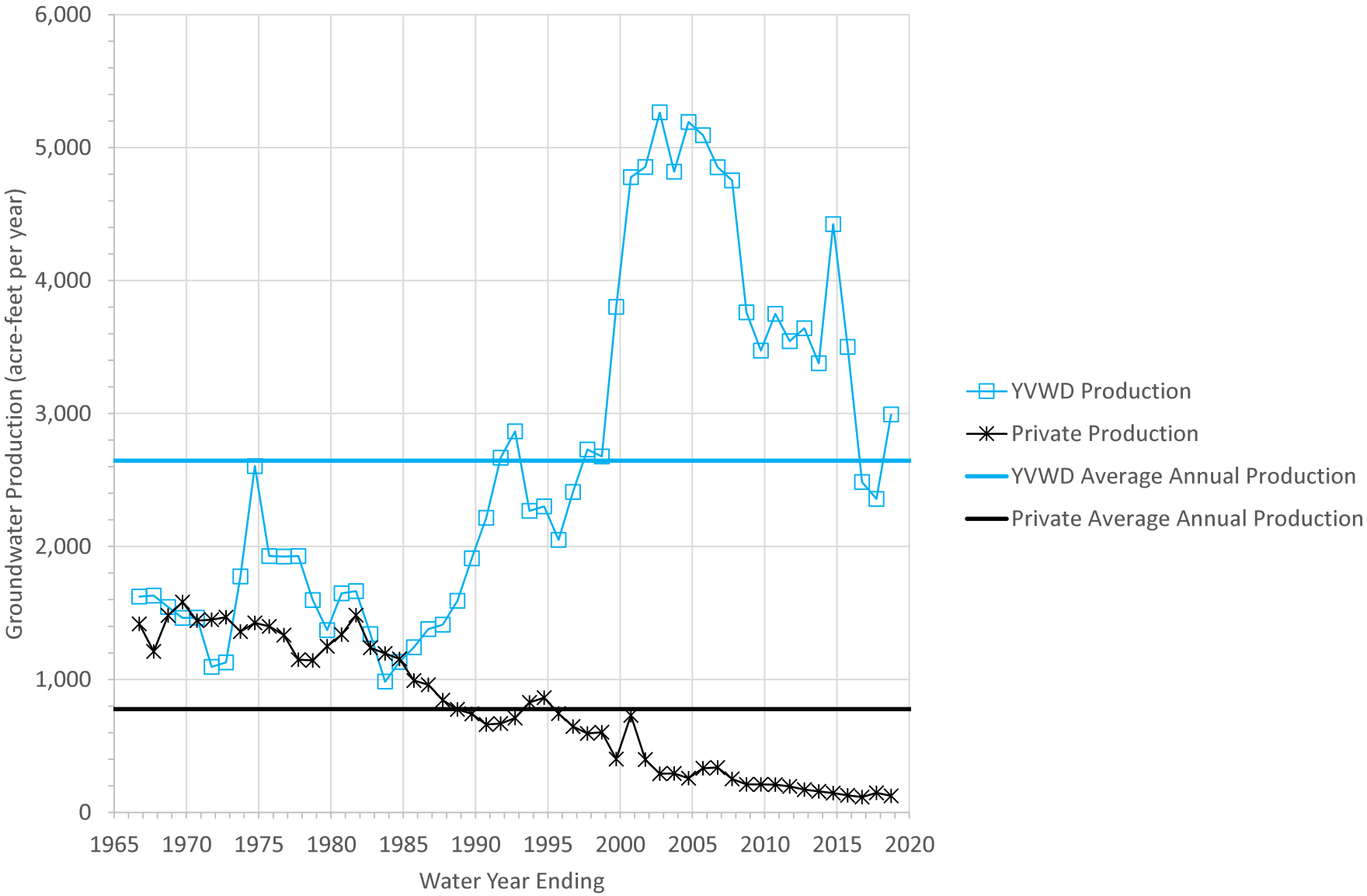
Figure 4-22. Predicted Simulated Hydraulic Heads and Management Action Tiers at USGS Dunlap #4 Well in the Western Heights Management Area



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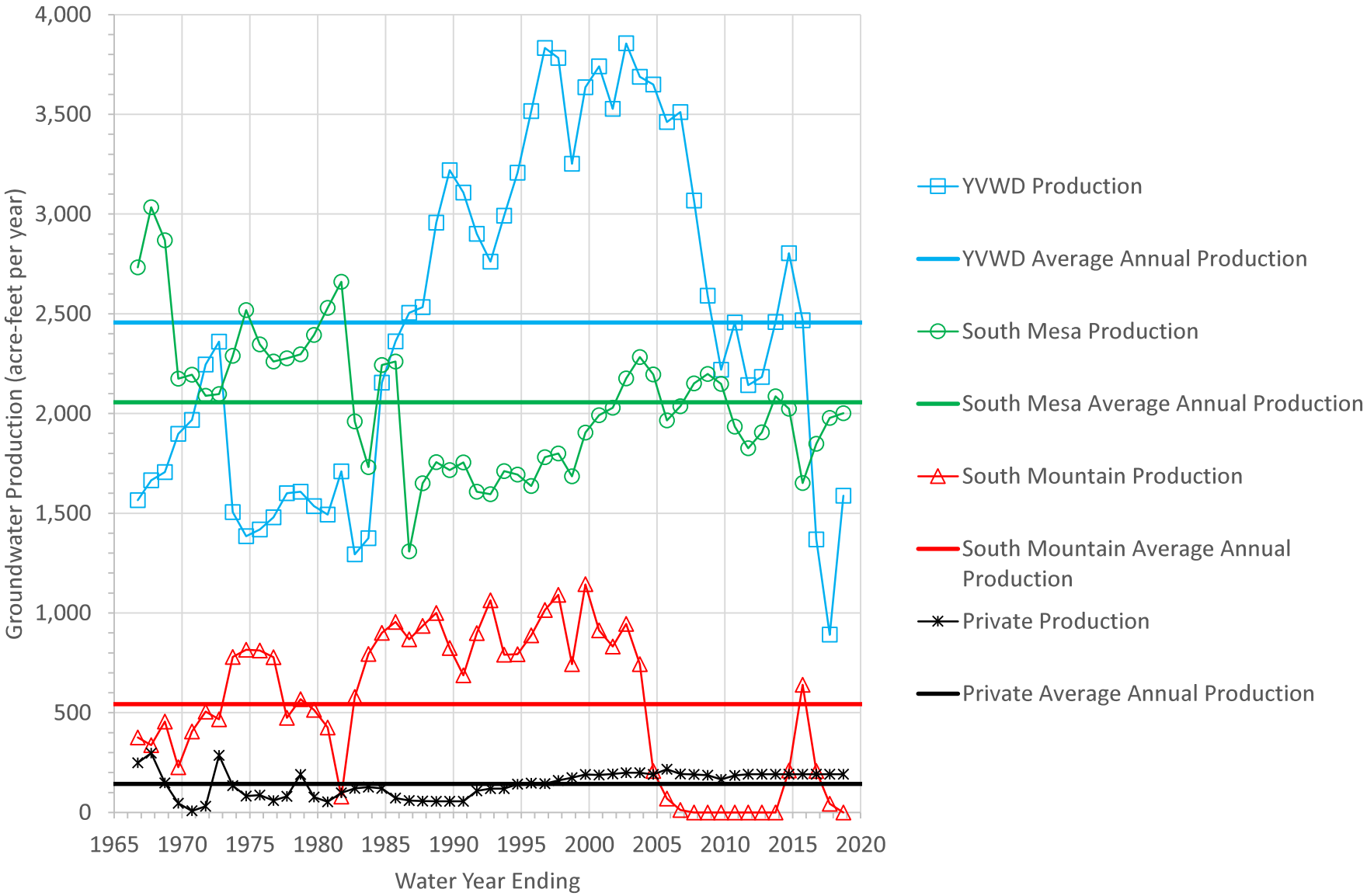
Figure 4-23. Historical Groundwater Production by Agency in the North Bench Management Area



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Figure 4-24. Historical Groundwater Production by Agency in the Calimesa Management Area



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5 Plan Implementation

5.1 Introduction to Plan Implementation

Upon adoption of this GSP by the Yucaipa GSA, the primary activities associated with implementing the GSP include administrative duties by the member agencies of the Yucaipa GSA, the management of data collection, data validation, and analysis to evaluate conditions in the Subbasin, the preparation and submittal of annual reports and periodic evaluations, with associated data, to DWR, and an assessment of conditions in the Subbasin and determination if management actions need to be implemented. During the initial 5-year period after the GSP is adopted, the Yucaipa GSA will evaluate options to address data gaps identified in Section 2.6.3, and conduct feasibility studies to evaluate the effectiveness of potential spreading basins and other programs that would maintain or achieve sustainability in the Subbasin.

5.2 GSP Administration

The Yucaipa GSA is responsible for implementing the GSP after it is adopted. The administrative duties of the Yucaipa GSA include, at a minimum, the following:

- Adhering to the implementation schedule (Figure 5-1) to ensure that the Yucaipa GSA conducts the required minimum data collection periods in the Spring and Fall every year, the annual reports are prepared and submitted to DWR by April 1, and the periodic evaluation reports are submitted at least every 5 years or when the GSP is amended.
- Facilitate access to all wells and stream flow gauging stations in the monitoring network, including the RMPs in each management area, to ensure the collection of representative data by following the monitoring protocols presented in Section 3.6.4.
- Validate and upload data to the DMS for the purposes of evaluating conditions in the Plan Area.
- Facilitate the submission of annual reports and periodic evaluation reports per Sub article 7 of Article 5 of the California Code of Regulations Division 2 Chapter 1.5 (23 California Code of Regulations, Section 356). This section describes the procedures and requirements for preparing and submitting the annual reports and periodic evaluations to DWR.
- Facilitate public engagement.

The costs associated with administering the GSP will be shared per the MOA (Appendix 1-B). The MOA established a cost share structure with the water purveyors responsible for 75% and the San Bernardino Valley Municipal Water District and San Gorgonio Pass Water Agency (Regionals) and the Municipalities responsible for 25% of the costs associated with the administration of the Yucaipa GSA and the development and implementation of the GSP. In general, Yucaipa GSA plans to fund operating costs by using general operating funds, charging its customers through water rates, and/or fees assessed to new developments to connect to existing water services (public water supply, sanitary sewer). The estimated annual costs for implementing the GSP, including the estimated share in costs for each water purveyor and each Municipality and Regional, are summarized in Table 5-1.

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Table 5-1. Estimated Annual Costs for Implementing the GSP

GSP Implementation Task	Estimated Annual Cost	Each Water Purveyor	Each Municipality and Regional
GSA Administrative Costs	$20,000.00	$3,750.00	$1,250.00
Public Engagement	$5,000.00	$937.50	$312.50
GSP Annual Reports	$30,000.00	$5,625.00	$1,875.00
GSP Periodic Evaluations (includes update, refine, recalibrate numerical model)	$40,000.00	$7,500.00	$2,500.00
DMS Management	$5,000.00	$937.50	$312.50
Groundwater Level Monitoring (includes installation/maintenance to obtain data, QA/QC, measuring devices)	$15,000.00	$2,812.50	$937.50
Groundwater Production Monitoring (includes installation/maintenance to obtain data, QA/QC, meter calibration)	$10,000.00	$1,875.00	$625.00
Groundwater Quality Monitoring (includes installation/maintenance to obtain data, QA/QC, field meters)	$15,000.00	$2,812.50	$937.50
Install, Maintain Monitoring Wells	$15,000.00	$2,812.50	$937.50
Surface Water Stream Flow Gaging Stations Installation and Maintenance Program	$15,000.00	$2,812.50	$937.50
Total	$170,000.00	$31,875.00	$10,625.00

The first five GSP Implementation tasks listed in Table 5-1, GSP Administrative Costs, Public Engagement, GSP Annual Reports, GSP Periodic Evaluations, and DMS Management, are categorized as administrative tasks in which each member agency of the Yucaipa GSA will provide funds at the beginning of each calendar year to cover their estimated annual costs. The last five GSP Implementation tasks listed in Table 5-1, Groundwater Level Monitoring, Groundwater Production Monitoring, Groundwater Quality Monitoring, Installation and Maintenance of Wells in the Monitoring Network, and the Installation and Maintenance of Surface Water Gaging Stations are categorized as monitoring and data collection tasks in which each member agency of the Yucaipa GSA will provide funds as costs are incurred when implementing these tasks. The annual costs listed in Table 5-1 are estimated based on an understanding of current conditions and anticipation of the level of effort in implementing the GSP. These estimated costs will be reevaluated every year and may be modified based on actual costs incurred after the GSP is adopted and implemented.

Table 5-2 provides a summary of the estimated annual costs for each water purveyor and each Municipality and Regional of the Yucaipa GSA.

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Table 5-2. Estimated Annual Costs for Each Water Purveyor and Each Municipality and Regional

Yucaipa GSA Member Agency		Estimated Annual Upfront Costs	Estimated Annual Incurred Costs	Estimated Total Annual Cost
Water Purveyors	South Mesa	$18,750.00	$13,125.00	$31,875.00
	South Mountain	$18,750.00	$13,125.00	$31,875.00
	WHWC	$18,750.00	$13,125.00	$31,875.00
	YVWD	$18,750.00	$13,125.00	$31,875.00
Municipality and Regional	City of Redlands	$6,250.00	$4,375.00	$10,625.00
	City of Yucaipa	$6,250.00	$4,375.00	$10,625.00
	SBVMWD	$6,250.00	$4,375.00	$10,625.00
	SGPWA	$6,250.00	$4,375.00	$10,625.00
Estimated Total Annual Cost		**$100,000.00**	**$70,000.00**	**$170,000.00**

5.3 Data Collection, Validation, and DMS

Member agencies of the Yucaipa GSA will continue participating in monitoring programs already implemented (Section 1.5.1) to collect groundwater elevation, groundwater quality, and production data to characterize conditions in the Subbasin. The member agencies will follow the monitoring protocols presented in Section 3.6.4 to collect data that is accurate and representative of conditions in the Subbasin, and will upload the data to the DMS. As discussed in Section 3.6, the monitoring schedule to collect static groundwater elevation data, at a minimum, is March 9 to 22 for the spring and October 9 to 22 for the fall. The recommended frequency to collect static groundwater elevation data is monthly. Water quality data is collected per the monitoring requirements under Title 22 for municipal water supply wells and the MBMP, and water quality sampling will follow the monitoring protocols presented in Section 3.6.4.3.

The water purveyors use calibrated flow meters and totalizers to track the volume of groundwater extracted at their respective municipal and irrigation water supply wells. Production data is collected on a monthly basis. Precipitation gauges have been maintained and monitored by the SBCFCD and the USGS, both of which are public agencies that provide their respective data in the public domain. The Yucaipa GSA will access this data and upload it to the DMS.

During the initial 5-year period after the GSP is adopted, the Yucaipa GSA will evaluate options for filling data gaps identified in this GSP. The primary data gaps identified were a lack of knowledge of existing private well users operating in the Subbasin, spatial gaps in groundwater elevation data in the eastern section of the Calimesa management area, and stream flow gauging stations to measure low to normal flows. As discussed in Section 3.6.6, the Yucaipa GSA will make efforts to obtain information on private well users, improve existing or install new stream flow gauging stations to enhance the characterization of stream flow in the Plan Area, and improve the spatial and temporal monitoring coverage of the Subbasin. For instance, pressure transducers may be installed at some wells in the monitoring network to reduce the time-window over which groundwater elevations are manually collected. The costs of obtaining information from private well users, improving the monitoring of surface water flows, and addressing data gaps in the monitoring network are associated with GSP implementation.

5.4 Annual Reports

Sub article 7 of Article 5 of the California Code of Regulations Division 2 Chapter 1.5 (23 CCR, Section 356.2) describes the general requirements for the annual reports to be submitted to DWR after the GSP is adopted by the Yucaipa GSA. Annual reports are due to DWR by April 1 of each year following the adoption of the GSP. Each annual report shall include the following components:

- General information, including an executive summary and a location map depicting the basin, jurisdictional boundaries, and Plan Area covered by the report.
- A detailed description and graphical representation of:
  - Groundwater elevation data from wells identified in the monitoring network,
  - Groundwater elevation contour maps depicting, at a minimum, the seasonal high and seasonal low groundwater elevations observed in the preceding year,
  - Groundwater elevation hydrographs depicting historical trends updated with data collected in the preceding year,
  - Groundwater extractions for the preceding water year,
  - An accounting of surface water supply, including imported SWP water, imported groundwater from outside the Plan Area, and surface water diversions,
  - An accounting of total water use and identity of the water use sector,
  - Change in groundwater in storage,
- A description of progress toward implementing the GSP, including implementation of projects or management actions since the previous annual report.

The description and graphical representation of the change in groundwater storage will include a graph depicting water year type, based on the annual precipitation in the Plan Area compared to the mean annual rainfall (Section 2.2.1.4), groundwater production, the annual change in groundwater in storage, and the cumulative change in groundwater in storage for the Plan Area based on the simulated annual change in storage by the YIHM. The annual reports will conclude with an overview of the implementation of the GSP, including an evaluation of groundwater conditions against the sustainability criteria established in Chapter 3. The annual report will include a descriptive summary of any management actions that were implemented in the Plan Area.

5.5 Periodic Evaluations

Every fifth year of GSP implementation and whenever the GSP is amended, the Yucaipa GSA is required to prepare and submit an Agency Evaluation and Assessment Report to DWR together with the annual report for that year (23 CCR, Section 356.4). The tasks associated with preparing this report include evaluating any new information that has been made available since the GSP adoption and assessing whether changes to assumptions or descriptions in the GSP are required. The following components are required in the periodic evaluation reports:

- A description of current groundwater conditions for each applicable sustainability indicator relative to measurable objectives and minimum thresholds.
- A description of the implementation of any projects or management actions, and the effect on groundwater conditions resulting from those projects or management actions.

- A review and evaluation of the Plan Area setting, management areas, sustainability criteria and management actions described in the GSP, and proposed revisions to the GSP based on information obtained since the adoption of the Plan.
- A description and evaluation of the monitoring network within the Plan Area. The evaluation will determine if data gaps identified in the GSP have been addressed, and if new data gaps are identified. The periodic evaluation will include proposed actions by the Yucaipa GSA to address data gaps, which may include modifications to or expansion of the existing monitoring network.
- A description of significant new information that has been made available since the adoption of the GSP, an amendment to the GSP, or the last 5-year assessment.
- A description of relevant actions taken by the Yucaipa GSA, including a summary of regulations or ordinances related to management of the Plan Area or the GSP.
- Information describing any enforcement or legal actions taken by the Yucaipa GSA in furtherance of the sustainability goal for the Plan Area.
- A description of completed or proposed GSP amendments.
- A reevaluation of the estimated sustainable yield of the Subbasin and the management areas by updating the YIHM with data collected since the last periodic evaluation.

5.6 GSP Implementation Schedule

The Yucaipa GSA has developed a schedule that outlines the approximate times at which the various monitoring and reporting components of the GSP will be implemented over the next 5 years (Figure 5-1). The actual start dates may vary from those shown in the schedule.

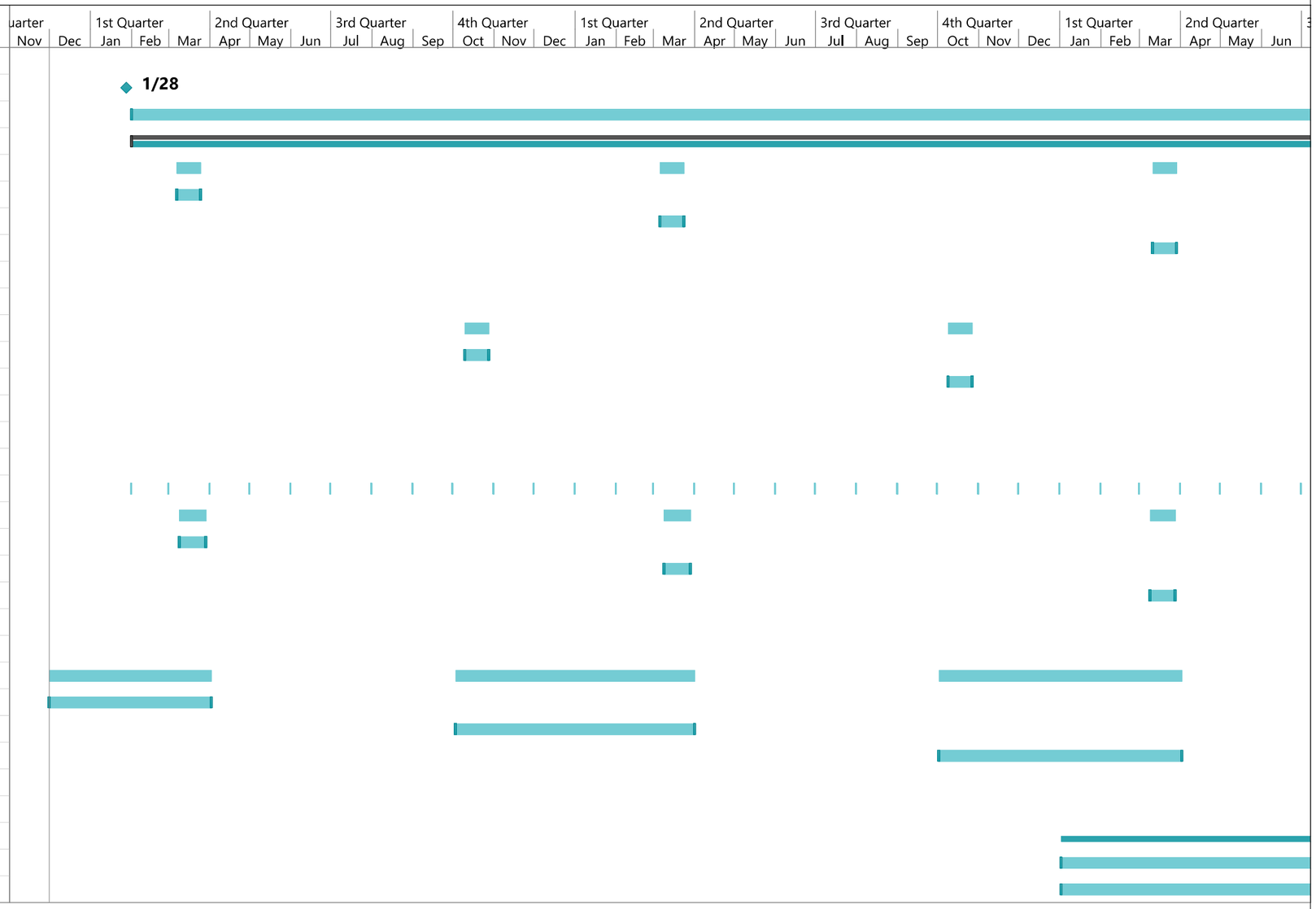
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Figure 5-1. 5-Year Plan Implementation Schedule

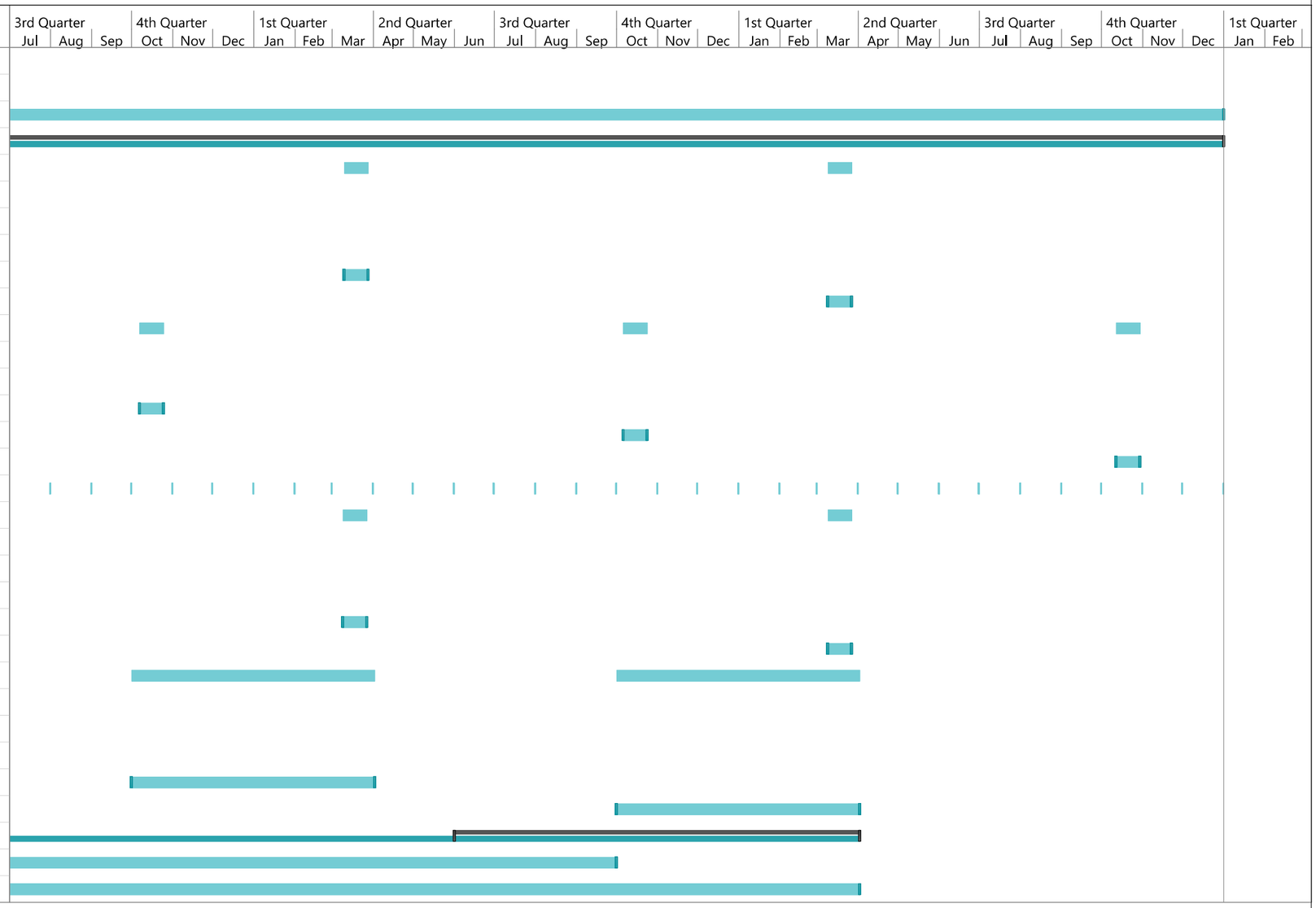
ID	Task Name	Start	Finish
1			
2	GSP Submitted to DWR	Fri 1/28/22	Fri 1/28/22
3	GSP Administration	Tue 2/1/22	Thu 12/31/26
4	**Monitoring Program**	**Tue 2/1/22**	**Thu 12/31/26**
5	**Spring Groundwater Elevations**	**Mon 3/7/22**	**Thu 3/26/26**
6	Spring Groundwater Elevations 2022	Mon 3/7/22	Thu 3/24/22
7	Spring Groundwater Elevations 2023	Mon 3/6/23	Thu 3/23/23
8	Spring Groundwater Elevations 2024	Mon 3/11/24	Thu 3/28/24
9	Spring Groundwater Elevations 2025	Mon 3/10/25	Thu 3/27/25
10	Spring Groundwater Elevations 2026	Mon 3/9/26	Thu 3/26/26
11	**Fall Groundwater Elevations**	**Mon 10/10/22**	**Thu 10/29/26**
12	Fall Groundwater Elevations 2022	Mon 10/10/22	Thu 10/27/22
13	Fall Groundwater Elevations 2023	Mon 10/9/23	Thu 10/26/23
14	Fall Groundwater Elevations 2024	Mon 10/7/24	Thu 10/24/24
15	Fall Groundwater Elevations 2025	Mon 10/6/25	Thu 10/23/25
16	Fall Groundwater Elevations 2026	Mon 10/12/26	Thu 10/29/26
17	**Groundwater Production**	**Mon 1/31/22**	**Thu 12/31/26**
78	**Groundwater Quality**	**Wed 3/9/22**	**Thu 3/26/26**
79	Groundwater Quality 2022	Wed 3/9/22	Mon 3/28/22
80	Groundwater Quality 2023	Thu 3/9/23	Tue 3/28/23
81	Groundwater Quality 2024	Sat 3/9/24	Wed 3/27/24
82	Groundwater Quality 2025	Sun 3/9/25	Wed 3/26/25
83	Groundwater Quality 2026	Mon 3/9/26	Thu 3/26/26
84	**GSP Annual Report**	**Wed 12/1/21**	**Wed 4/1/26**
85	GSP Annual Report 2022	Wed 12/1/21	Fri 4/1/22
86	GSP Annual Report 2023	Mon 10/3/22	Fri 3/31/23
87	GSP Annual Report 2024	Mon 10/2/23	Mon 4/1/24
88	GSP Annual Report 2025	Tue 10/1/24	Tue 4/1/25
89	GSP Annual Report 2026	Wed 10/1/25	Wed 4/1/26
90	**Periodic Evaluation Report 2026**	**Sun 6/1/25**	**Wed 4/1/26**
91	Refine, Update and Calibrate YIHM	Tue 1/2/24	Tue 9/30/25
92	Evaluation Report Preparation	Tue 1/2/24	Wed 4/1/26



Task	Project Summary	Manual Task	Start-only	Deadline
Split	Inactive Task	Duration-only	Finish-only	Progress
Milestone	Inactive Milestone	Manual Summary Rollup	External Tasks	Manual Progress
Summary	Inactive Summary	Manual Summary	External Milestone

Figure 5-1. 5-Year Plan Implementation Schedule

ID	Task Name	Start	Finish
1			
2	GSP Submitted to DWR	Fri 1/28/22	Fri 1/28/22
3	GSP Administration	Tue 2/1/22	Thu 12/31/26
4	**Monitoring Program**	**Tue 2/1/22**	**Thu 12/31/26**
5	**Spring Groundwater Elevations**	**Mon 3/7/22**	**Thu 3/26/26**
6	Spring Groundwater Elevations 2022	Mon 3/7/22	Thu 3/24/22
7	Spring Groundwater Elevations 2023	Mon 3/6/23	Thu 3/23/23
8	Spring Groundwater Elevations 2024	Mon 3/11/24	Thu 3/28/24
9	Spring Groundwater Elevations 2025	Mon 3/10/25	Thu 3/27/25
10	Spring Groundwater Elevations 2026	Mon 3/9/26	Thu 3/26/26
11	**Fall Groundwater Elevations**	**Mon 10/10/22**	**Thu 10/29/26**
12	Fall Groundwater Elevations 2022	Mon 10/10/22	Thu 10/27/22
13	Fall Groundwater Elevations 2023	Mon 10/9/23	Thu 10/26/23
14	Fall Groundwater Elevations 2024	Mon 10/7/24	Thu 10/24/24
15	Fall Groundwater Elevations 2025	Mon 10/6/25	Thu 10/23/25
16	Fall Groundwater Elevations 2026	Mon 10/12/26	Thu 10/29/26
17	**Groundwater Production**	**Mon 1/31/22**	**Thu 12/31/26**
78	**Groundwater Quality**	**Wed 3/9/22**	**Thu 3/26/26**
79	Groundwater Quality 2022	Wed 3/9/22	Mon 3/28/22
80	Groundwater Quality 2023	Thu 3/9/23	Tue 3/28/23
81	Groundwater Quality 2024	Sat 3/9/24	Wed 3/27/24
82	Groundwater Quality 2025	Sun 3/9/25	Wed 3/26/25
83	Groundwater Quality 2026	Mon 3/9/26	Thu 3/26/26
84	**GSP Annual Report**	**Wed 12/1/21**	**Wed 4/1/26**
85	GSP Annual Report 2022	Wed 12/1/21	Fri 4/1/22
86	GSP Annual Report 2023	Mon 10/3/22	Fri 3/31/23
87	GSP Annual Report 2024	Mon 10/2/23	Mon 4/1/24
88	GSP Annual Report 2025	Tue 10/1/24	Tue 4/1/25
89	GSP Annual Report 2026	Wed 10/1/25	Wed 4/1/26
90	**Periodic Evaluation Report 2026**	**Sun 6/1/25**	**Wed 4/1/26**
91	Refine, Update and Calibrate YIHM	Tue 1/2/24	Tue 9/30/25
92	Evaluation Report Preparation	Tue 1/2/24	Wed 4/1/26



Task	Project Summary	Manual Task	Start-only	Deadline
Split	Inactive Task	Duration-only	Finish-only	Progress
Milestone	Inactive Milestone	Manual Summary Rollup	External Tasks	Manual Progress
Summary	Inactive Summary	Manual Summary	External Milestone

Appendix 1-A

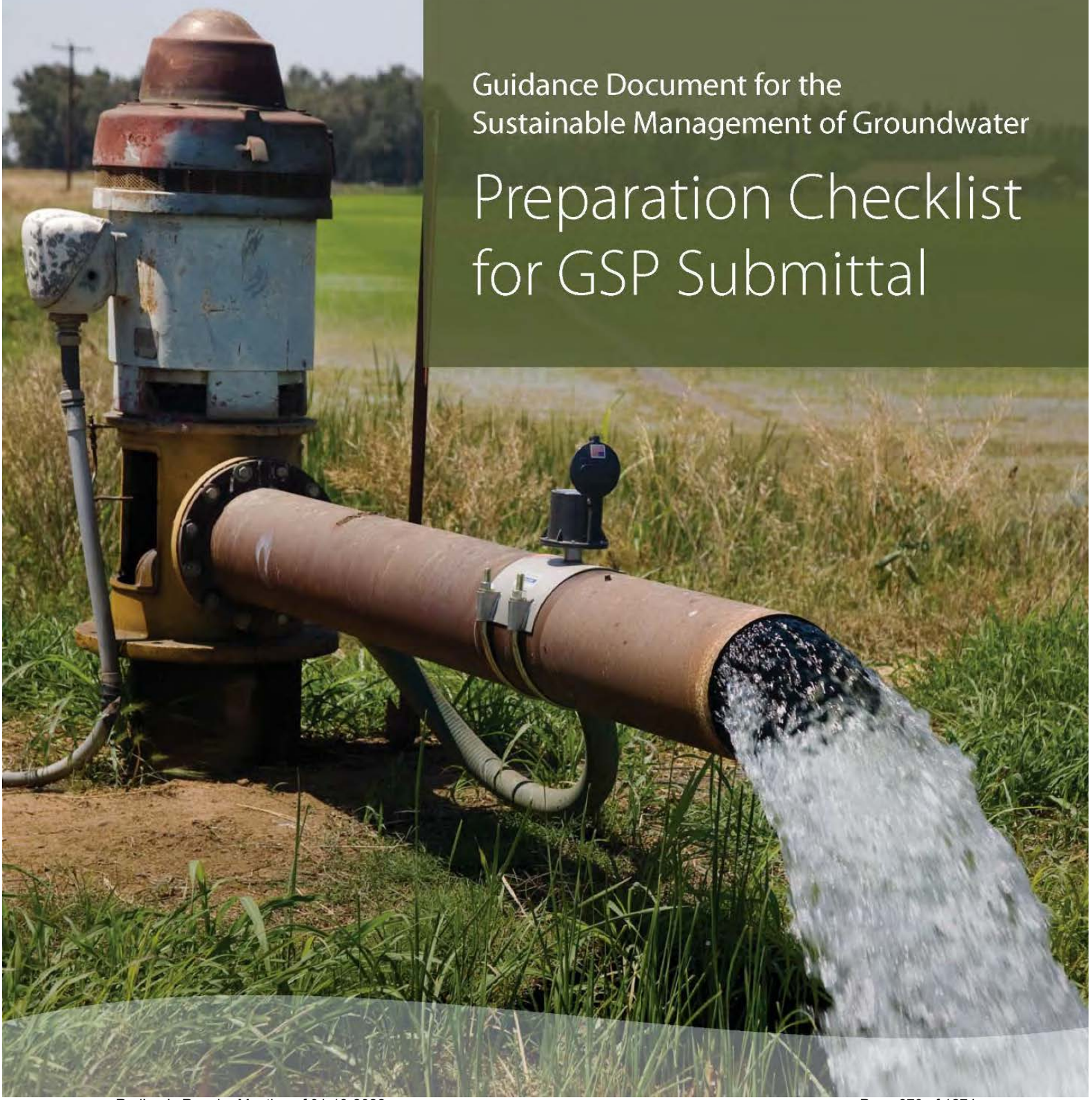
Preparation Checklist for GSP Submittal

California Department of Water Resources
Sustainable Groundwater Management Program

December 2016

Guidance Document for the
Sustainable Management of Groundwater

Preparation Checklist for GSP Submittal



Guidance Document for the Sustainable Management of Groundwater

Preparation Checklist for GSP Submittal

December 2016

The objective of this Guidance Document is to provide Groundwater Sustainability Agencies (GSAs) and other interested stakeholders a checklist of Groundwater Sustainability Plan (GSP) content requirements for the purpose of verifying a GSP is complete and is ready for submission to DWR. Please note that if multiple GSAs develop multiple GSPs for a basin, the coordinated submission of those GSPs shall not occur until the entire basin is covered by GSPs.

The Preparation Checklist for GSP Submittal is only intended to provide a guide to GSAs and other stakeholders. This guidance is optional, since the content of this Guidance Document does not create any new requirements or obligations for the GSA or other stakeholders.

Guidance documents are not a substitute for the GSP Emergency Regulations (GSP Regulations) or the Sustainable Groundwater Management Act (SGMA). Those GSAs submitting a GSP are strongly encouraged to read the GSP Regulations and SGMA. In addition, using this Guidance Document to develop a GSP using does not equate to an approval determination by DWR.

Context with GSP Regulations

The Preparation Checklist for GSP Submittal can be used by GSAs in conjunction with the GSP Annotated Outline Guidance Document as a method to develop a GSP consistent with the requirements of the GSP Regulations and SGMA. The detailed requirements of a GSP may be found in the GSP Regulations, primarily in Article 5 – Plan Contents, and in SGMA, primarily in Chapter 6 beginning with California Water Code (CWC) Section 10727. The checklist includes references to applicable GSP Regulations sections and CWC sections, as well as a brief description of the required GSP information. The checklist also contains a column for GSAs to record the page number, or section of the GSP, where the information for that particular requirement is found. The preparation checklist may also be included in the GSP.

Table 1 contains the **Preparation Checklist for GSP Submittal**.

California Department of Water Resources
Sustainable Groundwater Management Program
1416 Ninth Street
P.O. Box 942836
Sacramento, CA 94236-0001
www.water.ca.gov/groundwater

Table 1. Preparation Checklist for GSP Submittal

GSP Regulations Section	Water Code Section	Requirement	Description	Section(s) or Page Number(s) in the GSP
Article 3. Technical and Reporting Standards				
352.2		Monitoring Protocols	• Monitoring protocols adopted by the GSA for data collection and management • Monitoring protocols that are designed to detect changes in groundwater levels, groundwater quality, inelastic surface subsidence for basins for which subsidence has been identified as a potential problem, and flow and quality of surface water that directly affect groundwater levels or quality or are caused by groundwater extraction in the basin	Section 3.6.4
Article 5. Plan Contents, Subarticle 1. Administrative Information				
354.4		General Information	• Executive Summary • List of references and technical studies	Section ES
354.6		Agency Information	• GSA mailing address • Organization and management structure • Contact information of Plan Manager • Legal authority of GSA • Estimate of implementation costs	Section 1.2
354.8(a)	10727.2(a)(4)	Map(s)	• Area covered by GSP • Adjudicated areas, other agencies within the basin, and areas covered by an Alternative • Jurisdictional boundaries of federal or State land • Existing land use designations • Density of wells per square mile	Section 1.3

GSP Regulations Section	Water Code Section	Requirement	Description	Section(s) or Page Number(s) in the GSP
Article 5. Plan Contents, Subarticle 1. Administrative Information (Continued)				
354.8(b)		Description of the Plan Area	• Summary of jurisdictional areas and other features	Section 1.3
354.8(c) 354.8(d) 354.8(e)	10727.2(g)	Water Resource Monitoring and Management Programs	• Description of water resources monitoring and management programs • Description of how the monitoring networks of those plans will be incorporated into the GSP • Description of how those plans may limit operational flexibility in the basin • Description of conjunctive use programs	Section 1.5
354.8(f)	10727.2(g)	Land Use Elements or Topic Categories of Applicable General Plans	• Summary of general plans and other land use plans • Description of how implementation of the GSP may change water demands or affect achievement of sustainability and how the GSP addresses those effects • Description of how implementation of the GSP may affect the water supply assumptions of relevant land use plans • Summary of the process for permitting new or replacement wells in the basin • Information regarding the implementation of land use plans outside the basin that could affect the ability of the Agency to achieve sustainable groundwater management	Section 1.6

GSP Regulations Section	Water Code Section	Requirement	Description	Section(s) or Page Number(s) in the GSP
Article 5. Plan Contents, Subarticle 1. Administrative Information (Continued)				
354.8(g)	10727.4	Additional GSP Contents	**Description of Actions related to:** • Control of saline water intrusion • Wellhead protection • Migration of contaminated groundwater • Well abandonment and well destruction program • Replenishment of groundwater extractions • Conjunctive use and underground storage • Well construction policies • Addressing groundwater contamination cleanup, recharge, diversions to storage, conservation, water recycling, conveyance, and extraction projects • Efficient water management practices • Relationships with State and federal regulatory agencies • Review of land use plans and efforts to coordinate with land use planning agencies to assess activities that potentially create risks to groundwater quality or quantity • Impacts on groundwater dependent ecosystems	Sections 1.5, 1.6, 2.7, 2.7.8.1, and 4.2.2.
354.10		Notice and Communication	• Description of beneficial uses and users • List of public meetings • GSP comments and responses • Decision-making process • Public engagement • Encouraging active involvement • Informing the public on GSP implementation progress	Sections 1.7, 1.8 and 1.9

GSP Regulations Section	Water Code Section	Requirement	Description	Section(s) or Page Number(s) in the GSP
Article 5. Plan Contents, Subarticle 2. Basin Setting				
354.14		Hydrogeologic Conceptual Model	• Description of the Hydrogeologic Conceptual Model • Two scaled cross-sections • Map(s) of physical characteristics: topographic information, surficial geology, soil characteristics, surface water bodies, source and point of delivery for imported water supplies	Section 2.6
354.14(c)(4)	10727.2(a)(5)	Map of Recharge Areas	• Map delineating existing recharge areas that substantially contribute to the replenishment of the basin, potential recharge areas, and discharge areas	Section 2.3
	10727.2(d)(4)	Recharge Areas	• Description of how recharge areas identified in the plan substantially contribute to the replenishment of the basin	Section 2.5.4
354.16	10727.2(a)(1) 10727.2(a)(2)	Current and Historical Groundwater Conditions	• Groundwater elevation data • Estimate of groundwater storage • Seawater intrusion conditions • Groundwater quality issues • Land subsidence conditions • Identification of interconnected surface water systems • Identification of groundwater-dependent ecosystems	Section 2.7
354.18	10727.2(a)(3)	Water Budget Information	• Description of inflows, outflows, and change in storage • Quantification of overdraft • Estimate of sustainable yield • Quantification of current, historical, and projected water budgets	Section 2.8
	10727.2(d)(5)	Surface Water Supply	• Description of surface water supply used or available for use for groundwater recharge or in-lieu use	Section 2.8.2.5

GSP Regulations Section	Water Code Section	Requirement	Description	Section(s) or Page Number(s) in the GSP
Article 5. Plan Contents, Subarticle 2. Basin Setting (Continued)				
354.20		Management Areas	• Reason for creation of each management area • Minimum thresholds and measurable objectives for each management area • Level of monitoring and analysis • Explanation of how management of management areas will not cause undesirable results outside the management area • Description of management areas	Sections 2.9, 3.4, and 3.5.
Article 5. Plan Contents, Subarticle 3. Sustainable Management Criteria				
354.24		Sustainability Goal	• Description of the sustainability goal	Section 3.2
354.26		Undesirable Results	• Description of undesirable results • Cause of groundwater conditions that would lead to undesirable results • Criteria used to define undesirable results for each sustainability indicator • Potential effects of undesirable results on beneficial uses and users of groundwater	Section 3.3
354.28	10727.2(d)(1) 10727.2(d)(2)	Minimum Thresholds	• Description of each minimum threshold and how they were established for each sustainability indicator • Relationship for each sustainability indicator • Description of how selection of the minimum threshold may affect beneficial uses and users of groundwater • Standards related to sustainability indicators • How each minimum threshold will be quantitatively measured	Section 3.4

GSP Regulations Section	Water Code Section	Requirement	Description	Section(s) or Page Number(s) in the GSP
Article 5. Plan Contents, Subarticle 3. Sustainable Management Criteria (Continued)				
354.30	10727.2(b)(1) 10727.2(b)(2) 10727.2(d)(1) 10727.2(d)(2)	Measureable Objectives	• Description of establishment of the measureable objectives for each sustainability indicator • Description of how a reasonable margin of safety was established for each measureable objective • Description of a reasonable path to achieve and maintain the sustainability goal, including a description of interim milestones	Sections 3.5 and 4.2
Article 5. Plan Contents, Subarticle 4. Monitoring Networks				
354.34	10727.2(d)(1) 10727.2(d)(2) 10727.2(e) 10727.2(f)	Monitoring Networks	• Description of monitoring network • Description of monitoring network objectives • Description of how the monitoring network is designed to: demonstrate groundwater occurrence, flow directions, and hydraulic gradients between principal aquifers and surface water features; estimate the change in annual groundwater in storage; monitor seawater intrusion; determine groundwater quality trends; identify the rate and extent of land subsidence; and calculate depletions of surface water caused by groundwater extractions • Description of how the monitoring network provides adequate coverage of Sustainability Indicators • Density of monitoring sites and frequency of measurements required to demonstrate short-term, seasonal, and long-term trends • Scientific rational (or reason) for site selection • Consistency with data and reporting standards • Corresponding sustainability indicator, minimum threshold, measureable objective, and interim milestone	Section 3.6

GSP Regulations Section	Water Code Section	Requirement	Description	Section(s) or Page Number(s) in the GSP
			(Monitoring Networks Continued) • Location and type of each monitoring site within the basin displayed on a map, and reported in tabular format, including information regarding the monitoring site type, frequency of measurement, and the purposes for which the monitoring site is being used • Description of technical standards, data collection methods, and other procedures or protocols to ensure comparable data and methodologies	
354.36		Representative Monitoring	• Description of representative sites • Demonstration of adequacy of using groundwater elevations as proxy for other sustainability indicators • Adequate evidence demonstrating site reflects general conditions in the area	Section 3.6.5.
354.38		Assessment and Improvement of Monitoring Network	• Review and evaluation of the monitoring network • Identification and description of data gaps • Description of steps to fill data gaps • Description of monitoring frequency and density of sites	Section 3.6.6.

GSP Regulations Section	Water Code Section	Requirement	Description	Section(s) or Page Number(s) in the GSP
Article 5. Plan Contents, Subarticle 5. Projects and Management Actions				
354.44		Projects and Management Actions	• Description of projects and management actions that will help achieve the basin's sustainability goal • Measureable objective that is expected to benefit from each project and management action • Circumstances for implementation • Public noticing • Permitting and regulatory process • Time-table for initiation and completion, and the accrual of expected benefits • Expected benefits and how they will be evaluated • How the project or management action will be accomplished. If the projects or management actions rely on water from outside the jurisdiction of the Agency, an explanation of the source and reliability of that water shall be included. • Legal authority required • Estimated costs and plans to meet those costs • Management of groundwater extractions and recharge	Sections 4.2 and 4.3.
354.44(b)(2)	10727.2(d)(3)		• Overdraft mitigation projects and management actions	Section 4.2.2.

GSP Regulations Section	Water Code Section	Requirement	Description	Section(s) or Page Number(s) in the GSP
Article 8. Interagency Agreements				
357.4	10727.6	Coordination Agreements - Shall be submitted to the Department together with the GSPs for the basin and, if approved, shall become part of the GSP for each participating Agency.	**Coordination Agreements shall describe the following:** • A point of contact • Responsibilities of each Agency • Procedures for the timely exchange of information between Agencies • Procedures for resolving conflicts between Agencies • How the Agencies have used the same data and methodologies to coordinate GSPs • How the GSPs implemented together satisfy the requirements of SGMA • Process for submitting all Plans, Plan amendments, supporting information, all monitoring data and other pertinent information, along with annual reports and periodic evaluations • A coordinated data management system for the basin • Coordination agreements shall identify adjudicated areas within the basin, and any local agencies that have adopted an Alternative that has been accepted by the Department	NA

Appendix 1-B

Yucaipa GSA Governance Documents

MEMORANDUM OF AGREEMENT TO FORM A GROUNDWATER SUSTAINABILITY AGENCY FOR THE YUCAIPA SUB-BASIN (Sub-basin No. 8-02.07)

This 2017 Memorandum of Agreement ("MOA") is entered into by and among: South Mesa Water Company ("SOUTH MESA"), South Mountain Water Company ("SOUTH MOUNTAIN"), Western Heights Water Company ("WESTERN HEIGHTS") and Yucaipa Valley Water District ("YVWD"), herein collectively referred to as the "WATER PURVEYORS"; and, the City of Calimesa ("CALIMESA"), the City of Redlands ("REDLANDS") and the City of Yucaipa ("YUCAIPA"), herein collectively referred to as the "MUNICIPALITIES"; and, the San Bernardino Valley Municipal Water District ("SAN BERNARDINO VALLEY MUNICIPAL") and the San Gorgonio Pass Water Agency ("SAN GORGONIO"), herein collectively referred to as the "REGIONALS." The MUNICIPALITIES are sometimes herein collectively referred to as the "LAND USE AGENCIES." Each of the above-described entities is individually referred to as a "Party" and are collectively referred to as the "Parties". For purposes of this MOA, SOUTH MESA, SOUTH MOUNTAIN and WESTERN HEIGHTS are collectively referred to as the "MUTUALS"; and, the Parties other than the MUTUALS are collectively referred to as the "LOCAL AGENCIES."

Pursuant to the Sustainable Groundwater Management Act ("SGMA") and as further set forth herein, the purpose of this MOA is to form a Groundwater Sustainability Agency ("GSA") for the entire Yucaipa Sub-basin (Basin or Sub-Basin No. 8-02.07), in order to preserve local management and control of the Basin as set forth under SGMA.

The County of Riverside ("RIVERSIDE") and the County of San Bernardino ("SAN BERNARDINO"), collectively "COUNTIES," shall be considered "Stakeholders" but not Parties to this MOA.

Recitals

WHEREAS, on September 16, 2014, Governor Jerry Brown signed into law Senate Bills 1168 and 1319, and Assembly Bill 1739, collectively known as the Sustainable Groundwater Management Act ("SGMA"), codified in certain provisions of the California Government Code, including commencing with Section 65350.5, and codified in Part 2.74 of Division 6 of the California *Water Code*, commencing with Section 10720, and amending other provisions of the California *Government Code* and California *Water Code*; and

WHEREAS, SGMA went into effect on January 1, 2015; and,

WHEREAS, various clarifying amendments to SGMA were signed into law in 2015, including Senate Bills 13 and 226, and Assembly Bills 617 and 939, which were codified in part in California *Water Code* Section 10723.6(a), authorizing a combination of local agencies to form a GSA pursuant to a joint powers agreement, a memorandum of agreement, or other legal agreement; and, California *Water Code* Section 10723.6(b), authorizing water corporations regulated by the California Public Utilities Commission and mutual water companies to participate in a GSA through a memorandum of agreement or other legal agreement; and

WHEREAS, the legislative intent and effect of SGMA, as set forth in California *Water Code* Section 10720.1, includes the following: (1) to provide for the sustainable management of groundwater basins; (2) to enhance local management of groundwater consistent with rights to use or store groundwater and Section 2 of Article X of the California Constitution, and to preserve the security of water rights in the state to the greatest extent possible consistent with the sustainable management of groundwater; (3) to establish minimum standards for sustainable groundwater management; (4) to provide local groundwater agencies with the authority and the technical and financial assistance necessary to sustainably manage groundwater; (5) to avoid or minimize subsidence; (6) to improve data collection and understanding about groundwater; (7) to increase groundwater storage and remove impediments to recharge; (8) to manage groundwater basins through the actions of local governmental agencies to the greatest extent feasible, while minimizing state intervention to only when necessary to ensure that local agencies manage groundwater in a sustainable manner; and (9) to provide a more efficient and cost-effective groundwater adjudication process that protects water rights, ensures due process, prevents unnecessary delay, and furthers the objectives of SGMA; and,

WHEREAS, SGMA affords GSAs specific powers to manage groundwater in addition to existing legal authorities, which powers may be used to provide the maximum degree of local control and flexibility consistent with the sustainability goals of SGMA; and,

WHEREAS, SGMA includes several un-codified findings by the California Legislature, including the determination that the people of the state have a primary interest in the protection, management, and reasonable beneficial use of the water resources of the state, both surface and underground, and that the integrated management of the state's water resources is essential to meeting its water management goals; and,

WHEREAS, the Basin, as depicted in **Exhibit A** to this MOA, is identified by the California Department of Water Resources Bulletin 118 as Sub-basin No. 8-02.07 of the Upper Santa Ana Valley Groundwater Basin, and is designated by DWR as medium-priority; and,

WHEREAS, California *Water Code* Section 10720.7 requires the Basin, as a medium-priority basin that is not designated by DWR as being subject to critical conditions of overdraft, to be managed by a Groundwater Sustainability Plan ("GSP") or coordinated GSPs by January 31, 2022; and,

WHEREAS, in order to avoid designation as a probationary basin and become subject to direct intervention and management by the State Water Board, California *Water Code* Section 10735.2 requires that, by June 30, 2017 a collection of local agencies must form a GSA or prepare agreements to develop one or more GSPs that will collectively serve as a GSP for the entire Basin, in the event that a local agency has not decided to become a GSA that intends to develop a GSP for the entire Basin; and,

WHEREAS, the LOCAL AGENCIES have water supply, water management, and/or land use responsibilities for their respective jurisdictional areas overlying the Basin and are local agencies as defined by SGMA in California *Water Code* Section 10721(n), and thus each is authorized by SGMA to become or form a GSA; and,

WHEREAS, the LOCAL AGENCIES' individually have jurisdictional and/or service areas within and their collective jurisdictional areas and/or service areas cover the entirety of the Basin, with no gaps in coverage; and,

WHEREAS, the WATER PURVEYORS, including the MUTUALS, produce groundwater and provide water service within the Basin, and it is the Parties' shared intent to provide for management-level participation by the MUTUALS in the GSA to the maximum extent allowed by law without limiting any powers afforded to a GSA under SGMA; and,

WHEREAS, the REGIONALS are State Water Contractors, and have the rights and duties of such, including for the delivery of State Water Project Water within the Basin; and,

WHEREAS, in accordance with the terms of this MOA, and in furtherance of the shared intent of the Parties to maximize funding opportunities for the Basin and avoid potential intervention in the Basin by the State Water Board, the Parties agree that the YUCAIPA-GSA formed by this MOA will cover the entire Basin; and,

WHEREAS, the Parties mutually desire and intend to work with local stakeholders and interested parties in the Basin that are not Parties to this MOA, to carry out the policy, purposes, and requirements of SGMA in the Basin.

Agreement

NOW, THEREFORE, in consideration of the promises, terms, conditions, and covenants contained herein, it is mutually understood and agreed as follows:

I. **Incorporation of Recitals.** The Recitals stated above are incorporated herein by reference.

II. **Purposes.** The purposes of this MOA is to form the YUCAIPA-GSA for the Basin as specified herein pursuant to applicable provisions and requirements of SGMA, including but not limited to California *Water Code* Sections 10723 and 10723.6.

III. **Approval of MOA and Formation of the YUCAIPA-GSA.** Approval of this MOA and formation of the YUCAIPA-GSA shall be accomplished by the LOCAL AGENCIES each holding its own noticed public hearing pursuant to California *Water Code* Section 10723(b) and California *Government Code* Section 6066 and at such hearing will consider approval of a Resolution by its governing board to enter this MOA and jointly form the YUCAIPA-GSA as specified in this MOA. Approval of this MOA by the MUTUALS shall be accomplished through their respective governing boards' duly authorized procedures.

IV. **Definitions.** The following terms, whether used in the singular or plural, and when used with initial capitalization, shall have the meanings specified herein. The Parties agree that any definitions set forth herein are intended to be consistent with SGMA, and in the event of any discrepancy between a defined term in this MOA and a defined term in SGMA, the terms of SGMA shall control.

A. "Basin" refers to the Yucaipa Sub-basin, designated by the California Department of Water Resources Bulletin 118 as Sub-basin No. 8-02.07, as depicted in **Exhibit A** to this MOA.

B. "DWR" means the California Department of Water Resources.

C. "GSA" means a Groundwater Sustainability Agency, as defined by SGMA.

D. "GSP" means a Groundwater Sustainability Plan, as defined by SGMA.

E. "Memorandum of Agreement" or "MOA" refers to this Memorandum of Agreement.

F. "SGMA" refers to the Sustainable Groundwater Management Act, of 2014, as amended.

G. "State Water Board" means the California State Water Resources Control Board.

H. "YUCAIPA-GSA" refers to the Yucaipa Sub-basin GSA formed under this MOA.

V. Coordination and Cooperation

A. Continued Cooperation. The Parties to this MOA will continue to meet, confer, coordinate, and collaborate to discuss and develop technical, managerial, financial, and other criteria and procedures for the preparation, governance, and implementation of a GSP or coordinated GSPs in the Basin and to carry out the policy, purposes, and requirements of SGMA in the Basin.

B. Points of Contact. Each Party shall designate a principal contact person for that Party, who may be changed from time to time at the sole discretion of the designating Party. The principal contact person for each Party shall be responsible for coordinating with the principal contact persons for the other Parties in scheduling meetings and other activities under this MOA.

C. Voting Methodology. The voting structure for matters pertaining to the establishment and implementation of the administrative components of the YUCAIPA-GSA shall be by simple majority (51%) of the voting Parties, wherein each WATER PURVEYOR, MUNICIPALITY and REGIONAL holds a single vote.

VI. Roles and Responsibilities

A. The YUCAIPA-GSA shall be controlled by a Governing Board comprised of one representative of each of the Parties to this MOA.

B. The Parties agree to jointly establish their specific roles and responsibilities for implementing this MOA, including through the adoption of organizational documents, management policies, rules and procedures.

C. The Parties agree to jointly develop and implement a GSP or coordinated GSPs for the Basin in accordance with SGMA.

D. The Parties agree to work in good faith and coordinate all activities to carry out the purposes of this MOA in implementing the policy, purposes, and requirements of SGMA in the Basin, including continuing to meet, confer, coordinate, and collaborate to discuss and develop governance, management, technical, financial, and other matters, including respective roles and responsibilities for activities such as, but not limited to, the following: modeling;

metering; monitoring; hiring consultants; developing and maintaining list of interested persons under California *Water Code* Section 10723.4; budgeting; and other initial tasks as determined by the Parties.

E. The LOCAL AGENCIES shall coordinate with each other to cause all applicable noticing and submission of required information to DWR regarding formation of the YUCAIPA-GSA.

VII. Funding and Budgeting. The Parties shall work together to identify the costs, funding needs and funding sources for the administration of the YUCAIPA-GSA and the development and implementation of the GSP. To the extent not otherwise funded in accordance with or inconsistent with SGMA's provisions regarding GSA funding, the PURVEYORS shall collectively bear seventy-five percent (75%) and the MUNICIPALITIES and REGIONALS shall collectively bear twenty-five percent (25%) of the cost of the creation and administration of the YUCAIPA-GSA; and within each group, the Parties shall equally share in the costs of the creation and administration of the YUCAIPA-GSA. Nothing in this provision shall obligate any party to bear any portion of the attorneys' fees and legal costs of another Party.

VIII. Stakeholders. The initially designated stakeholders are the COUNTIES. The Parties agree to work together in ensuring public outreach and involvement of the public and other interested stakeholders throughout the SGMA process, including but not limited to all beneficial uses and users of groundwater as provided in SGMA Section 10723.2. Stakeholders have no voting rights under Section V.C. and no cost sharing obligations under Section VII of this MOA.

IX. Term, Termination, and Withdrawal.

A. Term. This MOA shall continue and remain in effect unless and until terminated by the unanimous written consent of the Parties, or as otherwise provided in this MOA or as authorized by law.

B. Withdrawal. After the YUCAIPA-GSA is officially established as the GSA for the Basin, any Party may decide, in its sole discretion, to withdraw from this MOA by providing ninety (90) days written notice to the other Parties. A Party that withdraws from this MOA shall remain obligated to pay its share of costs and expenses incurred or accrued under this MOA and any related cost-sharing agreement or arrangement up to the date the Party provides its notice of withdrawal as provided herein. Withdrawal by a Party shall not cause or require the termination of this MOA or the existence of the YUCAIPA-GSA with respect to the non-withdrawing Parties. In the event of withdrawal by one of the LOCAL AGENCIES, the Parties shall meet and confer during the 90-day notice period regarding: (i) whether the withdrawing Party wishes to seek GSA status for a portion of the Basin underlying the jurisdictional area or service area of the withdrawing Party; (ii) whether, as a result of the withdrawal, a co-GSA management or other arrangement with the withdrawing Party is necessary to satisfy the requirements of SGMA; and (iii) any other issues and steps that are necessary to avoid triggering probationary status of the Basin and State Water Board intervention. Any resolution of issues pertaining to withdrawal and any

other GSA issues shall be undertaken in a manner that satisfies all requirements of SGMA and DWR, including any requirement to file new GSA notices.

X. Notice Provisions

All notices required by this MOA shall be made in writing and delivered to the respective representatives of the Parties at their respective addresses as follows:

PARTIES:

PURVEYORS:

South Mesa Water Company
391 West Avenue L
Calimesa, California 92320
Attn: Dave Armstrong, General Manager
Email: smwc@verizon.net

South Mountain Water Company
35 Cajon Street
Redlands, California 92373
Attn: Cecilia Griego, Water Resources Specialist
Email: cgriego@cityofredlands.org

Western Heights Water Company
32352 Avenue D
Yucaipa, California 92399
Attn: William Brown, General Manager
Email: w.brown@westernheightswater.org

Yucaipa Valley Water District
12770 Second Street
Yucaipa, California 92399
Attn: Joseph, Zoba, General Manager
Email: jzoba@yvwd.dst.ca.us

MUNICIPALS:

City of Calimesa
908 Park Avenue
Calimesa, California 92399
Attn: Bonnie Johnson, City Manager
Email: bjohnson@cityofcalimesa.net

City of Redlands
35 Cajon Street
Redlands, California 92373
Attn: Chris Diggs, Municipal Utilities and Engineering Director
Email: cdiggs@cityofredlands.org

City of Yucaipa
34272 Yucaipa Boulevard
Yucaipa, California 92399
Attn: Ray Casey, City Manager
Email: rcasey@yucaipa.org

REGIONALS:

San Bernardino Valley Municipal Water District
380 E. Vanderbilt Way
San Bernardino, CA 92408
Attn: Douglas Headrick, General Manager & Chief Engineer
Email: douglash@sbvmwd.com

San Gorgonio Pass Water Agency
1210 Beaumont Avenue
Beaumont, CA 92223
Attn: Jeff Davis, General Manager and Chief Engineer
Email: jdavis@sgpwa.com

STAKEHOLDERS:

COUNTIES:

County of Riverside
4080 Lemon Street
Riverside, CA 92501
Attn: Steve Horn, Senior Management Analyst, Executive Office
Email: shorn@rceo.org

County of San Bernardino
385 N. Arrowhead Avenue
San Bernardino, CA 92415-0120
Attn: Bob Page, Principal Management Analyst, Special Projects
Email: bpage@sbcounty.gov

Any Party or Stakeholder may change the address to which notices are to be given under this MOA by providing all other Parties with written notice of such change at least fifteen (15) calendar days prior to the effective date of the change. All notices shall be effective upon receipt and shall be deemed received upon confirmed personal service, confirmed facsimile delivery, confirmed courier service, or on the fifth (5th) calendar day following deposit of the notice in registered first class mail.

XI. General Terms

A. Amendments. Amendments to this MOA require the unanimous written consent of all Parties and approval by the Parties' respective governing boards.

B. Successors and Assigns. The terms of this MOA shall be binding upon and inure to the benefit of the successors-in-interest and assigns of each Party; provided, however, that no transfer or assignment shall be effective until approved by the

Parties in accordance with the provisions of Section V.C. of this MOA. Once succession and/or assignment has been approved, a former Party shall have no further rights or obligations under this MOA.

C. Waiver. No waiver of any provision of this MOA by any Party shall be construed as a further or continuing waiver of such provision or any other provision of this MOA by the waiving Party or any other Party.

D. Authorized Representatives. Each person executing this MOA on behalf of a Party hereto affirmatively represents that such person has the requisite authority to sign this MOA on behalf of the respective Party.

E. Exemption from CEQA. The Parties recognize and agree that, pursuant to SGMA Section 10728.6, neither this MOA nor the preparation or adoption of a GSP constitute a "project" or approval of a project under the California Environmental Quality Act (CEQA) or the State CEQA Guidelines, and therefore this MOA is expressly exempt from CEQA review.

F. Governing Law and Venue. This MOA shall be governed by and construed in accordance with the laws of the State of California. Any suit, action, or proceeding brought under the scope of this MOA shall be brought and maintained to the extent allowed by law in the County of San Bernardino, California.

G. Attorney's Fees, Costs, and Expenses. In the event of a dispute among any or all of the Parties arising under this MOA, each Party shall assume and be responsible for its own attorney's fees, costs, and expenses.

H. Entire Agreement/Integration. This MOA constitutes the entire agreement among the Parties regarding the specific provisions of this MOA, and the Parties hereto have made no agreements, representations or warranties relating to the specific provisions of this MOA that are not set forth herein.

I. Construction and Interpretation. The Parties agree and acknowledge that this MOA has been developed through a negotiated process among the Parties, and that each Party has had a full and fair opportunity to review the terms of this MOA with the advice of its own legal counsel and to revise the terms of this MOA, such that each Party constitutes a drafting Party to this MOA. Consequently, the Parties understand and agree that no rule of construction shall be applied to resolve any ambiguities against any particular Party as the drafting Party in construing or interpreting this MOA.

J. Force Majeure. No Party shall be liable for the consequences of any unforeseeable force majeure event that (1) is beyond its reasonable control, (2) is not caused by the fault or negligence of such Party, (3) causes such Party to be unable to perform its obligations under this MOA, and (4) cannot be overcome by the exercise of due diligence. In the event of the occurrence of a force majeure event, the Party unable to perform shall promptly notify the other Parties in writing to the extent practicable. It shall further pursue its best efforts to resume its obligations under this MOA as quickly as possible and shall suspend performance only for such period of time as is necessary as a result of the force majeure event.

K. Execution in Counterparts. This MOA may be executed in counterparts, each of which shall be deemed an original and all of which when taken together shall constitute one and the same instrument.

L. No Third Party Beneficiaries. This MOA is not intended, and will not be construed, to confer a benefit or create any right on a third party or the power or right of any third party to bring an action to enforce any of the terms of this MOA.

M. Timing and Captions. Any provision of this MOA referencing a time, number of days, or period for performance shall be measured in calendar days. The captions of the various articles, sections, and paragraphs of this MOA are for convenience and ease of reference only, and do not define, limit, augment, or describe the scope, content, terms, or intent of this MOA.

IN WITNESS WHEREOF, the Parties hereto have approved and executed this MOA as of the respective dates specified in the adopting Resolution of each Party as provided above in Article III of this MOA.

[Signature Pages Follow]

COUNTY OF RIVERSIDE
EXECUTIVE OFFICE

GEORGE A. JOHNSON
COUNTY EXECUTIVE OFFICER

ROB FIELD
ASSISTANT COUNTY EXECUTIVE OFFICER
ECONOMIC DEVELOPMENT AGENCY

MICHAEL T. STOCK
ASSISTANT COUNTY EXECUTIVE OFFICER
HUMAN RESOURCES

ZAREH SARRAFIAN
ASSISTANT COUNTY EXECUTIVE OFFICER
HEALTH SYSTEMS

PAUL McDONNELL
ASSISTANT COUNTY EXECUTIVE OFFICER
COUNTY FINANCE DIRECTOR

June 22, 2017

Mr. Douglas Headrick
General Manager and Chief Engineer
San Bernardino Valley Municipal Water
District 380 E. Vanderbilt Way
San Bernardino, CA 92408

re: Support for Yucaipa Sub-Basin GSA

Mr. Headrick:

The County of Riverside appreciates the commitment of the cities of Calimesa, Redlands and Yucaipa; San Bernardino Valley Municipal Water District; San Gorgonio Pass Water Agency; Yucaipa Valley Water District; South Mesa Water Company; South Mountain Water Company; and Western Heights Water Company to maintain local control of the Yucaipa Sub-Basin and to work together through a Memorandum of Agreement to sustainably manage the basin's groundwater resources in a way that considers the interests of all beneficial uses and users.

As the County is also eligible to serve as the Groundwater Sustainability Agency for the Yucaipa Sub-Basin, the County wishes to assure you that it does not intend to adopt a competing Groundwater Sustainability Agency formation resolution and notification of the California Department of Water Resources.

If you should have any questions, please contact me at 951-955-1110 or by email at agann@rivco.org.

Sincerely,

Alex Gann
Deputy County Executive Officer

ec: Steve Van Stockum, Director, Riverside County Department of Environmental Health
Jeff Johnson, Deputy Director, Riverside County Department of Environmental Health
Jason Uhley, General Manager-Chief Engineer, Riverside County Flood Control
And Water Conservation District

ROBERT T. ANDERSEN COUNTY ADMINISTRATIVE CENTER
4080 LEMON STREET • FOURTH FLOOR • RIVERSIDE, CALIFORNIA 92501 • (951) 955-1110 • FAX (951) 955-1034

385 N. Arrowhead Avenue, 5th Floor, San Bernardino, CA 92415 | Phone: 909.387.4830 Fax: 909.387.3029
www.SBCounty.gov

SAN BERNARDINO COUNTY

Board of Supervisors

May 23, 2017

Mr. Douglas Headrick
General Manager and Chief Engineer
San Bernardino Valley Municipal Water District
380 E. Vanderbilt Way
San Bernardino, CA 92408

Re: Support for Yucaipa Sub-Basin Groundwater Sustainability Agency

Mr. Headrick:

On May 23, 2017, the County of San Bernardino Board of Supervisors voted to communicate the County's support of the cooperative efforts of the Yucaipa Sub-Basin Groundwater Sustainability Agency to manage groundwater in the Yucaipa Sub-Basin (No. 8-2.07) in compliance with the California Sustainable Groundwater Management Act.

The County appreciates the commitment of the cities of Calimesa, Redlands and Yucaipa; San Bernardino Valley Municipal Water District; San Gorgonio Pass Water Agency; Yucaipa Valley Water District; South Mesa Water Company; South Mountain Water Company; and Western Heights Water Company to maintain local control of the Yucaipa Sub-Basin and to work together through a Memorandum of Agreement to sustainably manage the basin's groundwater resources in a way that considers the interests of all beneficial uses and users.

As the County is also eligible to serve as the Groundwater Sustainability Agency for the Yucaipa Sub-Basin, the County wishes to assure you that the County does not intend to adopt a competing Groundwater Sustainability Agency formation resolution and notification of the California Department of Water Resources. To that end, on March 7, 2017, the Board of Supervisors adopted a resolution that the County would not be the Groundwater Sustainability Agency for 11 groundwater basins and sub-basins in the county, including Yucaipa Sub-Basin. A copy of this resolution is attached.

If you should have any questions, please contact Bob Page, Principal Management Analyst, at (909) 387-4384 or by email at bpage@cao.sbcounty.gov. Thank you.

Sincerely,

Robert A. Lovingood
Chairman and First District Supervisor
Board of Supervisors
County of San Bernardino

BOARD OF SUPERVISORS
Robert A. Lovingood, Chairman, First District | Janice Rutherford, Second District | James Ramos, Third District | Curt Hagman, Vice Chairman, Fourth District | Josie Gonzales, Fifth District
Dena M. Smith, Interim Chief Executive Officer

REPORT/RECOMMENDATION TO THE BOARD OF SUPERVISORS OF SAN BERNARDINO COUNTY, CALIFORNIA AND RECORD OF ACTION

May 23, 2017

FROM: **DENA M. SMITH, Interim Chief Executive Officer**
County Administrative Office

SUBJECT: **SUPPORT FOR BEAR VALLEY BASIN AND YUCAIPA BASIN GROUNDWATER SUSTAINABILITY AGENCIES**

RECOMMENDATION(S)

1. Approve and authorize submission of letters of support for the cooperative efforts of cities, water districts and water companies to manage groundwater in compliance with the California Sustainable Groundwater Management Act in the following groundwater basins:
   a. Bear Valley Basin (No. 8-9)
   b. Yucaipa Sub-Basin (No. 8-2.07)
2. Authorize the Chairman of the Board of Supervisors or the Chief Executive Officer to execute similar letters of support, subject to review by County Counsel, for local agency efforts to manage other groundwater basins in San Bernardino County that must comply with the California Sustainable Groundwater Management Act for which the County has previously notified the California Department of Water Resources that the County will not serve as the Groundwater Sustainability Agency.

(Presenter: Bob Page, Principal Management Analyst, 387-5425)

COUNTY AND CHIEF EXECUTIVE OFFICER GOALS AND OBJECTIVES

Ensure Development of a Well-Planned, Balanced, and Sustainable County.
Pursue County Goals and Objectives by Working with Other Agencies.

FINANCIAL IMPACT

Providing letters of support to local agencies forming Groundwater Sustainability Agencies (GSAs) will not result in the use of additional Discretionary General Funding (Net County Cost).

BACKGROUND INFORMATION

Effective January 1, 2015, the California Sustainable Groundwater Management Act (SGMA) requires local water and land use agencies to sustainably manage 127 groundwater basins and sub-basins (basins) that have been designated by the California Department of Water Resources (DWR) as medium or high priority. SGMA mandates that one eligible local agency or multiple eligible local agencies form a GSA for each of these basins by June 30, 2017 with the responsibility of developing and implementing a Groundwater Sustainability Plan (GSP).

cc: CAO-Smith
CAO-Page w/Letters of Support
CAO-Shea
File - Administrative Office w/copy of Letters
jr 5/24/17

ITEM 55

Record of Action of the Board of Supervisors

APPROVED (CONSENT CALENDAR)
COUNTY OF SAN BERNARDINO
Board of Supervisors

MOTION	AYE	AYE	SECOND	MOVE	AYE
	1	2	3	4	5

LAURA H. WELCH, CLERK OF THE BOARD

BY _____

DATED: May 23, 2017

Rev 7-12-16

DWR has designated Bear Valley Basin as medium priority. DWR has also defined the boundaries of the Bear Valley Basin in its Bulletin 118 and assigned it No. 8-9. The City of Big Bear Lake, the Big Bear City Community Services District and the Big Bear Municipal Water District have formed the Bear Valley Basin Groundwater Sustainability Agency (Bear Valley Basin GSA), a joint powers authority that became effective on April 26, 2017, with the purpose to become the exclusive GSA for the Bear Valley Basin.

DWR has designated Yucaipa Sub-Basin as medium priority. DWR has also defined the boundaries of the Yucaipa Sub-Basin in its Bulletin 118 and assigned it No. 8-2.07. Negotiations of a Memorandum of Agreement (MOA) regarding the formation of a GSA for the Yucaipa Sub-Basin completed in April. The MOA was circulated for approval by June from the governing bodies of the following parties to the MOA: the cities of Calimesa, Redlands and Yucaipa; San Bernardino Valley Municipal Water District; San Gorgonio Pass Water Agency; Yucaipa Valley Water District; South Mesa Water Company; South Mountain Water Company; and Western Heights Water Company.

Before either GSA can be the exclusive GSA for their respective basin, SGMA requires that they hold a noticed public hearing to adopt a resolution to become the exclusive GSA. The Bear Valley Basin GSA hearing is scheduled for May 25, 2017. The parties to Yucaipa Sub-Basin GSA MOA will hold separate public hearings on various dates before June 30, 2017. The GSAs will then have 30 days to notify DWR of their decisions, providing among other things a map of the service areas of the parties within each basin (attached) and a list of all beneficial uses and users of the groundwater and how their interests will be considered in the operation of the GSAs and the development and implementation of their GSPs.

DWR will post the notices on its SGMA Portal on its website (sgma.water.ca.gov/portal/#intro). Other eligible local agencies in each basin, including the County, will then have 90 days to file a competing GSA notice. If no competing notices are filed with DWR, the Bear Valley Basin GSA and Yucaipa Sub-Basin GSA will become the exclusive GSAs for their basins. On March 7, 2017 (Item No. 20), the Board of Supervisors (Board) adopted a resolution that the County would not be the GSA for 11 groundwater basins and sub-basins in the county, including Bear Valley Basin and Yucaipa Sub-Basin. The Board adopted a similar resolution covering five other basins on January 10, 2017 (Item No. 21).

The parties to these GSAs requested that the County support their efforts. If approved by the Board, the recommended letters will be provided to the Bear Valley Basin GSA and Yucaipa Sub-Basin GSA.

If local agencies in any of the other 14 basins covered by the Board's January 10 and March 7 resolutions request support of their GSA, approval of Recommendation No. 2 will authorize the Chairman of the Board or the Chief Executive Officer to execute similar letters of support, subject to review by County Counsel.

5/23/17 #55

PROCUREMENT
N/A.

REVIEW BY OTHERS
This item has been reviewed by County Counsel (Sophie A. Akins, Deputy County Counsel, 387-5001) on May 5, 2017; Finance (Stephenie Shea, Administrative Analyst, 387-4919) on May 8, 2017; and County Finance and Administration (Katrina Turturro, Deputy Executive Officer, 387-5423) on May 8, 2017.

5/23/17 #55

Exhibit A

COPY

RESOLUTION NO. 2017-18

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF YUCAIPA, CALIFORNIA, APPROVING THE MEMORANDUM OF AGREEMENT TO FORM A GROUNDWATER SUSTAINABILITY AGENCY FOR THE YUCAIPA SUB-BASIN WITH THE CITIES OF CALIMESA AND REDLANDS; THE SOUTH MESA WATER COMPANY; THE SOUTH MOUNTAIN WATER COMPANY; THE WESTERN HEIGHTS WATER COMPANY; THE YUCAIPA VALLEY WATER DISTRICT; THE SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT; AND THE SAN GORGONIO PASS WATER AGENCY

WHEREAS, on September 16, 2014, Governor Jerry Brown signed into law Senate Bills 1168 and 1319, and Assembly Bill 1739, collectively known as the Sustainable Groundwater Management Act ("SGMA"), codified in certain provisions of the California Government Code, including commencing with Section 65350.5, and codified in Part 2.74 of Division 6 of the California Water Code, commencing with Section 10720, and amending other provisions of the California Government Code and California Water Code; and

WHEREAS, various clarifying amendments to SGMA were signed into law in 2015, including Senate Bills 13 and 226, and Assembly Bills 617 and 939, which were codified in part in California Water Code Section 10723.6(a), authorizing a combination of local agencies to form a Groundwater Sustainability Agency (GSA) pursuant to a joint powers agreement, a memorandum of agreement, or other legal agreement; and, California Water Code Section 10723.6(b), authorizing water corporations regulated by the California Public Utilities Commission and mutual water companies to participate in a GSA through a memorandum of agreement or other legal agreement; and

WHEREAS, the Yucaipa Sub-Basin (Basin) is identified by the California Department of Water Resources (DWR) Bulletin 118 as Sub-Basin No. 8-02.07 of the Upper Santa Ana Valley Groundwater Basin, and is designated by DWR as a medium priority basin; and

WHEREAS, California Water Code Section 10720.7 requires the Basin, as a medium priority basin that is not designated by DWR as being subject to critical conditions of overdraft, to be managed by Groundwater Sustainability Plan by January 31, 2022; and

WHEREAS, the Cities of Yucaipa, Calimesa and Redlands; the Yucaipa Valley Water District; the South Mountain Water Company; the San Bernardino Valley Municipal Water District; and the San Gorgonio Pass Water Agency have water supply, water management, and/or land use responsibilities for their respective jurisdictional areas overlying the Basin and are local agencies as defined by SGMA, and thus each is authorized by SGMA to become or form a GSA; and

WHEREAS, the South Mesa Water Company and the Western Heights Water Company produce groundwater and provide water service within the Basin, and it is the intent to provide for management-level participation by these Water Companies in the GSA

WHEREAS, the City held a public hearing on May 22, 2017, after publication of notice pursuant to Government Code Section 6066 to consider adoption of this Resolution; and

WHEREAS, adoption of this Resolution does not constitute a "Project" under the California Environmental Quality Act (CEQA) pursuant to 15060(c)(3) and 15378(b)(5) of the State CEQA Guidelines because it is an administrative action that does not result in any direct or indirect physical change in the environment.

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF YUCAIPA DOES HEREBY RESOLVE, DETERMINE AND ORDER AS FOLLOWS:

Adopt Resolution No. 2017-18 approving the Memorandum of Agreement to form a Groundwater Sustainability Agency for the Yucaipa sub-basin with the Cities of Calimesa and Redlands; the South Mesa Water Company; the South Mountain Water Company; the Western Heights Water Company; the Yucaipa Valley Water District; the San Bernardino Valley Municipal Water District; and the San Gorgonio Pass Water Agency.

PASSED, APPROVED, and ADOPTED this 22nd day of May, 2017.

DICK RIDDELL, MAYOR

ATTEST:

JENNIFER SHANKLAND, CITY CLERK

RESOLUTION 2017 - 09

A RESOLUTION OF THE BOARD OF DIRECTORS OF THE SAN GORGONIO PASS WATER AGENCY TO APPROVE THE MEMORANDUM OF AGREEMENT TO JOINTLY FORM THE YUCAIPA GROUNDWATER SUSTAINABILITY AGENCY FOR THE YUCAIPA SUBBASIN

WHEREAS, the Sustainable Groundwater Management Act of 2014 (SGMA) was signed into law on September 16, 2014, went into effect on January 1, 2015, and has been subject to various amendments; and

WHEREAS, SGMA provides for the sustainable management of groundwater basins at the local level through the formation of Groundwater Sustainability Agencies (GSAs) and through preparation and implementation of Groundwater Sustainability Plans (GSPs); and

WHEREAS, the Yucaipa Subbasin (Basin) is identified by the California Department of Water Resources (DWR) Bulletin 118 as Subbasin No. 8-02.07 of the Upper Santa Ana Valley Groundwater Basin, and is designated by DWR as medium priority, and therefore, except as provided by SGMA, the Basin is subject to the requirements of SGMA; and

WHEREAS, the San Gorgonio Pass Water Agency (Agency) is a special act agency of the State of California, organized and operating pursuant to the San Gorgonio Pass Water Agency Law, California Water Code Appendix, Chapter 101, and accordingly the Agency constitutes a local agency for all purposes under SGMA; and

WHEREAS, SGMA authorizes a combination of local agencies as defined by SGMA to form a GSA pursuant to a joint powers agreement, a memorandum of agreement, or other legal agreement, and SGMA also authorizes a water corporation regulated by the California Public Utilities Commission or a mutual water company to participate in a GSA through a memorandum of agreement or other legal agreement; and

WHEREAS, in accordance with SGMA, the Agency, South Mesa Water Company (South Mesa), South Mountain Water Company (South Mountain), Western Heights Water Company (Western Heights), Yucaipa Valley Water District (YVWD), City of Calimesa (Calimesa), City of Redlands (Redlands), City of Yucaipa (Yucaipa), and San Bernardino Valley Municipal Water District (San Bernardino Valley Municipal) have prepared a Memorandum of Agreement (MOA), attached hereto as **Exhibit A**, to jointly form a GSA that is referred to in the MOA as the Yucaipa-GSA to cover the entire Basin, the members of which Yucaipa-GSA are the Agency, South Mesa, South Mountain, Western Heights, YVWD, Calimesa, Redlands, Yucaipa, and San Bernardino Valley Municipal; and

WHEREAS, the Agency is committed to the sustainable management of groundwater resources within the Basin in accordance with SGMA; and

WHEREAS, pursuant to the requirements of SGMA, the Agency held a public hearing on this date after publications of notice pursuant to California Government Code Section 6066 to consider adoption of this Resolution; and

WHEREAS, pursuant to SGMA Section 10728.6 and Public Resources Code Section 21065, neither this Resolution, nor the MOA, nor the preparation or adoption of a GSP constitutes a project or approval of a project under the California Environmental Quality Act (CEQA) or the State CEQA Guidelines.

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF DIRECTORS OF THE SAN GORGONIO PASS WATER AGENCY THAT:

1. The San Gorgonio Pass Water Agency hereby approves the Memorandum of Agreement to Jointly Form the Yucaipa Groundwater Sustainability Agency for the Yucaipa Subbasin (MOA), a copy of which is attached hereto as **Exhibit A**.

2. Pursuant to the MOA and as authorized by SGMA, the San Gorgonio Pass Water Agency elects to jointly form and participate as a member of the Yucaipa Groundwater Sustainability Agency (Yucaipa-GSA) for the entire Basin as further set forth and depicted in the MOA.

3. The General Manager of the San Gorgonio Pass Water Agency is hereby authorized and directed to coordinate with other members of the Yucaipa-GSA to submit a copy of this Resolution and other applicable information to the California Department of Water Resources regarding the formation of the Yucaipa-GSA.

I HEREBY CERTIFY that the foregoing is a true, full and correct copy of Resolution 2017-09 that was duly introduced, passed and adopted at a regular meeting of the Board of Directors of the San Gorgonio Pass Water Agency, at its regular meeting on June 5, 2017.

David L. Fenn, Board President
San Gorgonio Pass Water Agency

ATTEST:

Jeffrey Davis, Secretary

BYLAWS OF THE
YUCAIPA SUSTAINABLE GROUNDWATER MANAGEMENT AGENCY
(Department of Water Resources Sub-Basin No. 8-02.07)

ARTICLE I - NAME, ORGANIZATION, REPRESENTATIVES, PRINCIPAL OFFICE

Section 1.1 Name. The name of this organization is the Yucaipa Sustainable Groundwater Management Agency (hereinafter referred to as the "Yucaipa-SGMA").

Section 1.2 Organization. The Yucaipa-SGMA was formed by a Memorandum of Agreement ("MOA") in 2017 which remains in full force and effect, by and among: South Mesa Water Company, South Mountain Water Company, Western Heights Water Company and Yucaipa Valley Water District, herein collectively referred to as the "Water Purveyors"; and the City of Calimesa, the City of Redlands, and the City of Yucaipa, herein collectively referred to as the "Municipalities"; and the San Bernardino Valley Municipal Water District, and the San Gorgonio Pass Water Agency, herein collectively referred to as the "Regionals." Each of the above-described entities is individually referred to as a "Party" and collectively referred to as the "Parties".

Section 1.3 Board of Directors. Each Party shall appoint a principal representative and alternative representative, who may be changed from time to time at the sole discretion of the designating Party. The individuals appointed to the Yucaipa-SGMA shall be a senior executive management level employee of each designating Party. In the event that the appointed representative(s) is/are no longer employed by the appointing Party, the individual will be removed as a member of the Board of Directors of the Yucaipa-SGMA. Written confirmation from the governing board shall be provided to the Yucaipa-SGMA at the Principal Office following any change in representation.

Section 1.4 Principal Office. The principal office of the Corporation is hereby fixed and located at the offices of the San Bernardino Valley Municipal Water District, 380 East

Vanderbilt Way, San Bernardino, California 92408. The Parties hereby granted full power and authority to change said principal office from one location to another. Any such change shall be noted by the Secretary.

ARTICLE II - ROLES AND RESPONSIBILITIES

Section 2.1 Sustainable Groundwater Management Act. The Parties agree to jointly implement the Sustainable Groundwater Management Act ("SGMA"), codified in certain provisions of the California Government Code, including commencing with Section 65350.5, and codified in Part 2.74 of Division 6 of the California *Water Code*, commencing with Section 10720, and amending other provisions of the California *Government Code* and California *Water Code.*

Section 2.2 Groundwater Sustainability Plan. Specifically, the Parties agree to develop, implement, and maintain a Groundwater Sustainability Plan ("Plan") prepared pursuant to the Sustainable Groundwater Management Act (Part 2.74 of Division 6 of the Water Code, beginning with Section 10720) for the Yucaipa Basin (Department of Water Resources Sub-Basin No. 8-02.07) ("Basin"),

The following general principles shall guide the Parties in the implementation of a Groundwater Sustainability Plan: (a) Adopt a Plan that defines the basin setting and establishes criteria that will maintain or achieve sustainable groundwater management; (b) Monitor and report groundwater conditions to demonstrate that the Plan is achieving the sustainability goal for the basin; (c) Document the effect of the implementation of the Plan on adjacent basins; (d) Modify the Plan as needed, and report on a substantial compliance to the California Department of Water Resources; (e) Establish and report sustainable management criteria, projects, and management actions; and (f) Justify that the Plan provides a sustainably managed basin for 20 years following Plan implementation without adversely affecting the ability of an adjacent basin to achieve and maintain its sustainability goal.

Section 2.3 Powers and Duties. The Yucaipa-SGMA shall exercise the following powers:

A. To adopt rules, regulations, policies, bylaws and procedures governing the operation of the Yucaipa-SGMA.

B. To establish as-needed Ad Hoc and Standing advisory committees for making recommendations to the Board of Directors. Committees shall exist for the term specified in the action creating the committee, and the Board of Directors may dissolve a committee at any time through a majority vote of the Parties.

C. To monitor all public and private groundwater production and extractions.

D. To develop a Groundwater Sustainability Plan as described in Section 2.2.

E. To prepare an Annual Groundwater Report that reflects: all public and private groundwater extractions; natural and artificial recharge; return from use; water quality issues; contamination plumes; and other parameters deemed necessary by the Board of Directors to accurately determine the quantity and quality of the groundwater conditions in the Yucaipa Basin (Department of Water Resources Sub-Basin No. 8-02.07).

F. To determine the amount of additional artificial recharge for the Basin from imported sources as a complement to native sources, and to plan for the development and application of such additional sources of recharge.

G. By a majority vote, the Board of Directors may elect to exercise the following powers for a duration determined or modified as needed:

   a. To contract for the services of engineers, attorneys, planners, financial consultants, and separate and apart therefrom, to appoint agents and representatives to employ such other staff persons as necessary.

   b. To determine, assess, collect, account, and audit annual groundwater extraction charges to recover expenses related to groundwater recharge, administrative expenses, data collection, and report preparation as determined by the Board of Directors.

   c. To cooperate, act in conjunction, and contract with the United States, the State of California, or any agency thereof, counties, municipalities, public and private corporations of any kind (including without limitation, investor-owned utilities), and individuals, or any of them, for any and all purposes necessary or convenient for the purposes of the Yucaipa-SGMA.

d. To accumulate operating and reserve funds and invest the same as allowed by law for the purposes of the Yucaipa-SGMA.

e. As may be permitted by law, to apply for and accept grants, contributions, donations and loans, including under any federal, state or local programs for assistance in developing or implementing any of its projects or programs in connection with any project untaken by the Yucaipa-SGMA.

f. To implement a cost-sharing methodology in a manner that qualifies as a pass-through charge under the Constitutional requirements of Proposition 218 and similar revenue-raising requirements.

g. To exercise any power necessary or incidental to the foregoing powers in the manner and according to the procedures provided for under the law applicable to the Parties to this Agreement.

ARTICLE III - MEETINGS

Section 3.1 Regular Meetings. The Parties shall hold regular quarterly meetings on the fourth Wednesday in January, April, July, October for the purpose of conducting routine business matters. The Parties by resolution may fix and adjust the time, date, and place of holding such meetings.

Section 3.2 Workshops and Special Meetings. The Parties may schedule, and conduct workshops and special meetings as needed at the direction of a majority of the Board of Directors. The Parties by resolution may fix the time, date, and place of holding such meetings.

Section 3.3 Voting Methodology. The voting structure for matters pertaining to the establishment and implementation of the administrative components of the Yucaipa-SGMA shall be by simple majority (51%) of the voting Parties, wherein each Water Purveyor, Municipality and Regional holds a single vote.

Section 3.4 Fees and Compensation. Representatives from each Party shall receive no compensation or expenses from the Yucaipa-SGMA.

Section 3.5 Ralph M. Brown Act. Notwithstanding any of the provisions of these Bylaws to the contrary, all meetings shall be subject to the Ralph M. Brown Act, commencing at Section 54950 of the Government Code of the State of California.

Section 3.6 Conduct of Meetings. The President or, in the absence of the President the Vice President, or, in the absence of the Vice President the Secretary, or, in the absence of the Secretary a Chairperson chosen by a majority of the Parties present, shall preside over the meeting.

Section 3.13 Quorum. A majority of the Parties constitutes a quorum for the transaction of business.

ARTICLE IV - OFFICERS

Section 4.1 Officers. The officers of the Yucaipa-SGMA shall be a President, a Vice President, a Secretary, a Treasurer.

Section 4.2 Election. The officers shall be chosen at the first Regular Meeting held each calendar year and each shall hold office until the officer shall resign, be removed, or be otherwise disqualified to serve, or the officer's successor is elected.

Section 4.3 Removal and Resignation. Any officer may resign, or may be removed, with or without cause, at any time. Vacancies caused by death, resignation or removal of any officer may be filled by a majority vote of the Parties.

Section 4.4 President. The President shall preside at all meetings of the Parties.

Section 4.5 Vice President. In the absence of the President, the Vice President shall perform all the duties of the President.

Section 4.6 Secretary. The Secretary shall keep a book of minutes of all meetings, with the time and place of holding, the names of those present, and actions taken by the Parties.

Section 4.7 Treasurer. The Treasurer shall keep and maintain adequate and correct books of account showing the receipts and disbursements of the Yucaipa-SGMA, and an account of its cash and other assets, if any. Such books of account shall at all reasonable times be open to inspection by any Director.

The Treasurer shall deposit all moneys of the Yucaipa-SGMA with such depositories as are designated by the Parties and shall disburse the funds of the Yucaipa-SGMA as may be ordered, and shall render to the Parties, regular statements of the financial condition of the Yucaipa-SGMA.

ARTICLE V - MISCELLANEOUS

Section 5.1 Execution of Documents. The Parties may authorize any officer or officers as agent or agents, to enter into any contract or execute any instrument in the name of and on behalf of the Yucaipa-SGMA and such authority may be general or confined to specific instances; and unless so authorized, no officer, agent or other person shall have any power or authority to bind the Yucaipa-SGMA by any contract or engagement or to pledge its credit or to render it liable for any purpose or to any amount.

Section 5.2 Inspection of Bylaws. The Yucaipa-SGMA shall keep in its principal office the original or a copy of these Bylaws, as amended or otherwise altered to date, certified by the Secretary, which shall be open to inspection by members of the public at all reasonable times during office hours.

Section 5.3 Fiscal Year. The fiscal year of the Yucaipa-SGMA shall begin July 1 of each year and end on the last day of June of the succeeding year.

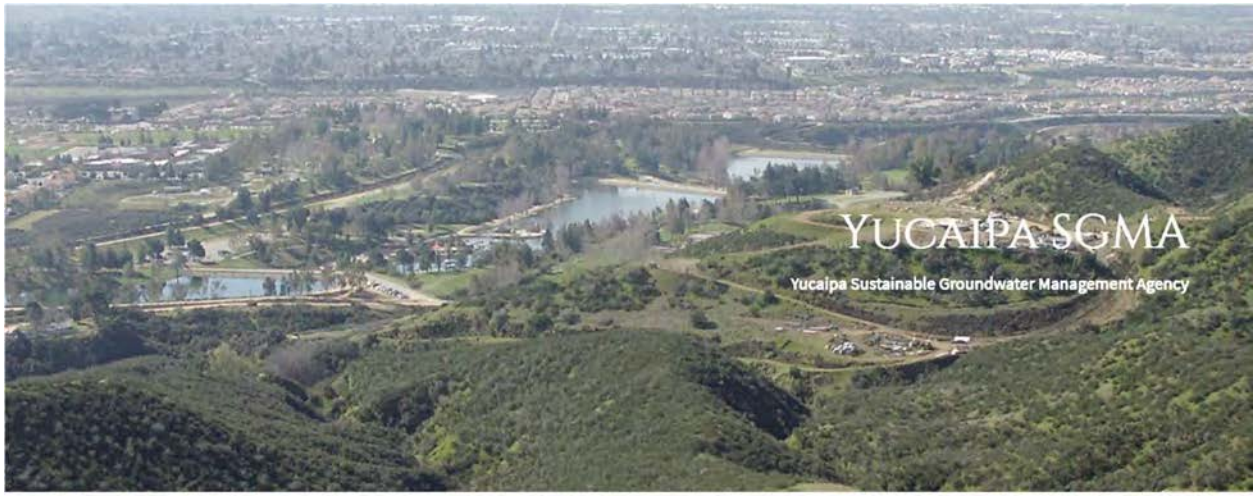
Section 5.4 Construction and Definitions. Unless the context otherwise requires, the general provisions, rules of construction and definitions contained in the Law shall govern the construction of these Bylaws. If any section, subsection, sentence, clause or phrase of these Bylaws, or the application thereof, is contrary to the Law, the provisions of the Law shall prevail. Without limiting the generality of the foregoing, the masculine gender includes the feminine and neuter, the singular number includes the plural and the plural number includes the singular, and the term "person" includes a corporation as well as a natural person.

Section 5.5 Amendments. New Bylaws may be adopted, or these Bylaws may be amended or repealed by the vote of the Parties. No amendment to these Bylaws shall be effective until approved by the Parties.

Approved unanimously on May 23, 2018.

Appendix 1-C

Public Outreach and Engagement Plan



PUBLIC OUTREACH AND ENGAGEMENT PLAN

Prepared for:

Yucaipa Sustainable Groundwater Management Agency
YucaipaSGMA.org

Prepared by:

DUDEK
605 Third Street
Encinitas, California 92024

July 2019

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GLOSSARY OF TERMS/ABBREVIATIONS

Acronym/Abbreviation	Definition
Yucaipa SGMA	Yucaipa Sustainable Groundwater Management Agency
GSA	Groundwater Sustainability Agency
GSP	Groundwater Sustainability Plan
DWR	California Department of Water Resources
TAG	Technical Advisory Group
SWRCB	State Water Resources Control Board
South Mesa	South Mesa Water Company
South Mountain	South Mountain Water Company
WHWC	Western Heights Water Company
YVWD	Yucaipa Valley Water District
SBVMWD	San Bernardino Valley Municipal Water District
SGPWA	San Gorgonio Pass Water Agency
Term	**Definition**
Aquifer	An underground layer of water-bearing permeable rock, rock fractures or unconsolidated material (gravel, sand, or silt) that yields significant amounts of groundwater to wells or springs (DWR Bulletin 118).
Yucaipa Subbasin	Upper Santa Ana Valley Groundwater Basin, Yucaipa Subbasin, identified as Groundwater Basin Number 8-2.07 in DWR Bulletin 118 – California's Groundwater
Stakeholder	An individual with interest in the Yucaipa Subbasin GSP
Engagement	Efforts made to understand and involve stakeholders and their concerns in the activities and decision-making of the Yucaipa GSA
Member Agencies	The water purveyors, municipalities and regional water agencies who are members of the Yucaipa Groundwater Sustainability Agency

1 BACKGROUND OF THE SUSTAINABLE GROUNDWATER MANAGEMENT ACT

The Sustainable Groundwater Management Act, signed into law by Governor Jerry Brown on September 16, 2014, created a new framework for groundwater management in California. The framework includes a structure and schedule to achieve sustainable groundwater management within 20 years. The California Department of Water Resources (DWR) has historically managed the state's central repository for groundwater data. Under The Sustainable Groundwater Management Act, DWR provides guidance, financial assistance, and technical support for compliance with state requirements. The State Water Resources Control Board (SWRCB) provides the regulatory backstop under The Sustainable Groundwater Management Act, taking over basin management and assessing fees if local groundwater management is not successful in complying with the requirements of The Sustainable Groundwater Management Act.

The Sustainable Groundwater Management Act established a new structure for local groundwater management through Groundwater Sustainable Agencies (GSAs). The formation of GSAs for all basins that the DWR designated as high and medium priority groundwater basins was required by July 1, 2017. Each GSA for these high and medium priority basins must then develop a Groundwater Sustainability Plan (GSP) that details how sustainable groundwater management will be achieved within 20 years of implementing the GSP. Sustainable groundwater management is defined by The Sustainable Groundwater Management Act as *the management and use of groundwater in a manner that can be maintained during the planning and implementation horizon without causing undesirable results*. This avoidance of undesirable results is measured through six sustainability indicators:

1. Chronic lowering of groundwater levels indicating a significant and unreasonable depletion of supply if continued over the planning and implementation horizon,
2. Significant and unreasonable reduction of groundwater storage,
3. Significant and unreasonable seawater intrusion,
4. Significant and unreasonable degradation of water quality,
5. Significant and unreasonable land subsidence, and
6. Depletion of interconnected surface water and groundwater that has significant and unreasonable adverse impacts on beneficial uses of the surface water.

The GSP is a tool used to help the GSA sustainably manage the basin. The criteria for sustainable management, including determining what is significant and unreasonable within the parameters of The Sustainable Groundwater Management Act for the

groundwater basin managed by that GSA, must be assessed, with input from stakeholders, before the GSP can be adopted.

1.1 Sustainable Groundwater Management Act Requirements for Stakeholder Engagement

Stakeholder engagement is an important component of any successful long term planning effort. Engaging members of the public in groundwater sustainability planning will improve public understanding of the technical and political considerations the GSA factors into their decision-making process. Participation by the public will also improve the GSA's understanding of the potential impacts of their decisions.

The Sustainable Groundwater Management Act recognized the importance of stakeholder engagement and laid out specific requirements for stakeholder engagement within each of the four phases of The Sustainable Groundwater Management Act:

Phase 1: GSA Formation and Coordination
The following Phase 1 requirements were completed by Yucaipa SGMA in 2017 and 2018:

- Establish and maintain a list of interested parties
- Provide public notice of the GSA formation
- Conduct a GSA formation public hearing
- Notify DWR of the GSA formation
- Provide a written statement to DWR as well as cities and counties within the GSA boundary describing how interested parties may participate in the GSP development.
- Develop GSA website for interested parties

Phase 2: GSP Preparation and Submission
The following Phase 2 requirements will be completed by Yucaipa SGMA by January 31, 2022:

- Submit initial notification.
- Prepare a GSP that considers beneficial uses and users of groundwater when describing undesirable results, minimum thresholds, projects and actions.
- The GSP must include a communication section that includes the following:
    - An explanation of the Agency's decision-making process.
    - Identification of opportunities for public engagement and a discussion of how public input and response will be used.

  - A description of how the Agency encourages the active involvement of diverse social, cultural, and economic elements of the population within the basin.
  - The method the Agency will follow to inform the public about progress implementing the Plan, including the status of projects and actions.
- The GSA must provide public noticing and hold a public meeting before adopting or amending a GSP.

Phase 3: GSP Review and Evaluation
The following Phase 3 requirements will be completed by DWR:

- After the GSA adopts the GSP and it is submitted to DWR, the GSP will be available on the DWR website for a 60-day comment period for any person to provide comments to DWR before the DWR completes evaluation and assessment of the GSP.

Phase 4: Implementation and Reporting
The following Phase 4 requirements will be completed by Yucaipa SGMA through 2042:

- The Sustainable Groundwater Management Act requires assessments and re-evaluation of the GSP at least every 5 years. The GSA must provide public notice and hold public meetings prior to amending the GSP.
- Public notice is also required before the GSA imposes or increases fees.

There are also has general requirements that apply to all four phases of Sustainable Groundwater Management Act implementation.

2 YUCAIPA SUBBASIN AND GSA FORMATION

The Upper Santa Ana Valley Groundwater Basin, Yucaipa Subbasin lies under portions of the cities of Calimesa, Redlands, and Yucaipa, as well as unincorporated San Bernardino and Riverside Counties. The Subbasin, cataloged by the California Department of Water Resources (DWR) as groundwater basin number 8-2.07, is approximately 25,300 acres (Figure 1).

The Yucaipa Sustainable Groundwater Management Agency (Yucaipa SGMA) was formed as the GSA for the Yucaipa Subbasin in 2017 through a Memorandum of Agreement (MOA) entered into by local water purveyors, municipalities, and regional water management entities.

Yucaipa-GSA Member Agencies
Purveyors
South Mesa Water Company
South Mountain Water Company
Western Heights Water Company
Yucaipa Valley Water District
Municipalities
City of Redlands
City of Yucaipa
Regionals
San Bernardino Valley Municipal Water District
San Gorgonio Pass Water Agency

The Yucaipa SGMA completed the initial phase of stakeholder engagement (Phase 1) in June 2017 and provided the required documentation for GSA formation, which is available to the public through the DWR Sustainable Groundwater Management Act Portal (https://sgma.water.ca.gov/portal/gsa/print/349).

The City of Calimesa submitted a written Notice of Withdrawal dated November 19, 2018 and the Yucaipa SGMA subsequently acknowledged the withdrawal of the City of Calimesa from the Yucaipa SGMA at the January 23, 2019 meeting.

2.1 Yucaipa SGMA and GSA Decision Making Process

The roles and responsibilities of the Yucaipa SGMA were further clarified in the By-Laws adopted in May 2018. Each of the Member Agencies appoints one principal representative and one alternate representative to the Yucaipa SGMA Board. All Board meetings are public meetings subject to the Ralph M. Brown Act. Each Board member has one vote and a simple majority of 51% of the voting parties is required to pass an item. A majority of the Board is considered a quorum for purposes of meeting and decision-making.

3 YUCAIPA SUBBASIN GSP

The DWR has designated the Yucaipa Subbasin as a high-priority basin based on population size and growth, reliance on groundwater for public water supply, and long-term declines in groundwater levels. The Yucaipa Subbasin is not designated as critically overdrafted, therefore a GSP must be developed by January 31, 2022. This GSP will detail a pathway to sustainable groundwater management by 2042 in accordance with the Sustainable Groundwater Management Act.

Yucaipa SGMA has initiated the process of developing a GSP (Yucaipa GSP) for the Yucaipa Subbasin that will define a course of action to achieve sustainable groundwater management within 20 years of plan adoption. The Yucaipa GSP will identify local undesirable results and identify management actions to minimize undesirable results as well as milestones to ensure progress. A groundwater monitoring program will be developed and implemented to track improvement within the basins leading to sustainable management. The Yucaipa GSP will be re-evaluated and refined, as needed, and submitted to DWR every five years in accordance with the Sustainable Groundwater Management Act.

4 PURPOSE OF THE DOCUMENT

This Public Outreach and Engagement Plan (Plan) has been developed as a communication tool to help stakeholders understand the importance of participation in groundwater sustainability planning and lay the framework of how stakeholders can actively engage in the Yucaipa-GSA planning effort. In 2018, DWR released a guidance document for GSP Stakeholder Communication and Engagement that details best practices including the development of Communication and Engagement Plans to increase transparency in the GSP development process.

The Yucaipa SGMA will prepare a GSP in accordance with The Sustainable Groundwater Management Act that will guide future management decisions including the amount of ground water that can be pumped from the subbasin without causing undesirable results, and the development of new projects to enhance water resource management.

The Yucaipa SGMA discussed overarching goals for outreach and engagement at the April 24, 2019 Board Meeting. The primary goals during the GSP development process included:

1. Maintaining transparency throughout the GSP development process,
2. Developing a common understanding among stakeholders of the Yucaipa subbasin needs, and

3. Exceeding the state requirements for outreach and engagement.

This Plan is intended to be a guiding framework that will be updated as needed to maintain transparency throughout the GSP development and implementation process.

5 OPPORTUNITIES FOR PUBLIC INVOLVEMENT AND ENGAGEMENT

The Yucaipa SGMA encourages members of the public to participate in the GSP development and implementation process through attending public meetings, providing comments on the draft GSP, and communicating directly with member agency staff and Board members.

5.1 Meeting Opportunities

The Yucaipa SGMA Board holds quarterly regular meetings the fourth Wednesday in January, April, July, and October to conduct routine business matters. During the development of the GSP, the Technical Advisory Group (TAG) will meet approximately monthly as needed. All Board and TAG meetings are open to the public and each meeting agenda includes an item where members of the public can speak to the Board. All meeting agendas and minutes are posted on the Yucaipa SGMA website (https://yucaipasgma.org).

5.1.1 Public Notices

Board meetings and workshops are noticed in accordance with the Brown Act. In addition to publicly noticing meetings on the Yucaipa SGMA website, the Yucaipa SMGA maintains a list of interested parties and distributes electronic agenda information and newsletters via email. Newsletters include notices of Yucaipa SGMA Board meetings and other updates including updates on the progress of the GSP development and implementation. Interested parties can subscribe to the list that receives email notifications through the “subscribe” link at the bottom of the website home page (https://yucaipasgma.org).

5.2 Collaborative Opportunities

The Yucaipa-SMGA has taken an inclusive approach to groundwater management, making space on the Board for each of the local entities with water supply, water management, and or land use responsibility in the Yucaipa Subbasin that wanted to participate in the GSA. The Board understands that each interested party has an established relationship with their local water supplier that should continue through the development and implementation of the GSP. Each Board member is appointed by the

member agency and represents the constituents in their jurisdiction. In addition to the Yucaipa SGMA Board member agencies, representatives from the City of Calimesa, the County of Riverside and the County of San Bernardino participated in the formation of the Yucaipa SGMA and are committed to continued involvement as representatives of their stakeholder interests. Due to this uniquely inclusive Board structure, Yucaipa SGMA views each Board member and stakeholder representative as an ambassador of their own jurisdiction, representing their interests in the Yucaipa SGMA meetings.

Purveyors

5.2.1 South Mesa Water Company

The South Mesa Water Company (South Mesa) is a mutual water company, formed in 1912, with approximately 4 square miles within the service area including portions of both the City of Calimesa and the City of Yucaipa. Water supplied by South Mesa is currently 100% groundwater. The South Mesa service area is approximately 90% residential with some industrial uses, several schools, and some small parks. South Mesa engages directly with shareholders through the annual shareholder meeting and updates as needed. South Mesa engages with shareholders through their website, regular Consumer Confidence Reports, social media platforms and information available at the South Mesa office. Many shareholders also pay their bills in person and converse regularly with South Mesa staff.

5.2.2 South Mountain Water Company

The South Mountain Water Company (South Mountain) is a mutual water company with groundwater production in the Yucaipa subbasin. The City of Redlands owns majority shares and operates the two wells owned by South Mountain. The business activities of the company are conducted by Bear Valley Mutual Water Company.

5.2.3 Western Heights Water Company

The Western Heights Water Company (WHWC) serves approximately 4.53 square miles including parts of the City of Yucaipa and the City of Redlands. Approximately 90% of WHWC customer demand is domestic with approximately 10% industrial and commercial use. WHWC currently has sufficient groundwater supply for 100% of the potable water demand, but purchases 25% imported water to offset groundwater demand. WHWC shareholders engage in decision making through participation in WHWC Board meetings.

5.2.4 Yucaipa Valley Water District

The Yucaipa Valley Water District (YVWD) is a special district that was formed in 1971 and supplies local groundwater, treated imported water, and recycled water. The Yucaipa Valley Water District service area is approximately 40 square miles and includes portions of the City of Calimesa and the City of Yucaipa. Approximately 78% of the water use in the YVWD is residential with approximately 22% commercial, industrial and institutional. The YVWD engages with customers through their local office, website and consumer confidence reports. YVWD also published some notices in the local newspaper as appropriate.

Municipalities

5.2.5 City of Redlands

The City of Redlands was incorporated in 1888 and currently serves water to local businesses and more than 75,000 residents in Redlands, Mentone, parts of Crafton Hills, San Timoteo Canyon, and a small portion of San Bernardino. The City of Redlands supplies originate as surface water, groundwater and imported water. The City of Redlands provides ongoing communication with stakeholders through their website and social media. Important water-related information is distributed with consumer confidence reports and bills as appropriate.

5.2.6 City of Yucaipa

The City of Yucaipa was incorporated in 1989 and currently has over 58,000 residents. Water service in the City is provided by YVWD, South Mesa, and WHWC. South Mountain has water facilities, including water wells, within the City of Yucaipa, but does not currently provide water services in the City. The entire City of Yucaipa is within the service area of the SBVMWD. The City of Yucaipa has several commissions and committees, including the Planning Commission, Parks and Recreation Commission, and Trails and Open Space Committee, that enable citizens to participate in the governance process. The City of Yucaipa regularly holds public meetings where members of the general public can voice concerns or issues. The City also engages with stakeholders through social media, the city website and newspaper publications as appropriate.

Regionals

5.2.7 San Bernardino Valley Municipal Water District

The San Bernardino Valley Municipal Water District was formed in 1954 as a regional water agency. The San Bernardino Valley Municipal Water District is a wholesale water supplier that imports water through the State Water Project, manages groundwater stored within the District boundaries, and coordinates delivery of imported water to local water retail agencies.

5.2.8 San Gorgonio Pass Water Agency

The San Gorgonio Pass Water Agency (SGPWA) was established in 1961 and supplies State Water Project water to retail water agencies. The SGPWA engages with stakeholders through semi-monthly public Board meetings and workshops. SGPWA provides regular updates on the website and through social media.

Stakeholders

5.2.9 City of Calimesa

The City of Calimesa was incorporated in 1990 and currently has over 8,000 residents. Water service in the City is provided by South Mesa and YVWD. The entire City of Calimesa is within the San Gorgonio Pass Water Agency service area. The City has several active commissions and provides opportunities for public comment at all City Council and Commission meetings. The City also engages with stakeholders through their website and social media.

5.2.10 County of Riverside

The County of Riverside was formed in 1893 and covers nearly 7,300 square miles including 28 cities. The County provides information and updates on a centralized website as well as social media.

5.2.11 County of San Bernardino

The County of San Bernardino was formed in 1854 and covers 20,000 square miles including 24 cities. The County provides information and updates on a centralized website as well as social media.

5.3 Opportunities for Tribal Communities

According to the DWR Water Management Planning Tool, as of January 2019, there are no tribal trust lands within the Yucaipa Subbasin as shown in Figure 2. Although there are no federally recognized tribes, Indian land currently or historically held in Trust by the United States Government or smaller Reservation areas within the Yucaipa Subbasin, the Yucaipa SGMA encourages participation from all stakeholders including tribal communities within the watershed.

5.4 Disadvantaged Communities

There are several communities within the Subbasin that DWR has mapped as Disadvantaged Communities (DAC) and Severely Disadvantaged Communities (SDAC) based on median household income within community census tracts, blocks, and places as shown in Figure 3. The majority of the areas designated as DAC and SDAC are within either the City of Yucaipa or the City of Calimesa. Members of these communities are represented on the Yucaipa SGMA by both their City representative and their water supplier.

5.5 Stakeholder Email List

The Yucaipa SGMA maintains a list of stakeholders interested in the GSP process, known as the *List of Interested Parties (List)*. Electronic newsletter, meeting notices, and notices of GSP documents are sent electronically to the List. There are currently over 100 individuals subscribed to the List. The List is continuously updated with individuals that request in writing to be placed on the list of interested parties or subscribe through the Yucaipa SGMA website.

5.6 Online Resources

The Yucaipa SGMA has created a website (www.YucaipaSGMA.org) that includes general information, relevant documents, a calendar of meetings and important events, as well as the agendas and minutes for all Yucaipa SGMA meetings.

6 CONTACT US

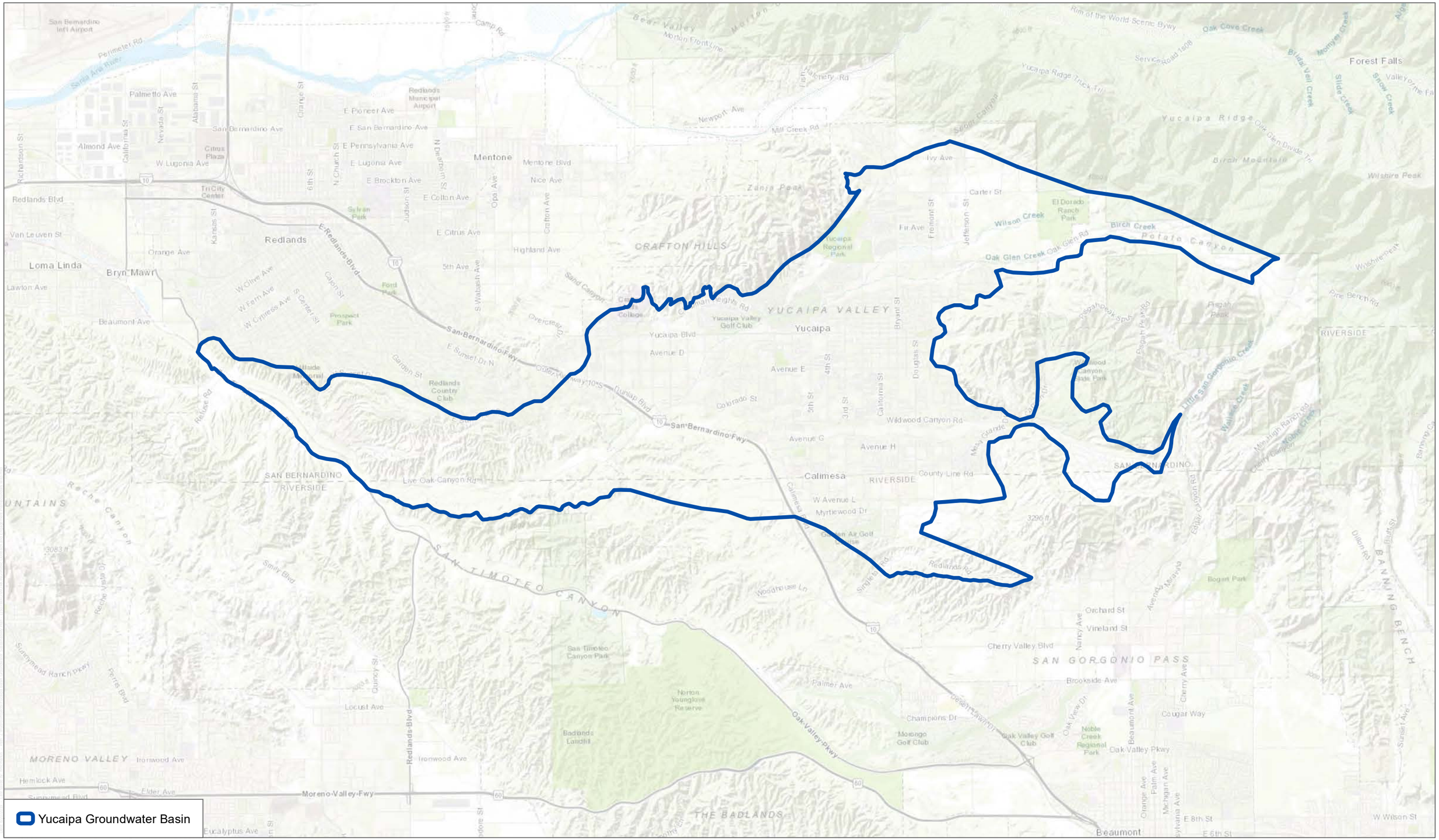
This document serves as a tool for facilitating public engagement in the GSP development process. It is designed to be a living document that is updated as needed to reflect current mechanism of engagement. Yucaipa SGMA will continue to use the communication tools outlined in this document as necessary through the implementation phase of the GSP.

For additional information regarding the Yucaipa SGMA and the GSP, please contact:

Bob Tincher, Deputy General Manager - Resources
Phone: (909) 387-9215
Email: bobt@sbvmwd.com

Mailing Address:
San Bernardino Valley Municipal Water District
380 East Vanderbilt Way,
San Bernardino, California 92408

Website: www.YucaipaSGMA.org



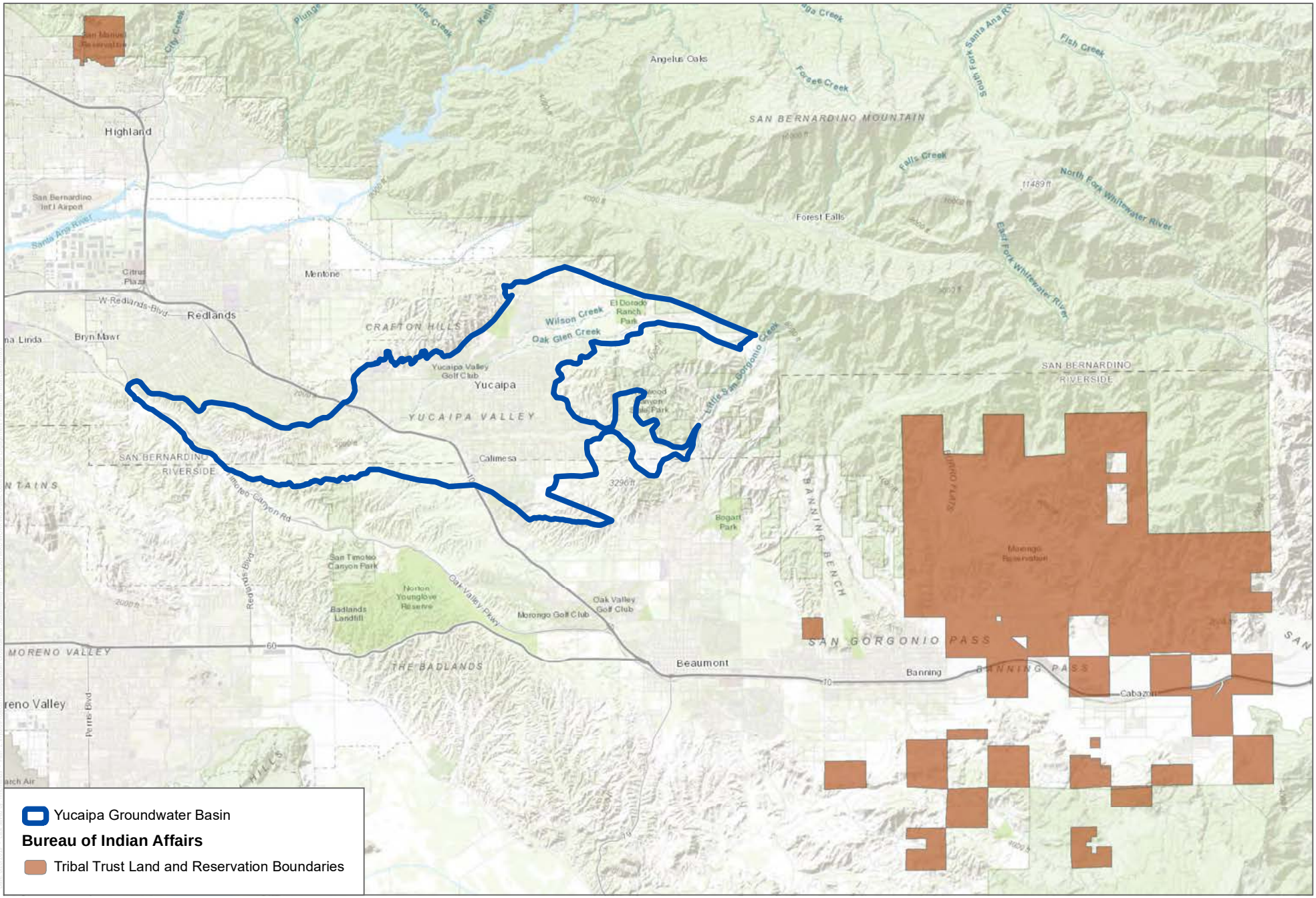
SOURCE: ESRI, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordanance Survey, ESRI Japan, METI, ESRI China (Hong Kong), swisstopo, OpenStreetMap contributors, and the GIS User Community; DWR

DUDEK

FIGURE 1

Boundary Map

Public Outreach and Engagement Plan



SOURCE: ESRI, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordanance Survey, ESRI Japan, METI, ESRI China (Hong Kong), swisstopo, OpenStreetMap contributors, and the GIS User Community; BLM; DWR

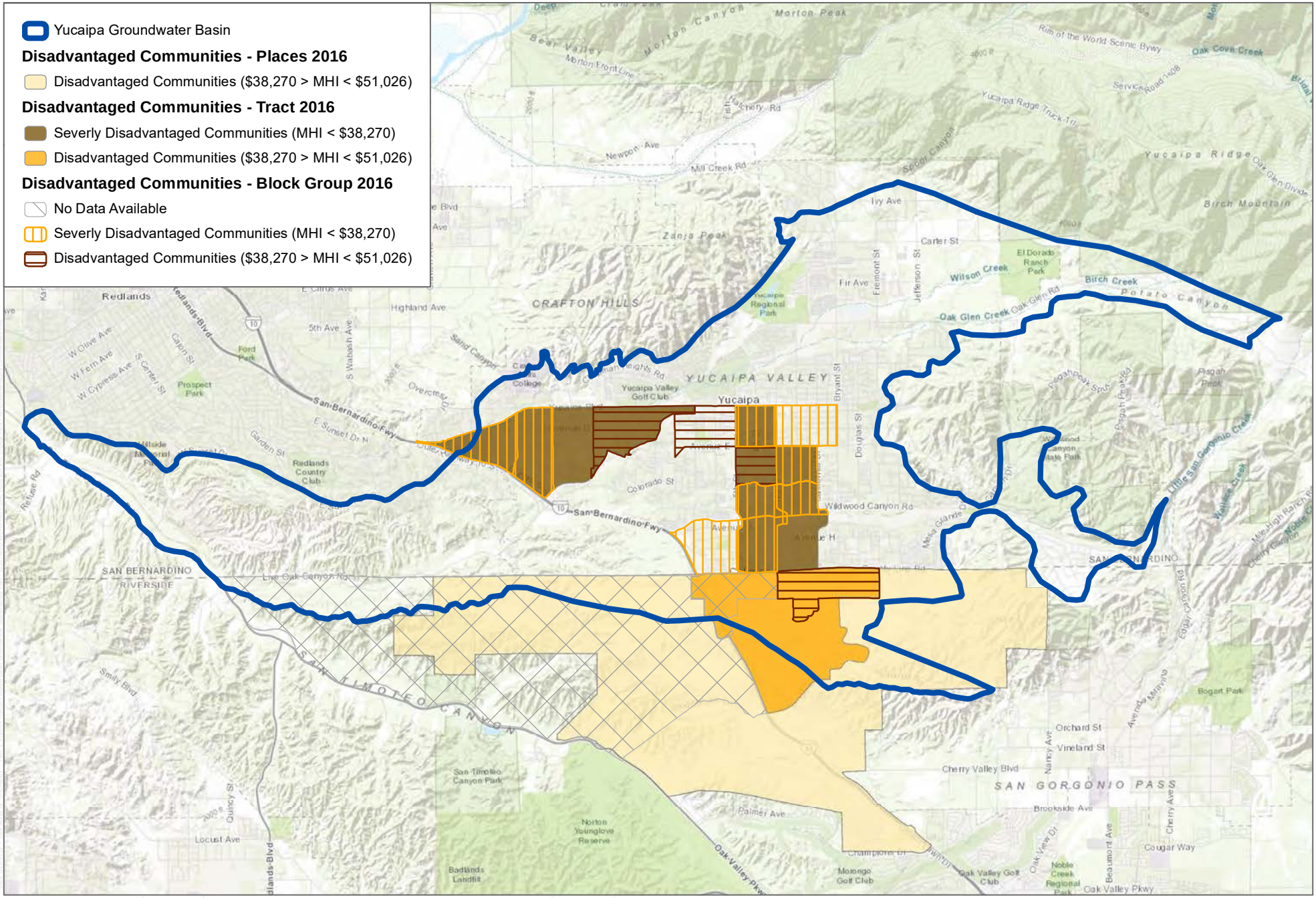
DUDEK

0 1.5 3 Miles

FIGURE 2

Tribal Trust Lands

Public Outreach and Engagement Plan



SOURCE: ESRI, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordanance Survey, ESRI Japan, METI, ESRI China (Hong Kong), swisstopo, OpenStreetMap contributors, and the GIS User Community; DWR 2019

Note: MHI = Mean Household Income

DUDEK

0 0.75 1.5 Miles

FIGURE 3

Disadvantaged Communities

Public Outreach and Engagement Plan

This plan was paid for in part by a grant from the California Department of Water Resources through the Proposition 1 Sustainable Groundwater Planning Grant Program.

DUDEK

Appendix 2-A

Annual Precipitation and Water Year Type at SBCFCD Climate Stations in the Yucaipa Subbasin

DRAFT Appendix 2-A. Annual Precipitation and Water Year-Type at San Bernardino County Flood Control District Climate Stations in the Yucaipa Subbasin

Water Year Ending	Western Heights					Calimesa					Crafton			Wilson Creek			
	2915 (2235')	3099 (2140')	3356 (2125')	% of Mean	Water Year Type	3126A (2813')	3132 (2710')	3386 (2620')	% of Mean	Water Year Type	2890 (2606')	% of Mean	Water Year Type	3126 (2815')	3128B (2860')	% of Mean	Water Year Type
1953							5.41		32%	Critically Dry				12.59	14.26	88%	Below Normal
1954							18.12		109%	Normal				17.84	16.92	114%	Above Normal
1955							13.75		82%	Below Normal				15.17	14.68	97%	Normal
1956							11.68		70%	Dry				11.72	11.83	77%	Below Normal
1957							14.47		87%	Below Normal				13.41		88%	Below Normal
1958		24.72		181%	Wet		26.48		159%	Wet				27.95		183%	Wet
1959		8.26		60%	Dry		9.13		55%	Dry				8.76		57%	Dry
1960		15.98		117%	Above Normal		14.03		84%	Below Normal				13.25		87%	Below Normal
1961		8.05		59%	Dry		2.50		15%	Critically Dry				7.63		50%	Critically Dry
1962		18.68		137%	Above Normal		16.78		101%	Normal				18.84		123%	Above Normal
1963		15.80		116%	Above Normal		14.01		84%	Below Normal				13.90		91%	Normal
1964		12.65		93%	Normal		11.04		66%	Dry				11.74		77%	Below Normal
1965		13.80		101%	Normal		13.02		78%	Below Normal							
1966		17.80		130%	Above Normal	19.63	18.19		113%	Above Normal							
1967		27.05		198%	Wet	27.41	24.76		156%	Wet							
1968		15.25		112%	Above Normal	15.46	16.80		97%	Normal							
1969		29.12		213%	Wet	38.22	35.36		221%	Wet							
1970		8.53		62%	Dry	10.26	9.91		60%	Dry					10.03	66%	Dry
1971		9.44		69%	Dry	13.44	13.75		82%	Below Normal					12.17	79%	Below Normal
1972		6.26		46%	Critically Dry	8.65	7.35		48%	Critically Dry					8.73	57%	Dry
1973		15.48		113%	Above Normal	22.33	19.93		127%	Above Normal					21.53	141%	Above Normal
1974		9.98		73%	Dry	14.32	11.83		78%	Below Normal					12.52	82%	Below Normal
1975		12.18		89%	Below Normal	17.74	14.98		98%	Normal					17.02	111%	Above Normal
1976		10.84		79%	Below Normal	18.19	15.89		102%	Normal					17.35	113%	Above Normal
1977						16.48	10.06		80%	Below Normal					13.49	88%	Below Normal
1978						36.63	29.65		199%	Wet					30.84	201%	Wet
1979						27.30	21.25		146%	Above Normal					22.51	147%	Above Normal
1980			24.67	181%	Wet	30.98	26.95		174%	Wet					21.03	137%	Above Normal
1981			7.43	54%	Dry	12.44	9.61		66%	Dry							
1982			16.05	118%	Above Normal	21.53	18.68		121%	Above Normal							
1983			28.58	209%	Wet	39.42	30.71		210%	Wet							
1984			6.87	50%	Dry	10.48	8.96		58%	Dry							
1985			10.33	76%	Below Normal	14.48	12.36		80%	Below Normal							
1986			12.36	91%	Normal	18.25	13.83		96%	Normal							
1987			8.84	65%	Dry	11.33	10.66		66%	Dry							
1988			12.10	89%	Below Normal	16.96	13.69		92%	Normal							
1989			9.20	67%	Dry	12.80	10.60	13.67	74%	Dry							
1990			7.40	54%	Dry	1.50	10.19	13.77	51%	Dry				10.99		72%	Dry
1991			15.38	113%	Above Normal	19.90	16.48	23.43	120%	Above Normal							
1992			14.88	109%	Normal	20.23	16.80	24.42	123%	Above Normal							
1993			28.18	206%	Wet	35.95	32.37	45.23	227%	Wet							

DRAFT Appendix 2-A. Annual Precipitation and Water Year-Type at San Bernardino County Flood Control District Climate Stations in the Yucaipa Subbasin

Water Year Ending	Western Heights					Calimesa					Crafton			Wilson Creek			
	2915 (2235')	3099 (2140')	3356 (2125')	% of Mean	Water Year Type	3126A (2813')	3132 (2710')	3386 (2620')	% of Mean	Water Year Type	2890 (2606')	% of Mean	Water Year Type	3126 (2815')	3128B (2860')	% of Mean	Water Year Type
1994			11.26	82%	Below Normal	12.95	11.35	15.80	80%	Below Normal							
1995			27.22	199%	Wet	31.84	28.54	38.36	197%	Wet							
1996			9.13	67%	Dry	12.12	10.19	14.06	73%	Dry	6.12	55%	Dry				
1997			16.67	122%	Above Normal	20.13	16.93	19.81	114%	Above Normal	13.12	118%	Above Normal				
1998			25.55	187%	Wet	32.10	28.60	33.27	188%	Wet	21.04	189%	Wet				
1999			7.29	53%	Dry	11.02	9.87	8.66	59%	Dry	9.20	83%	Below Normal				
2000			6.40	47%	Critically Dry	12.42	9.63	2.45	49%	Critically Dry	7.12	64%	Dry				
2001			10.49	77%	Below Normal	5.11	9.65	1.61	33%	Critically Dry	4.56	41%	Critically Dry				
2002			2.46	18%	Critically Dry	5.26	5.27	5.18	31%	Critically Dry	3.32	30%	Critically Dry				
2003			17.57	129%	Above Normal	21.32	19.50	16.92	115%	Above Normal	13.76	123%	Above Normal				
2004			9.47	69%	Dry	9.50	11.10	6.61	54%	Dry	9.16	82%	Below Normal				
2005	29.04		31.39	221%	Wet	41.67	32.73	31.70	212%	Wet	17.80	160%	Wet				
2006	9.08		11.45	75%	Below Normal		12.52	12.89	76%	Below Normal	10.92	98%	Normal				
2007	4.48		3.34	29%	Critically Dry	6.42	5.53		36%	Critically Dry	5.53	50%	Critically Dry				
2008	11.64		13.34	91%	Normal	17.94	14.79		98%	Normal	12.20	109%	Normal				
2009	8.80		9.90	68%	Dry	14.08	10.47		74%	Dry	13.04	117%	Above Normal				
2010	15.45		17.80	122%	Above Normal	16.40	17.68		102%	Normal	15.49	139%	Above Normal				
2011	14.35		24.52	142%	Above Normal	27.90	22.74		152%	Wet	20.91	188%	Wet				
2012	8.73		9.57	67%	Dry	10.85	10.80		65%	Dry	9.37	84%	Below Normal				
2013	9.96		9.69	72%	Dry	10.06	9.60		59%	Dry	10.36	93%	Normal				
2014	15.00		6.55	79%	Below Normal	7.55	7.58		45%	Critically Dry	6.92	62%	Dry				
2015	10.88		13.06	88%	Below Normal	14.78	12.39		81%	Below Normal	12.72	114%	Above Normal				
2016	9.64		10.56	74%	Dry	12.71	10.31		69%	Dry	10.42	93%	Normal				
2017	17.76		19.12	135%	Above Normal	21.49	18.38		120%	Above Normal	16.94	152%	Wet				
2018	6.08		6.27	45%	Critically Dry	7.52	6.48		42%	Critically Dry	6.44	58%	Dry				
AVERAGE			**13.65**					**16.68**			**11.15**				**15.31**		

DRAFT Appendix 2-A. Annual Precipitation and Water Year-Type at San Bernardino County Flood Control District Climate Stations in the Yucaipa Subbasin

Water Year Ending	Gateway				Live Oak					Triple Falls Creek			Oak Glen			
	3129 (2660')	3129A (2660')	% of Mean	Water Year Type	3239 (2080')	3239A (2281')	3023 (1285')	% of Mean	Water Year Type	3015 (4680')	% of Mean	Water Year Type	3121 (3695')	2800 (2946')	% of Mean	Water Year Type
1953	12.71		84%	Below Normal						10.52	43%	Critically Dry				
1954	16.54		110%	Normal						20.04	82%	Below Normal				
1955	12.74		84%	Below Normal						21.89	89%	Below Normal				
1956	10.82		72%	Dry						18.60	76%	Below Normal				
1957	14.34		95%	Normal						19.04	78%	Below Normal				
1958	28.13		186%	Wet						43.92	179%	Wet				
1959	7.57		50%	Dry						13.85	57%	Dry				
1960	13.17		87%	Below Normal						20.88	85%	Below Normal				
1961	5.48		36%	Critically Dry						11.33	46%	Critically Dry				
1962	20.06		133%	Above Normal						27.10	111%	Above Normal				
1963	10.31		68%	Dry						17.48	71%	Dry				
1964	11.41		76%	Below Normal			7.66	66%	Dry	21.71	89%	Below Normal				
1965	14.92		99%	Normal	10.60		9.59	86%	Below Normal	22.47	92%	Normal				
1966	19.14		127%	Above Normal	13.34		13.47	115%	Above Normal	31.05	127%	Above Normal				
1967	23.80		158%	Wet	17.11		17.52	148%	Above Normal	40.75	166%	Wet				
1968	15.77		105%	Normal	9.72		9.71	83%	Below Normal	20.20	82%	Below Normal				
1969	28.50		189%	Wet	24.72		24.30	210%	Wet	49.90	204%	Wet				
1970	9.51		63%	Dry	7.59		7.42	64%	Dry	17.15	70%	Dry				
1971	12.19		81%	Below Normal	8.99		9.05	77%	Below Normal	19.16	78%	Below Normal				
1972	8.04		53%	Dry	5.98		5.67	50%	Critically Dry	14.33	58%	Dry				
1973	18.16		120%	Above Normal	14.96		14.76	127%	Above Normal	33.31	136%	Above Normal				
1974	11.41		76%	Below Normal	11.27		10.28	92%	Normal	20.54	84%	Below Normal				
1975	16.84		112%	Above Normal	10.36		9.29	84%	Below Normal	22.73	93%	Normal				
1976	17.44		116%	Above Normal	13.17		12.15	108%	Normal	26.73	109%	Normal				
1977	13.31		88%	Below Normal	11.73		9.74	92%	Normal	20.81	85%	Below Normal				
1978	32.91		218%	Wet	24.46		21.67	197%	Wet	52.09	213%	Wet				
1979	20.40		135%	Above Normal	18.67		16.77	152%	Wet	33.77	138%	Above Normal				
1980		19.28	128%	Above Normal	22.14		22.90	193%	Wet	46.38	189%	Wet				
1981		9.43	62%	Dry	7.41		6.89	61%	Dry	14.90	61%	Dry	14.68		81%	Below Normal
1982		19.21	127%	Above Normal	14.90		14.46	126%	Above Normal	33.37	136%	Above Normal	28.00		154%	Wet
1983		31.48	209%	Wet	25.39		24.16	212%	Wet	50.38	206%	Wet	42.51		234%	Wet
1984		9.56	63%	Dry	5.97		4.99	47%	Critically Dry	18.80	77%	Below Normal	15.90		88%	Below Normal
1985		13.70	91%	Normal	9.02		8.72	76%	Below Normal	22.02	90%	Below Normal	20.70		114%	Above Normal
1986		15.33	102%	Normal	11.24		9.25	88%	Below Normal	26.00	106%	Normal	19.00		105%	Normal
1987		12.52	83%	Below Normal	7.90		7.79	67%	Dry	19.29	79%	Below Normal	5.75		32%	Critically Dry
1988		14.04	93%	Normal	12.49		11.18	101%	Normal	21.46	88%	Below Normal	10.07		55%	Dry
1989		10.76	71%	Dry	9.38		8.08	75%	Dry	17.82	73%	Dry	16.40		90%	Normal
1990		9.71	64%	Dry	7.19		7.21	62%	Dry	17.71	72%	Dry	15.80		87%	Below Normal
1991		17.52	116%	Above Normal	13.95		13.34	117%	Above Normal	26.92	110%	Normal	26.55		146%	Above Normal
1992		19.37	128%	Above Normal	14.58		14.96	126%	Above Normal	30.78	126%	Above Normal	27.72		153%	Wet
1993		34.60	229%	Wet	26.96		25.57	225%	Wet	57.96	237%	Wet	47.23		260%	Wet

DRAFT Appendix 2-A. Annual Precipitation and Water Year-Type at San Bernardino County Flood Control District Climate Stations in the Yucaipa Subbasin

Water Year Ending	Gateway				Live Oak					Triple Falls Creek			Oak Glen			
	3129 (2660')	3129A (2660')	% of Mean	Water Year Type	3239 (2080')	3239A (2281')	3023 (1285')	% of Mean	Water Year Type	3015 (4680')	% of Mean	Water Year Type	3121 (3695')	2800 (2946')	% of Mean	Water Year Type
1994		10.00	66%	Dry	11.90		10.06	94%	Normal	18.76	77%	Below Normal	18.19		100%	Normal
1995		14.70	97%	Normal	15.76		20.49	155%	Wet	57.92	236%	Wet	46.83		258%	Wet
1996		10.89	72%	Dry	0.65		8.08	37%	Critically Dry	20.04	82%	Below Normal	16.40		90%	Normal
1997		16.06	106%	Normal	9.03		10.77	85%	Below Normal	30.39	124%	Above Normal	22.92		126%	Above Normal
1998		24.70	164%	Wet	17.22		22.29	169%	Wet	49.46	202%	Wet	44.58		246%	Wet
1999		7.63	51%	Dry	6.30		6.46	55%	Dry	11.32	46%	Critically Dry	14.61	6.76	59%	Dry
2000		11.10	74%	Dry	5.68		7.41	56%	Dry	17.12	70%	Dry	14.64	12.20	74%	Dry
2001		9.92	66%	Dry	9.96		10.38	87%	Below Normal	11.24	46%	Critically Dry	17.23	12.12	81%	Below Normal
2002		5.66	38%	Critically Dry	3.97		3.35	31%	Critically Dry	6.72	27%	Critically Dry	8.60	4.52	36%	Critically Dry
2003		19.47	129%	Above Normal	16.45		12.18	122%	Above Normal	14.28	58%	Dry	29.20	14.36	120%	Above Normal
2004		11.84	78%	Below Normal	11.58		9.16	89%	Below Normal	18.39	75%	Below Normal	9.57	10.08	54%	Dry
2005		32.70	217%	Wet			24.43	209%	Wet	34.14	139%	Above Normal		38.28	211%	Wet
2006		13.14	87%	Below Normal		10.30	9.52	85%	Below Normal	22.58	92%	Normal		13.72	76%	Below Normal
2007		6.56	43%	Critically Dry		4.13	3.31	32%	Critically Dry	9.71	40%	Critically Dry		5.48	30%	Critically Dry
2008		14.67	97%	Normal		11.93	9.46	91%	Normal	27.54	112%	Above Normal		16.20	89%	Below Normal
2009		12.11	80%	Below Normal		11.35	8.91	87%	Below Normal	18.11	74%	Dry		11.52	63%	Dry
2010		18.79	125%	Above Normal		17.25	15.12	138%	Above Normal	29.72	121%	Above Normal		18.15	100%	Normal
2011		25.09	166%	Wet		22.33	17.38	170%	Wet	36.82	150%	Wet		24.96	138%	Above Normal
2012		11.80	78%	Below Normal		8.84	4.34	56%	Dry	15.13	62%	Dry		11.68	64%	Dry
2013		5.25	35%	Critically Dry		8.82	1.54	44%	Critically Dry	15.69	64%	Dry		9.56	53%	Dry
2014		4.45	29%	Critically Dry		6.92	2.08	38%	Critically Dry	14.07	57%	Dry		7.80	43%	Critically Dry
2015		12.49	83%	Below Normal		10.37	2.72	56%	Dry	20.54	84%	Below Normal		11.56	64%	Dry
2016		11.11	74%	Dry		8.61	1.70	44%	Critically Dry	18.80	77%	Below Normal		11.51	63%	Dry
2017		17.18	114%	Above Normal		16.90	14.42	134%	Above Normal	16.04	65%	Dry		17.56	97%	Normal
2018		6.47	43%	Critically Dry		5.53	5.43	47%	Critically Dry	7.44	30%	Critically Dry		7.36	41%	Critically Dry
AVERAGE		**15.09**				**11.69**				**24.50**				**18.15**		

DRAFT Appendix 2-A. Annual Precipitation and Water Year-Type at San Bernardino County Flood Control District Climate Stations in the Yucaipa Subbasin

Water Year Ending	Basin Wide		
	% of Mean	Avg. Rainfall (inches)	Water Year Type
1953	62%	11.24	Dry
1954	103%	17.36	Normal
1955	88%	14.09	Below Normal
1956	74%	11.51	Dry
1957	87%	14.07	Below Normal
1958	178%	26.82	Wet
1959	56%	8.43	Dry
1960	92%	14.11	Normal
1961	41%	5.92	Critically Dry
1962	121%	18.59	Above Normal
1963	86%	13.51	Below Normal
1964	78%	10.90	Below Normal
1965	91%	12.39	Normal
1966	122%	16.93	Above Normal
1967	165%	22.94	Wet
1968	96%	13.79	Normal
1969	207%	30.04	Wet
1970	64%	9.04	Dry
1971	78%	11.29	Below Normal
1972	52%	7.24	Dry
1973	127%	18.16	Above Normal
1974	81%	11.66	Below Normal
1975	98%	14.06	Normal
1976	105%	15.00	Normal
1977	87%	12.47	Below Normal
1978	206%	29.36	Wet
1979	143%	21.15	Above Normal
1980	167%	23.99	Wet
1981	64%	9.70	Dry
1982	130%	18.98	Above Normal
1983	213%	31.75	Wet
1984	64%	8.96	Dry
1985	88%	12.76	Below Normal
1986	98%	14.18	Normal
1987	65%	9.26	Dry
1988	86%	12.93	Below Normal
1989	75%	11.36	Below Normal
1990	66%	9.31	Dry
1991	120%	18.32	Above Normal
1992	127%	19.12	Above Normal
1993	231%	34.51	Wet

DRAFT Appendix 2-A. Annual Precipitation and Water Year-Type at San Bernardino County Flood Control District Climate Stations in the Yucaipa Subbasin

Water Year Ending	Basin Wide		
	% of Mean	Avg. Rainfall (inches)	Water Year Type
1994	83%	12.69	Below Normal
1995	191%	27.97	Wet
1996	68%	9.74	Dry
1997	114%	16.16	Above Normal
1998	192%	27.71	Wet
1999	58%	8.78	Dry
2000	62%	8.91	Dry
2001	61%	9.10	Dry
2002	30%	4.76	Critically Dry
2003	114%	18.07	Above Normal
2004	72%	9.81	Dry
2005	196%	31.08	Wet
2006	84%	11.50	Below Normal
2007	37%	4.98	Critically Dry
2008	98%	13.57	Normal
2009	80%	11.13	Below Normal
2010	121%	16.90	Above Normal
2011	158%	22.24	Wet
2012	68%	9.55	Dry
2013	60%	8.32	Dry
2014	51%	7.21	Dry
2015	81%	11.22	Below Normal
2016	71%	9.62	Dry
2017	117%	17.75	Above Normal
2018	44%	6.40	Critically Dry
AVERAGE		**15.86**	= weighted average

Appendix 2-B

Information from CalGEM

DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES

CHECK LIST – WellStats ORPHAN WELL ENTRY PROJECT

API# 071-00041 Well Name/# 1 Operator ~~[redacted]~~ Colan Development Corp. Std.

PDOX	**Entry Date -** July and August 2003	**Initials -** Dave Curtis
WellStats	**Entry Date -** 5/10/05	**Initials -** CO
Map and Map Work	**Entry Date -** 5/26/2005 **Map #** W1-7	**Initials -** TH

- **Return Files(s) to Christina when Mapping is complete.**

(01745)

STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL AND GAS
SIXTH FLOOR
629 SOUTH HILL STREET
LOS ANGELES, CALIFORNIA

LOS ANGELES, CALIF. MAY 2 630 PM 1933 ARCADE STA.

Colan Development Corp. Ltd.,

~~317 I. W. Hellman~~ Bldg.,

Los ~~Angeles~~, Cal.

8346

Los Angeles, Calif.
REASON FOR NON-DELIVERY CHECKED
Moved-No Address ____ Refused ____
Unknown at Address ____
No Such Number ____ Deceased ____
Time Received-No Order ____
Carrier's Initials ____ Route No. 2

Attention Mr. Bert[illegible] Colen

TURN ~~General~~ Manager.

WRIT[illegible]

CLAIMED

LOS ANGELES MAY 25 1933 CALIF.

BEVERLY HILLS, CALIF. MAY 4 PM 1933

629 South Hill Street
Los Angeles, California
May 2, 1933.

Colan Development Corp. Ltd.,
317 I. W. Hellman Building,
Los Angeles, Cal.

Attention Mr. Bert N. Colan,
General Manager.

Gentlemen:

Your attention is directed to the fact that this Division has not received log, history and core record covering operations at your well No. 1, Sec. 25, T. 1 S., R. 2 W., San Bernardino County.

Please file these records in duplicate on the enclosed forms as soon as possible.

Yours truly,

Deputy Supervisor.

CLB:EM3

STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES

DIVISION OF OIL AND GAS

R. D. BUSH
STATE OIL AND GAS SUPERVISOR

E. HUGUENIN, DEPUTY

629 South Hill Street
Los Angeles, California
May 2, 1933.

Colan Development Corp. Ltd.,
317 I. W. Hellman Building,
Los Angeles, Cal.

Attention Mr. Bert N. Colan,
General Manager.

Gentlemen:

Your attention is directed to the fact that this Division has not received log, history and core record covering operations at your well No. 1, Sec. 25, T. 1 S., R. 2 W., San Bernardino County.

Please file these records in duplicate on the enclosed forms as soon as possible.

Yours truly,

E. Huguenin

Deputy Supervisor.

FORM 100. 75066 12-29 20M
CALIFORNIA STATE PRINTING OFFICE

SUBMIT LOG IN DUPLICATE
FILL THIS BLANK IN WITH TYPEWRITER. WRITE ON ONE SIDE OF PAPER ONLY

STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES

DIVISION OF OIL AND GAS

DIVISION OF OIL AND GAS
RECEIVED
FEB 9 - 1932
LOS ANGELES, CALIFORNIA

LOG OF OIL OR GAS WELL

FIELD Yucaipa Valley San Bernadino Cty COMPANY Colan Development Corp Ltd

Sec. 25, T. ____, R. 2,1 South S.B. B. & M., Elevation 2700 ft Well No. 1.

In compliance with the provisions of Chapter 718, Statutes of 1915, as amended, the information given herewith is a complete and correct record of the present condition of the well and all work done thereon, so far as can be determined from all available records.

Signed Burt Y Colan

Date February 8th, 1932. Title Pres.
(President, Secretary or Agent)

The summary on this page is for the ORIGINAL condition of the well

OIL SANDS

1st sand from 2163 to 2165. 4th sand from ____ to ____
2d sand from ____ to ____ 5th sand from ____ to ____
3d sand from ____ to ____ 6th sand from ____ to ____

IMPORTANT WATER SANDS

1st sand from 340 to 390 3d sand from ____ to ____
2d sand from ____ to ____ 4th sand from ____ to ____

CASING RECORD

Size of Casing	Where Landed	Where Cut	Weight Per Foot	Threads Per Inch	Kind of Shoe	Make of Casing	Cemented		
							Yes	No	Number of Sacks
11/5/4"	85 ft	-	60 lbs	10	-	Standard	Yes	-	30.

CEMENTING OR OTHER SHUT-OFF RECORD

Casing, Size	Sacks	Time Set	Method	Test and Result (Give water level and bailing results)

PLUGS AND ADAPTERS

Heaving Plug—Material ____ Length ____ Where set ____

Adapters —Material ____ Size ____

TOOLS

Rotary Tools were used from nil- ft. to 2168. ft.

Cable Tools were used from ____ ft. to ____ ft.

PERFORATIONS

State clearly whether a machine was used or casing was drilled in shop

From	To	Size of Holes	Number of Rows	Holes Per Foot	Machine—Shop
ft.	ft.				
ft.	ft.				
ft.	ft.				
ft.	ft.				
ft.	ft.				

Thirty days after completion well produced ____ barrels of oil per day.

The gravity of oil was ____ degrees Baumé. Water in oil amounted to ____ per cent.

NAMES OF DRILLERS

H.K.Weber.
J.S.Page.
Frank Dunn.

NAMES OF TOOL DRESSERS

Date drilling started June 1931. Date well was completed ____

FORMATIONS PENETRATED BY WELL

DEPTH TO		Thickness	Name of Formation
Top of Formation	Bottom of Formation		

FORM 103. 76346 7-30 10M
CALIFORNIA STATE PRINTING OFFICE

STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES

DIVISION OF OIL AND GAS

DIVISION OF OIL AND GAS
RECEIVED
FEB 9 - 1932
LOS ANGELES, CALIFORNIA

History of Oil or Gas Well

FIELD YUCAIPA VALLEY, San Bernadino County COMPANY Colan Development Corp Ltd,

Sec. 25, T. ____, R. Two 1 South S.B. B. & M., Well No. 1.

Signed Burt Y Colan

Date February 8th 1932. Title Pres.

President, Secretary or Agent

It is of the greatest importance to have a complete history of the well. Please state in detail the dates of redrilling, together with the reason for the work and its results. If there were any changes made in the casing, state fully, and if any casing was "sidetracked" or left in the well, give its size and location. If the well has been dynamited, give date, size, position, and number of shots. If plugs or bridges were put in to test for water, state kind of material used, position, and results of pumping or bailing.

We took over the above mentioned well about June 1931, and cemented 85 feet of 11¾ surface casing with a 11¾ G.P. Blow out preventor attached at top. The bottom of hole at that time was approx 1980 feet with 375 feet of 3" drill pipe and bit at bottom, We cemented hole at approx 1450 ft and set 6-5/8" Whipstock and commenced drilling from that point, at 1975 ft set another Whipstock to sidetrack more junk at bottom, commenced drilling again to 2125 ft where we twisted off drill, pipe, leaving appox 100 ft drill pipe with collar and hughes bit, tried to fish out same but top of fish buried itself in a cavity , cemented up fish with 65 sacks of cement and started sidetracking, passed up fish and bottom of hole is now 2168 ft,.

Hard formation all the way with a few softer streaks of conglomerate, ### black lime, and brown shale hard shells and rock caps of country rock, considerable gas showings at 1750 ft and at intervals down to bottom of hole, had to carry very heavy mud at all times to hold down gas pressure, considerable trouble was incountered going in and out of hole from bridgeing omer at the various gas stratas, the hole was drilled with 9½" to 300 ft, and 7-5/8" Hughes Rock bit to bottom.

FORM 101-A. 82953 2-31 20M
CALIFORNIA STATE PRINTING OFFICE

SUBMIT IN DUPLICATE
FILL THIS BLANK IN WITH TYPEWRITER. WRITE ON ONE SIDE OF PAPER ONLY

STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES

DIVISION OF OIL AND GAS

CORE RECORD OF OIL OR GAS WELL

DIVISION OF OIL AND GAS
RECEIVED
FEB 9 - 1932
LOS ANGELES, CALIFORNIA

FIELD Yucaipa Valley COMPANY Colan Development Corp Ltd.

Sec. 25, T. ____, R 2, 1 South S.B. & M., Elevation 2700 Well No. 1.

In compliance with the provisions of Section 18, Chapter 718, Statutes of 1915, as amended, the information given herewith is a complete and correct record of all cores taken in this well to the depth on the accompanying log.

Signed Burt J Colan

Date February 8th 1932. Title Pres.
(President, Secretary or Agent)

DATE	MAKE OF BARREL	SIZE OF BARREL	FROM (DEPTH)	TO (DEPTH)	CORE RECOVERED	DESCRIPTION OF CORE	ETHER TEST	CONDITION OF CORE
1931.								
10-25	Hughes	5-5/8	2001	2005	2 ft	Hard bn shale, blk lime, rock		broken
10-30	"	"	2028	2031	1½ "	Brown shale, lime, country rock		
11-23	"	"	2077	2079	1 "	Greenish schist, Hard rk,		
12-19	"	"	2112	2115	1 "	Brown & Gray shale, & schist		
1932								
1-22	"	"	2147	2149	1¾ "	Hard formation, black lime,		
2-5	"	"	2158	2161	2 "	Brown Shale, streak oil sand,	slight cut	
2-6	"	"	2161	2164	2½ "	" : " black hard formation		

98

R. D. BUSH
STATE OIL AND GAS SUPERVISOR

STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL AND GAS
FERRY BUILDING

SAN FRANCISCO

DIVISION OF OIL AND G
RECEIVED
NOV 21 1931
LOS ANGELES, CALIFORNI

November 20, 1931.

Mr. E. Huguenin,
Deputy Supervisor,
Los Angeles, Cal.

Dear Sir:

Mail addressed to

Lon Bernard Jones Co

J. E. Grey, Agent,
Colan Development Corp., Ltd.,
Yucaipa, Cal.

has been returned by the post office with the notation "Moved, left no address".

Shall I request another appointment?

Yours truly,

R. D. Bush

State Oil and Gas Supervisor.

CALIFORNIA WELCOMES THE WORLD—TENTH OLYMPIAD 1932

629 South Hill Street
Los Angeles, California
July 17, 1931.

Mr. R. D. Bush,
State Oil and Gas Supervisor,
San Francisco, California.

Dear Sir:

I am informed that Yucaipa Oil Company, Ltd., well No. 1, Sec. 25, T. 1 S., R. 2 W., S. B. B. & M., San Bernardino County, was transferred to Fred Gray on February 1, 1931. On April 22, 1931, the well was transferred to Mr. F. H. Bowers and on May 15, 1931, the well was transferred to Colan Development Corporation, Ltd.

This information was contained in a letter dated July 9, 1931, from Colan Development Corporation, and a letter dated June 23, 1931, from Fred H. Gray, and confirmed in a conversation with Mr. Bowers and Mr. Bert Colan. Our records have been changed accordingly.

Request for the designation of agent should be addressed to Colan Development Corporation, Ltd., 317 I. W. Hellman Building, Los Angeles, Cal.

Yours truly,

Deputy Supervisor.

Corrections Made as Follows	By Whom
Weekly Summaries	CLB / EHS
121	13
Elev. and Loc. Cards	
Production Reports	emed
Well Records: Folders	
Well Records: Reports	off
Pog Models	
Graphics	(copy sent 66
Field Maps	

B
1.20.31

D. Leslie Lord, Sec'y-Treas.
Thos. L. Colangelo, Vice-Pres.

COLAN DEVELOPMENT CORPORATION, Ltd.
BERT N. COLAN, Gen'l Mgr.
317 I. W. Hellman Bldg.
LOS ANGELES, CALIF.

Field Address
DIVISION OF OIL AND GAS

RECEIVED
JUL 10 1931
LOS ANGELES, CALIFORNIA

July 9th, 1931.

Division of Oil & Gas
of the State of California
629 South Hill Street
Los Angeles California

Gentlemen:

In response to your request this will advise you that on May 15th, 1931, the Colan Development Corporation succeeded to the rights of F. H. Bowers on lease covering ground upon which an oil well was formerly attempted by Fred Gray, on a portion of Section 25 Twp. 1 S. Range 2 West SBM at Yucaipa California.

On account of steel which was twisted off at the -time, the Colan Development Corporation was obliged to offset and drill an entirely new hole which is now at a depth of approximately 1950 feet, and is at present encountering very hard formation, and the drilling is very slow.

The company contempletes drilling to a depth of 2500 feet at which depth it has been estimated by geologists, oil should be encountered in commercial quantities.

Trusting this information meets with your request and assuring you of our co-operation, we are

BLC/ B

Very truly yours,

Colan Development Corporation

By Bert N Colan

Transf. from Fred Gray to F. H. Bowerss
April 22, 1931
Transf. from Yucaipa to Fred Gray on Feb. 1, 1931

DIVISION OF OIL AND GAS
RECEIVED
JUN 26 1931
LOS ANGELES, CALIFORNIA

June 23 1931.

E.Huguenin Esq;

Div.of Oil and Gas;

State of California;

Dear Sir;

We would like to inform you that the well in Sec.25 T.Township/1 S. Rge 2 w.S.B.B.& M San Bernardino County,is now being drilled by Colin Development Co.whose office is 314 I.W.Hellman bldg Los Angeles.

They will be glad to comply with any requests you may make re information that the law requires of them.

Yours Respectfully,

Fred H.Gray.

Fred H.Gray.
234 E.Laurel
Compton Calif.

FORM 100. 73066 12-29 20M
CALIFORNIA STATE PRINTING OFFICE

Cyclan Development Corp. Ltd. #1

SUBMIT LOG IN DUPLICATE
FILL THIS BLANK IN WITH TYPEWRITER. WRITE ON ONE SIDE OF PAPER ONLY

STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES

DIVISION OF OIL AND GAS

DIVISION OF OIL AND GAS
RECEIVED
JAN 13 1931
LOS ANGELES, CALIFORNIA

LOG OF OIL OR GAS WELL

Yucaipa Oil Co. Ltd.

FIELD (Yucaipa) San Bernardino County COMPANY Fred H. Gray

Sec. 25, T. 1 S, R. 2, West San Bernardino B. & M., Elevation 2500 Well No. 1

In compliance with the provisions of Chapter 718, Statutes of 1915, as amended, the information given herewith is a complete and correct record of the present condition of the well and all work done thereon, so far as can be determined from all available records.

Signed Fred H Gray

Date Jan. 6. 1931

Title Operator
Reference to file of d(President, Secretary or Agent)

The summary on this page is for the ORIGINAL condition of the well.

Oil Sands	Cheat Section	Cards	Forms 114	Forms 121
1st sand from ____ to ____	None			
2d sand from ____ to ____				
3d sand from ____ to ____				
4th sand from ____ to ____				
5th sand from ____ to ____				
6th sand from ____ to ____				

Important Water Sands

1st sand from ____ to ____ 3d sand from ____ to ____
2d sand from ____ to ____ 4th sand from ____ to ____

Casing Record

Size of Casing	Where Landed	Where Cut	Weight Per Foot	Threads Per Inch	Kind of Shoe	Make of Casing	Cemented Yes	Cemented No	Cemented Number of Sacks
No Casing Set									

Cementing or Other Shut-off Record

Casing, Size	Sacks	Time Set	Method	Test and Result (Give water level and bailing results)
				None

Plugs and Adapters

Heaving Plug—Material None Length ____ Where set ____

Adapters —Material " Size ____

Tools

Rotary Tools were used from 0 ft. to 2000 ft.

Cable Tools were used from None ft. to ____ ft.

Perforations

State clearly whether a machine was used or casing was drilled in shop

From	To	Size of Holes	Number of Rows	Holes Per Foot	Machine—Shop
ft.	ft.	None			
ft.	ft.				
ft.	ft.				
ft.	ft.				
ft.	ft.				

Thirty days after completion well produced ____ barrels of oil per day.

The gravity of oil was ____ degrees Baumé. Water in oil amounted to ____ per cent.

Names of Drillers
H. V. Wilson
J. Galantine
W. T. Jones.

Names of Tool Dressers

Date drilling started Oct. 4. 1928.

Date well was completed ____

Formations Penetrated by Well

Depth to Top of Formation	Depth to Bottom of Formation	Thickness	Name of Formation

FORM 103. 72349 7-30 10M
CALIFORNIA STATE PRINTING OFFICE

STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES

DIVISION OF OIL AND GAS

DIVISION OF OIL AND GAS
RECEIVED
JAN 3 - 1931
LOS ANGELES, CALIFORNIA

History of Oil or Gas Well

FIELD SAN BERNARDINO COUNTY COMPANY Yucaipa Oil Co. Ltd

Sec. 25, T. 1 So., R. 2 W., S. B. B. & M., Well No. One (1)

Signed Fred H Gray

Date December 30-19-30 Title

President, Secretary or Agent

It is of the greatest importance to have a complete history of the well. Please state in detail the dates of redrilling, together with the reason for the work and its results. If there were any changes made in the casing, state fully, and if any casing was "side-tracked" or left in the well, give its size and location. If the well has been dynamited, give date, size, position, and number of shots. If plugs or bridges were put in to test for water, state kind of material used, position, and results of pumping or bailing.

Make	Model	Cross section	Cards	114	

Hole shot at 1340 feet. Steel in the hole. Unknown.
100 lbs. of 80% Gelatine.
Hole shot at 1576 feet. Rotary disc lost in hole. Tried to break disc to pieces. Failed.
100 lbs. of 80% Gelatine used.
Hole shot second time at 1576 to break up disc bit.
100 lbs. of 80% Gelatine and 15 quarts of nitro-glycerin. 30 ft. combination shot. Broke up disc bit and fished same out of hole.
Hole shot 1926 feet. Boulder riding bit, shot same out of way.
200 lbs. of 80% Gelatine.
78 feet of 3" drill pipe and drill collar were side-tracked at 1839 to 1927. Never touched same while side-tracking.
String of 3" Drill Pipe Froze 60 ft. off bottom - Backed out all but 360 ft. which is in Hole at present time.

90

DIVISION OF OIL AND GAS
RECEIVED
JAN 3 - 1931
LOS ANGELES, CALIFORNIA

LOG OF THE GRAY WELL NO. 1

Section 25, Township 1 S, R 2 W.
San Bernardino B and M.

0 to 18 ft.	Surface soil	748-753 ft.	Gray sand,
18 - 35	Conglomerate		streaks of lime
35 - 52	Sand stone	753-758	Tough shale
52 - 56	Hard Sand	758-763	Conglomerate
56 - 70	Conglomerate	763-767	Lime
70 - 90	Gray sand	767-775	Conglomerate
90 - 106	Gravel & Boulders	775-776	Shell
106- 129	Red clay	776-784	Hard sand, gas
129- 159	Sand Gravel		at this depth
159- 188	Blue shale	784-791	Conglomerate
188- 237	Sand & Boulders	791-798	Tough shale
237- 324	Hard sand	798-806	Conglomerate
324- 329	Sand & Gravel	806-815	Sandy shale
329- 333	Hard sand	815-820	Hard sandy shale
333- 348	Sandy shale	Gas blow plugged	drill collar 11
348- 378	Sand & Boulders	ft. while making	con.
378- 397	Hard sand	820-830	Hard sand, streaks
397- 430	Conglomerate		of lime
430- 465	Sand shale	830-839	Sandy shale, gas
465- 473	Hard shale		showing
473- 505	Sticky shale	839-840	Shell
505- 536	Conglomerate	840-849	Sticky shale,
536- 551	Sand shale		streaks of sand
551- 552	Shell	849-859	Conglomerate
552- 576	Conglomerate	859-860	Shell
576- 577	Shell	860-864	Hard sand
577- 580	Sand	864-868	Conglomerate
580- 581	Shell	868-874	Lime
581- 585	Hard sand	874-877	Tough Shale
585- 586	Shell	877-879	Shell
586- 591	Conglomerate	879-890	Conglomerate
591- 596	Tough shale	890-904	Shale
596- 600	Hard sand	904-921	Sandy shale
600- 611	Conglomerate	921-922	Shell
611- 612	Shell	922-929	Hard sand
612- 615	Sandy shale	929-938	Sandy shale
615- 620	Brown shale	938-944	Conglomerate
620- 623	Gas sand	944-951	Hard sand
623- 633	Tough shale	951-953	Shell
633- 636	Sandy shale	953-960	Conglomerate
636- 638	Shell	960-961	Shell
638- 645	Hard sand shale	961-965	Tough shale
645- 650	Conglomerate	965-966	Shell
650- 654	Lime	966-978-	Conglomerate
654- 664	Tough shale	978-983	Sticky shale
664- 678	Sandy shale	983-984	Shell
678- 682	Hard sand	984-986	Conglomerate
682- 683	Shell	986-992	Gray sand
683- 695	Lime	992-1004	Hard sand
695- 699	Tough shale	1004-1007	Blue shale,
699- 709	Hard sand		streaks of lime
709- 712	Shell	1007-1010	Sand streaked
712- 718	Conglomerate		with lime
718- 726	Sandy shale	1010-1014	Shell with lime
726- 730	Hard sand, Lime Streaks	1014-1018	Hard lime
730- 748	Sand shale	1018-1028	Conglomerate

85

1028-1038 ft.	Sandy shale
1038-1050	Conglomerate
1050-1053	Shell
1053-1060	Hard sandy shale
1060-1061	Shell
1061-1068	Conglomerate
1068-1080	Sandy shale
1080-1090	Hard sand
1090-1098	Conglomerate
1098-1100	Shell
1100-1112	Lime
1112-1113	Shell
1113-1127	Conglomerate
1127-1128	Shell
1128-1137	Lime conglomerate
1137-1139	Lime
1139-1157	Sandy shale
1157-1162	Hard sand
1162-1165	Hard sandy shale
1165-1178	Conglomerate
1178-1183	Hard sandy shale
1183-1191	Tough shale
1191-1192	Shell
1192-1204	Lime
1204-1208	Conglomerate
1208-1210	Tough shale
1210-1221	Conglomerate
1221-1231	Sandy shale,lime
1231-1238	Lime
1238-1243	Shale
1243-1258	Lime
1258-1261	Shale
1261-1304	Lime
1304-1311	Coring no recovery
1311-1340	Shell
1340-1341	Hard shell
1341-1349	Shell
1349-1350	Break in formation
1350-1366	Lime and sand
1366-1367	Break in formation
1367-1383	Lime
1383-1387	Shale with change
1387-1393	Blue shale
1393-1395	Sandy shale
1395-1396	Shell
1396-1400	Sand shale
1400-1401	Shell
1401-1408	Shell with break
1408-1409	Shale
1409-1434	Lime and streaks of shale
1434-1449	Lime conglomerate
1449-1468	Lime streaked with shale
1468-1501	Lime
1501-1528	Lime streaked shale
1528-1548	Lime
1548-1555	Blue shale
1555-1558	Hard sand
1558-1560	Lime
1560-1568 ft.	Blue shale
1568-1579	Hard sand, shale streaked
1579-1581	Lime and hard sand
1581-1582	Lime
1582-1585	Hard sand
1585-1588	Lime stone
1588-1589	Hard sand and lime
1589-1592	Lime
1592-1594	Lime, shale, some shells
1594-1602	Blue shale & lime
1602-1604	Hard sand
1604-1607	Brown shale
1607-1611	Hard sand, gray color with thin breaks
1611-1617	Hard sand, gas showing
1617-1618	Hard sand, marine shells
1618-1629	Brown shale
1629-1634	Shell
1634-1644	Hard & soft streaks
1644-1656	Hard shells with shale breaks
1656-1657	Break and soft
1657-1662	Hard sand shale, Streak brown sandy shale
1662-1678	Streaked thin shell
1678-1694	Hard sand
1694-1696	Soft break in formation
1696-1702	Blue shale
1702-1704	Lime & shells
1704-1715	Blue shale streaked hard sand, sticky shale.
1715-1730	Sticky Blue shale streaked hard sand
1730-1738	Blue shale
1738-1742	Shell
1742-1746	Lime streaked
1746-1750	Shell
1750-1767	Lime shale
1767-1792	Blue shale streaked with lime.
1792-1795	Hard gray sand with sofe breaks
1795-1806	Hard sand
1806-1823	Brown shale with hard sand streaks
1823-1828	Brown shale streaks with hard sand
1828-1838	Brown shale
1838-1844	Brown shale and layers of hard sand
1844-1855	Hard sand gray

1855-1860 ft.	Hard brown shale with thin shells
1865-1873	Shell
1873-1875	Hard gray sand - good gas pressure
1875-1878	Hard sand, gas showing in ditch
1878-1883	Hard sand - hard fine sand
1883-1886	Hard sand, sea shells, gas below shells
1886-1888	Hard sand, thin layers of B shale
1888-1891	Conglomerate - little gas
1891-1892	Shell
1892-1894	Lime streaks blue shale
1894-1902	Shell
1902-1903	Sea shells streaks green shale
1903-1904	Hard shell
1904-1905	Shell
1905-1906	Shell thin break. Good gas showing
1906-1909	Shell
1909-1911	Shell broke to oil sand Gas
1911-1913	Shell-Gas on ditch
1913-1915	Shell
1915-1916	Hard conglomerate-sea - shells
1916-1918	Conglomerate hard sand
1918-1923	Hard sand
1923-1924	Shell
1924-1926	Shale
1926-1929	Shell
1929-1935	Shell
1935-1937	Shell and hard sand
1937-1938	Shale
1938-1939½	Brown shale
1939½-1940	Shell
1940-1941	Shale to shell
1941-1943	Shell
1943-1949	Shell lime streaked brown shale
1949-1959	Lime streaked blue shale
1959-1963	Shell and shale
1963-1970	Shell
1970-1972	Break
1972-1975	Blue shale
1975-1976	Black Lime
1976-1982	Blue shale shells intermittent black lime
1982-1988	Shale and shells
1988-1991	Blue sand shale
1991-1992	Shell
1992-1997	Tough brown shale - good cut in this shale

611 New Orpheum Building
Los Angeles
December 30, 1930

Mr. R. D. Bush,
State Oil and Gas Supervisor,
San Francisco, Calif.

Dear Sir:

Fred H. Gray well No. 1, Sec. 25, T. 1 S., R. 2 W., San Bernardino County, was transferred to Yucaipa Oil Company, Limited, 519 Walter P. Story Building, Los Angeles, California, effective November 17, 1930. This information was contained in a letter received from Fred H. Gray dated December 19, 1930, and confirmed in a letter from Yucaipa Oil Company, Limited, dated December 26, 1930. We are, therefore, changing our records accordingly. Please request Yucaipa Oil Company, Limited, to appoint an agent.

Yours truly,

Deputy Supervisor.

EH-GH

Wallace Collins

Corrections Made as Follows	By Whom
Weekly Summaries	B
131	
Elev. and Loc. Cards	
Production Reports	✓ EHG
Well Records: Forms	
Well Records: Reports	✓ EHG
Peg Models	
Graphics	✓ E.J.K.
Field Maps	

W.C. Book - E.J.K.
12/31/30

YUCAIPA OIL COMPANY LIMITED.
519 Walter P Story Building,
Los Angeles. Calif:
December 26th,1930.

DIVISION OF OIL AND GAS
RECEIVED
DEC 30 1930
LOS ANGELES, CALIFORNIA

E Huggenin Esq,
Division of Oil & Gas,
611 New Orpheum Building,
Los Angeles. Calif:

Dear Sir,

Replying to your letter of the 22nd Inst,re Gray Well.

This is being drilled by the Yucaipa Oil Company Limited, of which I am the General Manager, and was transferred to us on November 17th.

I have had the property surveyed, and will file a corrected location within the next few days.

We were compelled to sidetract a junked hole at 1400 feet, so will give your department a correct log from that depth.

All notices for the present will be received at the above address.

Yours very truly,

WGT/JHS.

Oct. 9,1928.

DIVISION OF MINES & MINING
RECEIVED
OCT 10 1928
Department of Petroleum and Gas
LOS ANGELES, CALIFORNIA

Division of Mines and Mining,
611 New Orpheum Bldg.,
Los Angeles,Calif.

Gentlemen:

Referring to your letter of Oct. 3rd, concerning the drilling operations on the Clyde Ranch in Section 25, Twp. I, S. R 2 W. S.B.B & M., I beg to advise you that I am assuming all the responsibility in connection with these operations and will be guided in my operations by the matters referred to in your communication of Sept. 21st, to my attorney John C.Miles.

Any further information I can furnish you from time to time I will be glad to do so. In the meantime,I remain

Yours very truly,

F.HG:M

611 New Orpheum Bldg.,
Los Angeles
September 13, 1928.

Mr. R. D. Bush,
State Oil and Gas Supervisor,
San Francisco, California.

Dear Sir:

The well carried in our records under the name of J. W. McPhearson well No. 1, Sec. 25, T. 1 S., R. 2 W., S.B.B.& M., San Bernardino County, was transferred on August 24, 1925 to Mr. Fred H. Gray whose address is Box 263, Compton, California.

This information was contained in a letter received from J. W. McPhearson dated September 10, 1928.

We are therefore changing our records accordingly. Please request Mr. Gray to appoint an agent.

Yours truly,

EH-MC

Deputy Supervisor.

Corrections Made as Follows		By Whom
Weekly Summaries		
121	✓	H
Elev. and Loc. Cards		
Production Reports		
Well Records	Folders ✓	E.A.A.R.
	Reports	
Peg Models		
Graphics		
Field Maps W.C.	✓	F.L.C.

W. C. BK.
F. L. C.

FORM 111. 53572 8-27 5M
CALIFORNIA STATE PRINTING OFFICE

STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES

DIVISION OF MINES AND MINING

PETROLEUM AND GAS

Report on Proposed Operations

No. P-1-16285

Los Angeles, Cal. Oct. 25, 1927

Mr. O. W. McPhearson

Yucaipa, Cal.

Agent for W. McPHEARSON Company

DEAR SIR: Should be J.

Your proposal to drill Well No. 1

Section 25, T 1 S, R 2 W, S.B. B. & M., — Oil Field, San Bernardino County,

dated Oct. 7, 1927 received Oct. 21, 1927, has been examined in conjunction with records filed in this office.

Present conditions as shown by the records and the proposal are as follows:

THE NOTICE STATES:

"The well is 2600' N. and 700' W. from Southeast corner of Sec. 25.
The elevation of the derrick floor above sea level is 2600'.
We estimate that the first productive oil or gas sand should be encountered at a depth of about 500', more or less."

PROPOSAL:

"We propose to use the following strings of casing either cementing or landing them as here indicated:

Size of Casing Weight New or Second Hend Depth Landed or cemented

Casing program will depend upon formations encountered. Will core frequently.

It is understood that if changes in this plan become necessary we are to notify you before cementing or landing casing."

RECOMMENDATION:

This department has not sufficient data available upon which to base an estimate of the depth at which oil or gas bearing formations should be encountered in this vicinity, nor the depth at which a water shut-off should be effected.

The proposed drilling program is approved, however, subject to the recommendations that all possible steps shall be taken to determine the fluid content of porous formations encountered.

THIS DEPARTMENT MUST BE NOTIFIED AS FOLLOWS:

1. When a showing of oil or gas is encountered.
2. Before landing or cementing any casing.
3. To witness a bailing test of each possible water shut-off. Copies of our form 106 for this notification are enclosed herewith.

We would appreciate the filing of a memorandum log of the well with the notice of test of water shut-off.

cc--Company 5/17/28 Mc Pherson - Dead

T. D 400'. no casing; no important shows. Mc Pherson said he is in charge but that others associated with him are attempting to take possession without his consent. He does not claim ownership changed

HVD:ML

J.S.

R. D. BUSH,
State Oil and Gas Supervisor

By ..... Deputy

FORM 105. 43484 2-26 10M

RECEIVED
OCT 21 1927
Department of Petroleum and Gas

CALIFORNIA STATE MINING BUREAU

DEPARTMENT OF PETROLEUM AND GAS

071-00041

NOTICE OF INTENTION TO DRILL NEW WELL

This notice must be given before drilling begins

Colon Development Corp., Ltd. Jucaipa Cal. Oct 7 1927

MR. E. Haguenin

Deputy State Oil and Gas Supervisor

Los Angeles Cal.

DEAR SIR:

In compliance with Section 17, Chapter 718, Statutes of 1915, as amended, notice is hereby given that it is our intention to commence the work of drilling well number 1 Section 25 T. 1 S. R. 2 W., ~~S.~~ B. & M., ... Oil Field, San Bernardino County.

The well is 2800 feet N. ~~or S.~~, and 700 feet ~~E. or~~ W. from So. East Corner of Sec 25
(Give location in distance from section corners or other corners of legal subdivision)

The elevation of the derrick floor above sea level is 2600 feet.

We propose to use the following strings of casing, either cementing or landing them as here indicated:

Size of Casing, Inches	Weight, Lb. Per Foot	New or Second Hand	Depth	Landed or Cemented
Casing program will depend upon formations encountered. Will core frequently.				

It is understood that if changes in this plan become necessary we are to notify you before cementing or landing casing.

We estimate that the first productive oil or gas sand should be encountered at a depth of about 500 feet, more or less. Second 2200

Respectfully yours,

Address R.R. No. 2 Box 30 Jucaipa Calif

J. W. McLearnon
(Name of ~~Company~~ or Operator)

Telephone number.....

By J. W. McL

Address notice to Deputy State Oil and Gas Supervisor in charge of district where well is located

Reference to file of data

Maps	Mineral	Cross section	Cards	Forms	
WC F.L.C.	off.			✓	✓

W.C.
B.K.
F.L.C.

Lease consists of: 100 Acres
Topo. Sh. #66
E.9.K.

Appendix 2-C

Water Budget Analysis

Table 2C-1: Temperature Lapse Rates used in the YIHM								
Month	**Minimum temperature (T_{min})**						**Maximum temperature (T_{max})**	
	Temperature lapse rate (degrees C/ft.)			**Linear regression coefficient of determination**			**Temperature lapse rate (degrees C/ft.)**	**Linear regression coefficient of determination**
	Low-elevation	**Mid-elevation**	**High-elevaation**	**Low-elevation**	**Mid-elevation**	**High-elevation**		
January	-0.000267	-0.009122	-0.001069	0.375161	0.949365	0.254554	-0.006274	0.986521
February	-0.002090	-0.008838	-0.002369	0.410287	0.951706	0.254554	-0.006286	0.986626
March	-0.002894	-0.008079	-0.002473	0.607330	0.944339	0.618303	-0.005846	0.981146
April	-0.003499	-0.007159	-0.002392	0.728538	0.935666	0.555306	-0.005798	0.965877
May	-0.004425	-0.006001	-0.001270	0.831409	0.937605	0.225797	-0.004960	0.906887
June	-0.002725	-0.004569	-0.000979	0.636168	0.804955	0.104089	-0.004187	0.784555
July	-0.000511	-0.004723	-0.000030	0.038804	0.789060	0.000088	-0.004783	0.795607
August	-0.000715	-0.005240	-0.000809	0.079302	0.789060	0.071081	-0.005111	0.839502
September	-0.000432	-0.007149	-0.001582	0.019373	0.890501	0.205146	-0.005646	0.904514
October	-0.001161	-0.008536	-0.000633	0.134185	0.940326	0.049203	-0.005988	0.937825
November	-0.000545	-0.008684	-0.001768	0.028359	0.942844	0.341591	-0.006120	0.978148
December	0.000048	-0.008963	-0.001861	0.000249	0.946138	0.375161	-0.005976	0.986968

Data provided by the USGS

DRAFT

Table 2C-2: Historical Water Budget for the Yucaipa Subbasin

Water Year[A]	Water Year Type	Individual Components of the Basin Water Budget Reported in Units of Acre-Feet (AF)																								
		Inflows to Groundwater System (AF)											Outflows from Groundwater System												Change in Storage	
					Subsurface Inflows										Subsurface Outflows											
		Stream Leakage	Return Flows[B]	Precipitation Recharge	From Beaumont Basin	From San Timoteo Basin	From SBBA	From Crafton Hills	From Yucaipa Hills	From San Bernardino Mountains	*Subtotal*	Surface Water Spreading	Total Basin Inflows	ET	To Beaumont Basin	To San Timoteo Basin	To SBBA	To Crafton Hills	To Yucaipa Hills	To San Bernardino Mountains	*Subtotal*	GW Discharges to Streams	GW Extractions[C]	Surface Water Diversions[D]	Groundwater Discharge to Surface[E]	Total Basin Outflows	Annual	Cumulative
1965	Normal	9,416	2,101	2,209	2,023	6,511	269	47	2,732	1,455	*13,036*	0	26,761	2,340	740	8,980	3,281	0	1,925	13	*14,940*	2,199	9,899	0	7	29,385	-2,624	**-2,624**
1966	Above Normal	10,441	2,101	5,153	2,115	6,449	248	46	2,791	1,596	*13,243*	0	30,938	2,697	741	8,954	3,464	0	1,958	14	*15,132*	2,629	11,609	31	9	32,108	-1,169	**-3,794**
1967	Wet	10,656	2,101	4,957	2,212	6,382	234	44	2,832	1,705	*13,409*	0	31,122	2,399	760	8,944	3,516	0	1,954	13	*15,187*	2,792	11,057	36	10	31,481	-359	**-4,153**
1968	Normal	9,688	2,107	3,166	2,232	6,379	229	43	2,861	1,837	*13,581*	0	28,541	2,611	774	8,974	3,356	0	1,945	13	*15,063*	2,422	11,106	16	8	31,225	-2,684	**-6,837**
1969	Wet	12,421	2,101	11,878	2,251	6,300	209	43	3,016	2,374	*14,193*	0	40,593	2,821	766	8,872	3,650	0	2,072	15	*15,375*	3,967	9,658	127	11	31,959	8,634	**1,796**
1970	Dry	10,341	2,515	4,557	2,148	6,313	185	41	3,187	2,298	*14,172*	0	31,585	2,925	737	8,958	3,490	0	2,072	17	*15,275*	3,018	9,861	111	11	31,200	385	**2,181**
1971	Below Normal	10,382	2,439	4,088	2,204	6,327	174	41	3,075	2,453	*14,275*	0	*31,184*	2,774	733	8,981	3,512	0	2,059	18	*15,303*	3,038	9,849	142	10	*31,117*	67	**2,248**
1972	Dry	10,002	2,446	3,302	2,223	6,356	169	41	3,016	2,295	*14,100*	0	*29,850*	3,004	747	9,018	3,494	0	2,019	21	*15,299*	2,783	10,818	156	8	*32,068*	-2,218	**29**
1973	Above Normal	10,912	2,439	5,141	2,197	6,286	165	41	2,951	2,241	*13,881*	0	*32,373*	2,478	746	9,003	3,665	0	2,019	20	*15,452*	3,391	10,411	217	10	*31,960*	413	**442**
1974	Below Normal	10,663	2,392	4,457	2,128	6,267	161	40	3,036	2,070	*13,701*	0	*31,214*	2,888	736	9,001	3,688	0	2,007	20	*15,453*	3,109	11,484	206	10	*33,150*	-1,936	**-1,494**
1975	Normal	10,059	2,571	3,316	1,975	6,263	157	39	3,005	2,021	*13,459*	0	*29,405*	2,546	718	9,009	3,640	0	1,977	19	*15,362*	2,748	10,501	133	9	*31,299*	-1,894	**-3,388**
1976	Normal	10,530	2,641	4,050	1,820	6,282	156	39	2,958	2,077	*13,334*	0	*30,556*	2,662	701	9,020	3,709	0	1,961	18	*15,410*	2,747	10,366	88	8	*31,282*	-726	**-4,114**
1977	Below Normal	10,098	2,634	4,238	1,720	6,246	160	39	2,929	2,093	*13,187*	0	*30,158*	2,753	687	9,020	3,632	0	1,956	19	*15,313*	2,716	9,906	100	9	*30,798*	-640	**-4,754**
1978	Wet	13,296	2,634	16,145	1,883	6,210	158	38	3,311	2,517	*14,118*	0	*46,193*	3,137	695	8,931	3,896	0	2,205	19	*15,747*	4,909	10,002	220	14	*34,030*	12,163	**7,409**
1979	Above Normal	12,654	2,634	9,423	1,845	6,251	139	35	3,642	2,618	*14,530*	0	*39,242*	3,072	698	9,016	3,967	0	2,296	23	*16,001*	4,675	9,764	267	18	*33,797*	5,445	**12,854**
1980	Wet	15,176	3,278	15,677	1,580	6,351	126	34	3,958	3,033	*15,081*	0	*49,212*	3,550	654	9,010	4,017	0	2,485	25	*16,191*	6,449	10,075	332	20	*36,616*	12,596	**25,450**
1981	Dry	12,933	3,483	6,838	1,187	6,413	119	32	4,029	2,842	*14,623*	0	*37,877*	3,860	612	9,083	3,853	0	2,419	27	*15,993*	4,774	10,198	286	17	*35,129*	2,748	**28,198**
1982	Above Normal	13,988	3,483	8,545	927	6,452	119	33	3,823	2,987	*14,340*	0	*40,355*	3,152	592	9,079	4,104	0	2,370	30	*16,176*	5,490	8,880	299	19	*34,017*	6,338	**34,536**
1983	Wet	14,684	3,483	11,157	788	6,457	116	31	3,857	2,913	*14,163*	0	*43,486*	3,110	598	9,100	4,248	0	2,427	29	*16,402*	6,184	8,353	332	22	*34,405*	9,081	**43,617**
1984	Dry	12,179	3,492	6,583	684	6,475	108	29	3,978	2,581	*13,855*	0	*36,110*	4,117	597	9,184	4,005	0	2,429	27	*16,243*	4,257	10,278	279	18	*35,191*	918	**44,535**
1985	Below Normal	12,335	5,337	6,275	652	6,467	102	29	3,861	2,555	*13,668*	0	*37,615*	3,874	601	9,162	4,081	0	2,402	27	*16,274*	4,297	10,533	268	18	*35,264*	2,351	**46,886**
1986	Normal	12,023	5,961	5,568	513	6,459	98	29	3,741	2,505	*13,346*	0	*36,898*	3,857	685	9,176	4,042	0	2,343	26	*16,272*	4,106	9,823	257	19	*34,333*	2,564	**49,450**
1987	Dry	11,289	5,961	4,170	438	6,430	96	30	3,640	2,385	*13,020*	0	*34,439*	3,878	698	9,179	4,037	0	2,299	24	*16,237*	3,593	9,987	230	19	*33,945*	494	**49,944**
1988	Below Normal	11,108	5,978	3,721	400	6,411	99	30	3,533	2,304	*12,778*	0	*33,584*	3,738	762	9,198	4,057	0	2,260	23	*16,300*	3,459	10,857	218	21	*34,593*	-1,008	**48,936**
1989	Below Normal	10,602	5,961	3,336	382	6,375	106	30	3,433	2,122	*12,448*	0	*32,347*	3,885	818	9,166	4,004	0	2,215	22	*16,225*	3,142	11,266	194	20	*34,733*	-2,385	**46,551**
1990	Dry	10,285	2,208	2,023	442	6,391	114	31	3,349	1,953	*12,280*	0	*26,796*	3,689	822	9,156	3,914	0	2,170	21	*16,082*	2,891	11,626	172	19	*34,479*	-7,683	**38,868**
1991	Above Normal	11,275	942	5,677	654	6,429	124	31	3,334	1,959	*12,531*	0	*30,426*	3,628	683	9,084	4,031	0	2,186	19	*16,003*	3,403	11,657	198	16	*34,906*	-4,480	**34,387**
1992	Above Normal	11,389	945	5,911	832	6,464	127	31	3,430	1,986	*12,871*	0	*31,116*	3,662	656	9,131	4,083	0	2,243	18	*16,131*	3,596	11,743	235	16	*35,383*	-4,267	**30,120**
1993	Wet	14,133	1,173	17,007	954	6,483	128	29	3,879	2,434	*13,907*	0	*46,221*	3,989	683	9,037	4,126	0	2,487	22	*16,355*	5,707	11,481	302	21	*37,854*	8,367	**38,488**
1994	Below Normal	12,201	1,195	5,643	964	6,561	109	28	4,023	2,454	*14,139*	0	*33,177*	3,815	697	9,147	4,145	0	2,490	19	*16,499*	4,233	11,947	279	20	*36,794*	-3,617	**34,871**
1995	Wet	15,315	1,489	12,358	936	6,618	111	27	4,046	2,873	*14,612*	0	*43,774*	3,876	724	9,088	4,227	0	2,566	22	*16,627*	6,814	11,870	354	22	*39,562*	4,212	**39,083**
1996	Dry	13,062	1,592	5,069	975	6,722	97	25	4,114	2,530	*14,464*	0	*34,188*	4,352	700	9,211	4,195	0	2,531	21	*16,658*	5,069	12,841	330	17	*39,268*	-5,080	**34,002**
1997	Above Normal	12,896	1,588	5,442	1,086	6,768	88	25	3,966	2,470	*14,404*	0	*34,329*	4,141	709	9,183	4,231	0	2,489	22	*16,634*	4,894	13,184	305	16	*39,174*	-4,845	**29,157**
1998	Wet	15,355	1,588	12,254	1,227	6,777	85	25	4,036	2,743	*14,893*	0	*44,089*	3,465	696	9,137	4,464	0	2,568	23	*16,888*	6,870	12,511	347	22	*40,102*	3,987	**33,144**
1999	Dry	12,540	1,588	4,722	1,275	6,784	79	24	4,131	2,404	*14,696*	0	*33,546*	3,976	699	9,227	4,338	0	2,537	21	*16,823*	4,719	14,065	315	18	*39,917*	-6,371	**26,774**
2000	Dry	12,304	1,868	4,044	1,409	6,867	79	26	4,011	2,425	*14,817*	0	*33,032*	4,176	727	9,260	4,276	0	2,505	21	*16,790*	4,279	14,988	299	15	*40,546*	-7,514	**19,259**
2001	Dry	12,246	1,955	3,666	1,241	6,840	84	27	3,836	2,417	*14,445*	0	*32,312*	3,699	800	9,221	4,358	0	2,437	20	*16,838*	4,338	14,330	297	15	*39,516*	-7,204	**12,055**
2002	Critically Dry	10,896	1,955	2,245	1,135	6,864	90	29	3,747	2,206	*14,071*	36	*29,202*	3,864	955	9,234	4,126	0	2,373	21	*16,710*	3,400	15,346	235	12	*39,566*	-10,364	**1,691**
2003	Above Normal	11,589	1,955	3,589	1,219	6,847	98	29	3,606	2,133	*13,932*	691	*31,757*	3,435	946	9,206	4,294	0	2,344	20	*16,809*	3,722	14,513	242	19	*38,740*	-6,983	**-5,292**
2004	Dry	10,939	1,961	2,926	1,212	6,849	106	30	3,581	1,988	*13,767*	624	*30,216*	3,649	1,224	9,233	4,155	0	2,323	17	*16,952*	3,316	14,215	215	19	*38,367*	-8,151	**-13,443**
2005	Wet	13,561	2,831	11,620	1,205	6,795	106	30	3,757	2,257	*14,150*	135	*42,297*	3,483	1,173	9,112	4,413	0	2,442	19	*17,159*	5,250	13,561	276	19	*39,747*	2,550	**-10,894**
2006	Below Normal	11,309	3,126	4,449	1,193	6,807	90	29	3,894	2,152	*14,164*	17	*33,065*	3,685	1,290	9,203	4,248	0	2,435	17	*17,193*	3,628	13,478	239	13	*38,237*	-5,172	**-16,065**
2007	Critically Dry	10,581	3,126	2,745	1,218	6,866	84	29	3,741	2,284	*14,221*	4	*30,677*	3,823	1,604	9,220	4,102	0	2,382	17	*17,326*	3,132	13,166	199	10	*37,656*	-6,979	**-23,044**
2008	Normal	11,284	3,135	4,099	1,234	6,877	85	29	3,580	2,292	*14,098*	551	*33,166*	3,664	1,148	9,226	4,276	0	2,343	17	*17,010*	3,554	11,395	218	17	*35,858*	-2,693	**-25,737**
2009	Below Normal	11,112	3,126	4,005	1,251	6,825	84	29	3,482	2,096	*13,768*	1,337	*33,349*	3,769	831	9,200	4,214	0	2,284	17	*16,547*	3,503	10,171	215	38	*34,243*	-895	**-26,632**
2010	Above Normal	12,416	3,787	6,687	1,222	6,752	79	28	3,465	1,985	*13,532*	3,549	*39,971*	3,635	810	9,165	4,322	0	2,274	18	*16,591*	4,528	10,400	236	112	*35,502*	4,470	**-22,162**
2011	Wet	12,924	4,009	8,383	1,161	6,708	66	27	3,523	2,000	*13,487*	3,071	*41,875*	3,740	791	9,145	4,482	0	2,304	17	*16,738*	4,892	9,839	254	128	*35,591*	6,283	**-15,879**
2012	Dry	11,403	4,020	4,835	1,101	6,720	52	26	3,584	1,886	*13,369*	2,936	*36,564*	4,066	812	9,227	4,356	1	2,301	16	*16,712*	3,864	10,174	209	98	*35,123*	1,441	**-14,438**
2013	Dry	11,089	4,009	4,164	1,051	6,724	44	25	3,491	2,030	*13,366*	2,170	*34,799*	3,806	900	9,190	4,441	1	2,263	16	*16,810*	3,562	10,341	182	79	*34,781*	18	**-14,420**
2014	Dry	10,633	4,009	3,544	1,013	6,731	41	25	3,398	2,005	*13,212*	521	*31,920*	3,767	1,068	9,199	4,340	1	2,222	16	*16,846*	3,127	11,897	176	29	*35,840*	-3,920	**-18,340**
Historical Average		**11,812**	**2,829**	**6,101**	**1,315**	**6,544**	**123**	**32**	**3,524**	**2,277**	***13,815***	**313**	***34,870***	**3,460**	**795**	**9,109**	**4,011**	**0**	**2,272**	**20**	***16,207***	**3,984**	**11,346**	**217**	**23**	***35,237***	**-367**	
Critically Dry Wate Year Average		10,738	2,541	2,495	1,177	6,865	87	29	3,744	2,245	*14,146*	20	*29,940*	3,844	1,280	9,227	4,114	0	2,378	19	*17,018*	3,266	14,256	217	11	*38,611*	-8,671	
Dry Water Year Average		11,518	2,936	4,317	1,171	6,615	98	29	3,668	2,289	*13,870*	447	*33,088*	3,783	796	9,168	4,089	0	2,323	20	*16,397*	3,828	11,830	233	27	*36,098*	-3,010	
Below Normal Water Year Average		11,090	3,576	4,468	1,211	6,476	121	33	3,474	2,255	*13,570*	150	*32,855*	3,465	795	9,120	3,954	0	2,234	20	*16,123*	3,458	11,055	207	18	*34,325*	-1,471	
Normal Water Year Average		10,500	3,086	3,734	1,633	6,462	165	38	3,146	2,031	*13,475*	92	*30,888*	2,947	794	9,064	3,717	0	2,083	18	*15,676*	2,963	10,515	119	11	*32,230*	-1,343	
Above Normal Water Year Average		11,951	2,208	6,174	1,344	6,522	132	33	3,445	2,219	*13,696*	471	*34,501*	3,322	731	9,091	4,018	0	2,242	20	*16,103*	4,036	11,351	226	26	*35,065*	-564	
Wet Water Year Average		13,752	2,469	12,144	1,420	6,508	134	33	3,622	2,485	*14,201*	321	*42,886*	3,357	754	9,037	4,104	0	2,351	20	*16,267*	5,383	10,841	258	29	*36,135*	6,751	

[A]Water Year corresponds to October 1 of the previous year, through September 30th of the current year.

[B]Return flows consist of water that recharges the Subbasin via municipal distribution network leaks, septic system discharges, and infiltration of irrigation water

[C]Groundwater Extractions are broken down by Usage Sector in Table 2C-7

[D]Represents surface water diversions through the operation of YVWD-25

[E]The YIHM calculates groundwater discharges to land surface when groundwater elevations in a given cell are higher than the top elevation of the cell

Table 2C-3: Imported Groundwater to the Yucaipa Subbasin			
Water Year Ending	Imported Groundwater (AF)		
	South Mesa	YVWD	**Total**
1965	-	-	**-**
1966	-	0	**-**
1967	-	0	**-**
1968	-	0	**-**
1969	-	0	**-**
1970	-	0	**-**
1971	-	0	**-**
1972	-	0	**-**
1973	-	0	**-**
1974	-	0	**-**
1975	-	0	**-**
1976	-	0	**-**
1977	-	0	**-**
1978	-	0	**-**
1979	-	0	**-**
1980	-	0	**-**
1981	0	20	**20**
1982	0	104	**104**
1983	0	43	**43**
1984	0	18	**18**
1985	0	13	**13**
1986	0	6	**6**
1987	0	14	**14**
1988	263	19	**282**
1989	373	45	**418**
1990	469	41	**509**
1991	403	14	**417**
1992	353	2	**355**
1993	417	2	**419**
1994	488	14	**502**
1995	523	6	**529**
1996	582	7	**589**
1997	609	7	**615**
1998	504	3	**507**
1999	560	3	**563**
2000	577	25	**602**
2001	553	886	**1,439**
2002	537	1,518	**2,055**
2003	382	1,693	**2,075**
2004	474	1,657	**2,131**
2005	610	1,279	**1,890**
2006	643	1,709	**2,352**
2007	662	1,609	**2,271**
2008	509	777	**1,286**
2009	399	551	**951**
2010	422	665	**1,087**
2011	415	587	**1,002**
2012	441	694	**1,135**
2013	338	1,010	**1,349**
2014	417	1,198	**1,615**
Average	**380**	**331**	**858**

AF = acre-feet

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Table 2C-4: Imported Surface Water Supplies to the Subbasin									
Water Year Ending	**From SBVMWD**				**From SGWPA**				**Total SWP Water Imported to the Subbasin (AF)**
	Delivered to YVWRFF (AF)	Delivered to Wilson Creek spreading Basins (AF)	Delivered to Oak Glen Creek spreading Basins (AF)	**Total SBVMWD Imports (AF)**	Delivered to YVWRFF (AF)	Delivered to Wilson Creek spreading Basins (AF)	Delivered to Oak Glen Creek spreading Basins (AF)	**Total SGPWA Imports (AF)**	
2003	855	0	0	**855**					**855**
2004	1,246	0	0	**1,246**	0	0	0	**0**	**1,246**
2005	1,357	0	0	**1,357**	0	0	0	**0**	**1,357**
2006	2,213	0	0	**2,213**	0	0	0	**0**	**2,213**
2007	3,539	0	0	**3,539**	0	0	0	**0**	**3,539**
2008	7,263	0	0	**7,263**	0	0	0	**0**	**7,263**
2009	7,428	0	48	**7,476**	0	0	0	**0**	**7,476**
2010	5,530	0	0	**5,530**	0	0	0	**0**	**5,530**
2011	5,581	1,542	141	**7,264**	0	0	0	**0**	**7,264**
2012	6,008	3,119	267	**9,394**	0	0	0	**0**	**9,394**
2013	5,846	2,824	220	**8,890**	0	0	0	**0**	**8,890**
2014	5,133	0	159	**5,292**	0	0	0	**0**	**5,292**
2015	3,845	0	0	**3,845**	0	0	0	**0**	**3,845**
2016	7,145	0	0	**7,145**	0	0	0	**0**	**7,145**
2017	8,764	6,579	0	**15,343**	0	0	0	**0**	**15,343**
2018	8,455	1,180	558	**10,192**	0	0	0	**0**	**10,192**
Total	**80,210**	**15,244**	**1,393**	**96,846**	**0**	**0**	**0**	**0**	**96,846**

AF = acre-feet

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Table 2C-5: Spreading at the Oak Glen Creek and Wilson Creek Spreading Basins						
Water Year Ending	Imported Water Delivered (AF)			YVWRFF Water Diverted to Spreading Basins (AF)	**Total Water Delivered for Spreading at the Wilson Creek and Oak Glen Creek Spreading Basins (AF)**	**Simulated Spreading at the Oak Glen Creek and Wilson Creek Spreading Basins (AF)**
	to Wilson Creek Spreading Basins	to Oak Glen Creek Spreading Basins	**Total SWP Water Used for Spreading**			
2001				0	**0**	
2002				0	**0**	**36**
2003	0	0	**0**	0	**0**	**691**
2004	0	0	**0**	0	**0**	**624**
2005	0	0	**0**	0	**0**	**135**
2006	0	0	**0**	0	**0**	**17**
2007	0	0	**0**	0	**0**	**4**
2008	0	0	**0**	0	**0**	**551**
2009	0	48	**48**	0	**48**	**1,337**
2010	0	0	**0**	0	**0**	**3,549**
2011	1,542	141	**1,683**	0	**1,683**	**3,071**
2012	3,119	267	**3,386**	0	**3,386**	**2,936**
2013	2,824	220	**3,044**	0	**3,044**	**2,170**
2014	0	159	**159**	0	**159**	**521**
2015	0	0	**0**	133	**133**	**313**
2016	0	0	**0**	8	**8**	**N/A[a]**
2017	6,579	0	**6,579**	3	**6,582**	**N/A[a]**
2018	1,180	558	**1,737**	20	**1,757**	**N/A[a]**
Total	**15,244**	**1,393**	**16,637**	**164**	**16,801**	**15,955**

AF = acre-feet

[a]The YIHM was designed to simulate groundwater conditions through water year 2014, and therefore does not contain estimates of recharge at the Spreading Basins between 2015 and 2019.

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Table 2C-6: Historical and Current surface water diversion points and diversions in the Subbasin				
Water Year Ending	Well 25 Production (AF)	Surface Water Diversion from Oak Glen Creek (AF)	Surface Water Diversion from Birch Creek (AF)	**Total Surface Water Diversions (AF)**
2001	312	29	56	**396**
2002	303	65	81	**449**
2003	330	67	105	**502**
2004	288	24	48	**360**
2005	322	107	99	**527**
2006	327	46	148	**520**
2007	313	57	47	**418**
2008	278	95	9	**382**
2009	287	50	19	**356**
2010	302	61	0	**363**
2011	342	36	0	**378**
2012	267	8	0	**275**
2013	215	20	0	**235**
2014	230	13	0	**243**
2015	217	12	0	**229**
2016	210	13	0	**223**
2017	205	4	0	**209**
2018	192	0	0	**192**
Total	**4,938**	**707**	**611**	**6,257**

AF = acre-feet

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Table 2C-7: Historical Groundwater Extractions by Usage Type in the Subbasin								
Water Year[A]	**Water Year Type[B]**	Municipal Groundwater Extractions (AF)			Irrigation (AF)		Private Well Extractions (AF)	Total Groundwater Extractions (AF)
		YVWD	South Mesa	WHWC	South Mountain	Subtotal		
1965	Normal	2,996	1,602	1,499	115	6,211	3,688	**9,899**
1966	Above Normal	3,189	2,732	1,436	376	7,734	3,876	**11,609**
1967	Wet	3,296	3,035	1,266	337	7,933	3,124	**11,057**
1968	Normal	3,252	2,869	1,278	456	7,855	3,251	**11,106**
1969	Wet	3,362	2,174	936	226	6,698	2,959	**9,658**
1970	Dry	3,433	2,195	1,085	405	7,117	2,743	**9,861**
1971	Below Normal	3,341	2,088	1,187	506	7,122	2,728	**9,849**
1972	Dry	3,489	2,098	1,498	467	7,551	3,267	**10,818**
1973	Above Normal	3,280	2,289	1,334	780	7,683	2,728	**10,411**
1974	Below Normal	3,990	2,518	1,428	815	8,751	2,734	**11,484**
1975	Normal	3,347	2,346	1,430	812	7,936	2,565	**10,501**
1976	Normal	3,403	2,260	1,391	779	7,832	2,534	**10,366**
1977	Below Normal	3,527	2,277	1,327	474	7,605	2,301	**9,906**
1978	Wet	3,204	2,297	1,373	567	7,441	2,561	**10,002**
1979	Above Normal	2,908	2,394	1,510	514	7,325	2,439	**9,764**
1980	Wet	3,140	2,530	1,445	426	7,541	2,534	**10,075**
1981	Dry	3,375	2,660	1,556	80	7,672	2,526	**10,198**
1982	Above Normal	2,635	1,960	1,399	579	6,573	2,307	**8,880**
1983	Wet	2,359	1,731	1,384	795	6,269	2,084	**8,353**
1984	Dry	3,288	2,243	1,670	900	8,100	2,178	**10,278**
1985	Below Normal	3,602	2,261	1,771	956	8,590	1,943	**10,533**
1986	Normal	3,883	1,309	1,864	867	7,924	1,899	**9,823**
1987	Dry	3,945	1,650	1,625	935	8,155	1,833	**9,987**
1988	Below Normal	4,547	1,756	1,838	1,000	9,142	1,715	**10,857**
1989	Below Normal	5,131	1,716	2,042	825	9,713	1,553	**11,266**
1990	Dry	5,323	1,755	2,130	687	9,895	1,731	**11,626**
1991	Above Normal	5,569	1,607	2,052	899	10,127	1,530	**11,657**
1992	Above Normal	5,628	1,596	2,065	1,063	10,352	1,391	**11,743**
1993	Wet	5,261	1,712	2,113	791	9,877	1,604	**11,481**
1994	Below Normal	5,509	1,694	2,181	793	10,177	1,770	**11,947**
1995	Wet	5,567	1,637	2,139	888	10,230	1,640	**11,870**
1996	Dry	6,243	1,781	2,353	1,016	11,392	1,450	**12,841**
1997	Above Normal	6,512	1,799	2,331	1,091	11,733	1,451	**13,184**
1998	Wet	5,929	1,685	3,038	744	11,396	1,116	**12,511**
1999	Dry	7,438	1,904	2,450	1,144	12,936	1,129	**14,065**
2000	Dry	8,519	1,991	2,418	913	13,841	1,147	**14,988**
2001	Dry	8,382	2,029	2,365	832	13,607	723	**14,330**
2002	Critically Dry	9,121	2,176	2,473	946	14,716	629	**15,346**
2003	Above Normal	8,506	2,282	2,346	743	13,877	636	**14,513**
2004	Dry	8,841	2,196	2,392	208	13,637	578	**14,215**
2005	Wet	8,555	1,965	2,383	69	12,972	588	**13,561**
2006	Below Normal	8,362	2,037	2,542	12	12,953	525	**13,478**
2007	Critically Dry	7,821	2,151	2,765	-	12,738	428	**13,166**
2008	Normal	6,350	2,198	2,460	-	11,008	387	**11,395**
2009	Below Normal	5,692	2,148	1,964	-	9,805	366	**10,171**
2010	Above Normal	6,205	1,934	1,873	-	10,012	388	**10,400**
2011	Wet	5,685	1,826	1,946	-	9,458	381	**9,839**
2012	Dry	5,824	1,905	2,093	-	9,822	352	**10,174**
2013	Dry	5,837	2,086	2,081	-	10,004	338	**10,341**
2014	Dry	7,227	2,023	2,114	210	11,574	323	**11,897**
Historical Average		**5,116**	**2,062**	**1,873**	**652**	**9,612**	**1,733**	**11,346**
Critically Dry Wate Year Average		8,471	2,164	2,619	946	13,727	529	**14,256**
Dry Water Year Average		5,797	2,037	1,988	650	10,379	1,451	**11,830**
Below Normal Water Year Average		4,856	2,055	1,809	673	9,317	1,737	**11,055**
Normal Water Year Average		3,872	2,097	1,654	606	8,128	2,387	**10,515**
Above Normal Water Year Average		4,937	2,066	1,816	756	9,491	1,861	**11,351**
Wet Water Year Average		4,636	2,059	1,802	538	8,981	1,859	**10,841**

AF = acre-feet

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Table 2C-8: Estimates of Safe Yield in the Yucaipa Subbasin and Subareas (AFY)				
Subarea	Historical Sustainable Yield Estimated from the YIHM	GSSI (2014) Estimates of Safe Yield		
	YIHM Water Budget	Zero-Net Draft	Hill	Hydrologic Water Balance
Triple Falls Creek	394	215	310	-
Oak Glen	473	415	600	-
Gateway	1,947	1,775	1,440	-
Crafton	427	200	370	-
Wilson Creek	696	1,520	1,245	-
Western Heights	1,764	2,270	2,100	-
Calimesa	4,354	3,195	3,580	-
Live Oak	962	-	-	-
Singleton[a]	0	-	-	-
Yucaipa Subbasin	**10,981**	**9,590**	**9,645**	**9,683**

Estimates of safe yield have not previously been calculated for the Singleton and Live Oak Hydrogeologic Subareas

[a]Results from the YIHM indicate that groundwater in storage declined by approximately 36 AFY; this was subtractred from the total Subbasin sustainable yield, and represented as a zero for the Singelton Subarea sustainable yield

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Table 2C-9:
Historical Water Year Type Distribution in the Subbasin

Water Year Type	Number of occurences between 1965 and 2014	Water Years
Critically Dry	2	2002, 2007
Dry	14	1970, 1972, 1981, 1984, 1987, 1990, 1996, 2000, 2001, 2004, 2012, 2013, 2014
Below Normal	9	1971, 1974, 1977, 1985, 1988, 1994, 2006, 2009
Normal	6	1965, 1968, 1975, 1976, 1986, 2008
Above Normal	9	1966, 1973, 1979, 1982, 1991, 1992, 1997, 2003, 2010
Wet	10	1967, 1969, 1978, 1980, 1983, 1993, 1995, 1998, 2005, 2011

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Table 2C-10: Historical Surface Water Availability in the Subbasin					
Water Year Ending	Water Year Type	SWP water imported from SBVMWD	SWP water imported from SGPWA	Surface water diversions from Oak Glen Creek, Birch Creek, and Well 25	**Total Surface Water Availability**
2001	Dry	---	---	396	**396**
2002	Critically Dry	---	---	449	**449**
2003	Above Normal	855	---	502	**1,357**
2004	Dry	1,246	---	360	**1,606**
2005	Wet	1,357	---	527	**1,885**
2006	Below Normal	2,213	---	520	**2,734**
2007	Critically Dry	3,539	---	418	**3,957**
2008	Normal	7,263	---	382	**7,645**
2009	Below Normal	7,476	---	356	**7,832**
2010	Above Normal	5,530	---	363	**5,893**
2011	Wet	7,264	---	378	**7,642**
2012	Dry	9,394	---	275	**9,670**
2013	Dry	8,890	---	235	**9,125**
2014	Dry	5,292	---	243	**5,536**
Average		5,027	---	380	**4,695**
Critically Dry Wate Year Average		3,539	---	434	**2,203**
Dry Water Year Average		6,206	---	302	**5,267**
Below Normal Water Year Average		4,844	---	438	**5,283**
Normal Water Year Average		7,263	---	382	**7,645**
Above Normal Water Year Average		3,193	---	432	**3,625**
Wet Water Year Average		4,311	---	452	**4,763**

--- = Blank cells indicate that YVWD had not contracted with SWP providers during this period

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Table 2C-11
Current Condition Water Budget for the Yucaipa Subbasin

Table 2C-11	Water Year Type	Individual Components of the Basin Water Budget Reported in Units of Acre-Feet (AF)												Individual Components of the Basin Water Budget Reported in Units of Acre-Feet (AF)													
		Inflows to Groundwater System												Outflows from Groundwater System												Change in Groundwater in Storage	
		Stream Leakage	Return Flows[B]	Precipitation Recharge	Subsurface Inflows							Surface Water Spreading	Total Basin Inflows	ET	Subsurface Outflows							GW Discharges to Streams	GW Extractions	Surface Water Diversions[C]	GW Discharge to Surface[D]	Total Basin Outflows		
					From Beaumont Basin	From San Timoteo Basin	From SBBA	From Crafton Hills	From Yucaipa Hills	From San Bernardino Mountains	*Subtotal*				To Beaumont Basin	To San Timoteo Basin	To SBBA	To Crafton Hills	To Yucaipa Hills	To San Bernardino Mountains	*Subtotal*						Annual	Cumulative
2015	Below Normal	10,571	4,009	2,903	1,006	6,721	39	25	3,292	1,887	*12,970*	115	**30,568**	3,426	1,066	9,186	4,372	1	2,180	17	*16,821*	3,073	10,461	188	9	**33,978**	**-3,410**	-3,410
2016	Dry	10,576	4,020	3,647	996	6,700	39	26	3,223	1,751	*12,735*	6	**30,985**	3,443	916	9,199	4,437	1	2,138	17	*16,708*	3,026	7,915	189	10	**31,292**	**-307**	-3,717
2017	Above Normal	14,433	4,009	10,073	949	6,614	38	25	3,251	1,815	*12,692*	6,582	**47,790**	3,719	944	9,127	4,550	1	2,176	21	*16,818*	6,557	7,223	205	320	**34,842**	**12,947**	9,230
2018	Critically Dry	11,349	4,009	5,339	889	6,581	32	22	3,298	1,577	*12,399*	1,757	**34,854**	3,965	1,003	9,163	4,454	1	2,154	20	*16,795*	3,852	9,073	182	191	**34,058**	**796**	10,026
Average		**11,732**	**4,012**	**5,491**	**960**	**6,654**	**37**	**24**	**3,266**	**1,758**	***12,699***	**2,115**	**36,049**	**3,638**	**982**	**9,169**	**4,453**	**1**	**2,162**	**19**	***16,786***	**4,127**	**8,668**	**191**	**133**	**33,542**	**2,506**	**-**

[A]Water Year corresponds to October 1 of the previous year, through September 30th of the current year.

[B]Return flows consist of water that recharges the Subbasin via municipal distribution network leaks, septic system discharges, and infiltration of irrigation water

[C]Represents surface water diversions through the operation of YVWD-25

[D]The YIHM calculates groundwater discharges to land surface when groundwater elevations in a given cell are higher than the top elevation of the cell

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Table 2C-12: Sustainable Yield for each Management Area in the Yucaipa Subbasin	
Management Area	**Sustainable Yield (AFY)**
Calimesa	4,955
North Bench	3,940
San Timoteo	325
Western Heights	1,760
Total	**10,980**

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Table 2C-13: Projected Future Baseline Water Budget

Individual Components of the Basin Water Budget Reported in Units of Acre-Feet (AF)

Water Year[A]	Inflows to Groundwater System												Outflows from Groundwater System												Change in Groundwater in Storage	
				Subsurface Inflows										Subsurface Outflows												
	Stream Leakage	Return Flows[B]	Precipitation Recharge	From Beaumont Basin	From San Timoteo Basin	From SBBA	From Crafton Hills	From Yucaipa Hills	From San Bernardino Mtns	Subtotal	Surface Water Spreading	Total Basin Inflows	ET	To Beaumont Basin	To San Timoteo Basin	To SBBA	To Crafton Hills	To Yucaipa Hills	To San Bernardino Mtns	Subtotal	GW Discharges to Streams	GW Extractions	Surface Water Diversions[C]	GW Discharge to SurfaceD	Total Basin Outflows	Annual	Cumulative
2019	11,119	4,009	3,705	891	6,574	27	21	3,200	1,574	12,287	2,139	33,260	3,429	1,068	9,160	4,488	1	2,114	16	16,846	3,534	10,563	139	106	34,617	-1,357	**-1,357**
2020	11,256	4,020	4,161	893	6,573	26	21	3,127	1,721	12,362	2,139	33,939	3,457	1,088	9,186	4,559	1	2,099	16	16,949	3,679	10,555	153	120	34,912	-973	**-2,330**
2021	11,381	4,009	4,687	889	6,540	24	22	3,069	1,682	12,226	2,139	34,443	3,337	1,102	9,154	4,576	1	2,080	17	16,929	3,760	10,557	150	118	34,852	-409	**-2,739**
2022	12,253	4,009	8,268	897	6,527	22	21	3,155	1,757	12,380	2,139	39,050	3,894	1,120	9,110	4,698	1	2,126	19	17,074	4,319	10,586	188	119	36,180	2,869	**131**
2023	12,601	4,009	8,223	877	6,500	18	20	3,233	1,797	12,446	2,139	39,418	3,532	1,142	9,110	4,798	1	2,154	19	17,224	4,602	10,600	192	123	36,273	3,145	**3,276**
2024	11,731	4,020	5,605	864	6,531	16	20	3,287	1,852	12,570	2,139	36,065	3,911	1,179	9,178	4,659	1	2,167	17	17,201	4,097	10,580	191	119	36,101	-36	**3,240**
2025	14,806	4,009	15,922	864	6,521	14	18	3,494	2,405	13,317	2,139	*50,193*	4,268	1,204	9,072	4,788	1	2,313	20	17,398	6,641	10,632	191	126	*39,256*	10,936	**14,177**
2026	12,928	4,009	6,836	818	6,502	10	17	3,691	2,308	13,346	2,139	*39,258*	4,552	1,212	9,165	4,835	2	2,332	20	17,565	5,294	10,619	192	123	*38,345*	913	**15,090**
2027	13,302	4,009	6,429	807	6,527	9	18	3,566	2,394	13,321	2,139	*39,200*	4,373	1,297	9,190	4,889	1	2,287	22	17,687	5,505	10,614	192	124	*38,495*	705	**15,795**
2028	12,384	4,020	4,901	800	6,575	10	19	3,498	2,267	13,169	2,139	*36,614*	4,589	1,368	9,227	4,809	1	2,255	22	17,682	4,762	10,603	192	118	*37,946*	-1,332	**14,463**
2029	13,775	4,009	7,923	796	6,526	11	20	3,440	2,337	13,129	2,139	*40,975*	3,888	1,427	9,181	5,024	1	2,262	23	17,918	5,942	10,630	192	126	*38,696*	2,279	**16,742**
2030	13,039	4,009	6,948	793	6,514	11	20	3,509	2,112	12,959	2,139	*39,094*	4,476	1,466	9,178	4,914	1	2,266	23	17,849	5,345	10,633	192	123	*38,618*	475	**17,217**
2031	12,531	4,009	5,242	782	6,488	10	21	3,480	2,058	12,839	2,139	*36,760*	3,932	1,515	9,201	4,976	1	2,253	21	17,968	4,863	10,617	192	124	*37,695*	-935	**16,282**
2032	12,807	4,020	5,934	777	6,532	11	22	3,426	2,087	12,854	2,139	*37,755*	4,044	1,539	9,213	4,922	1	2,236	21	17,933	4,857	10,612	192	122	*37,760*	-5	**16,277**
2033	12,687	4,009	6,488	780	6,497	11	22	3,399	2,146	12,855	2,139	*38,178*	4,390	1,558	9,198	4,935	1	2,233	22	17,947	4,934	10,616	192	125	*38,204*	-26	**16,250**
2034	16,306	4,009	20,771	793	6,500	10	19	3,829	2,645	13,796	2,139	*57,022*	4,944	1,562	9,109	4,944	2	2,478	24	18,120	8,567	10,656	192	133	*42,612*	14,410	**30,661**
2035	16,645	4,009	13,198	732	6,439	6	15	4,143	2,638	13,974	2,139	*49,965*	5,061	1,561	9,170	5,144	4	2,598	23	18,500	8,965	10,657	192	139	*43,513*	6,452	**37,112**
2036	18,647	4,020	18,833	733	6,530	6	15	4,425	3,042	14,750	2,139	*58,389*	5,916	1,668	9,184	5,217	5	2,749	23	18,845	11,184	10,659	192	143	*46,939*	11,450	**48,562**
2037	17,040	4,009	7,761	678	6,554	6	15	4,441	2,818	14,511	2,139	*45,461*	6,310	1,716	9,234	5,315	3	2,674	22	18,965	9,150	10,630	192	135	*45,381*	79	**48,642**
2038	17,748	4,009	9,711	668	6,583	6	18	4,221	3,000	14,496	2,139	*48,104*	5,089	1,839	9,227	5,290	2	2,598	24	18,980	10,011	10,647	192	141	*45,059*	3,044	**51,686**
2039	18,164	4,009	13,277	672	6,640	6	18	4,272	3,007	14,614	2,139	*52,204*	5,181	1,924	9,178	5,299	2	2,663	25	19,092	11,186	10,663	192	150	*46,465*	5,739	**57,425**
2040	15,910	4,020	7,992	649	6,640	6	17	4,341	2,619	14,272	2,139	*44,333*	6,392	1,990	9,275	5,307	2	2,657	22	19,254	8,643	10,644	192	137	*45,262*	-928	**56,497**
2041	15,544	4,009	6,661	640	6,628	7	20	4,193	2,581	14,069	2,139	*42,423*	5,568	2,048	9,310	5,248	2	2,583	24	19,214	7,880	10,636	192	131	*43,621*	-1,198	**55,299**
2042	15,227	4,009	5,659	645	6,635	6	23	4,063	2,563	13,936	2,139	*40,970*	5,383	2,065	9,355	5,346	2	2,522	23	19,313	7,276	10,624	192	127	*42,916*	-1,946	**53,353**
2043	14,169	4,009	4,511	647	6,623	6	24	3,925	2,435	13,661	2,139	*38,489*	5,130	2,079	9,371	5,291	2	2,461	24	19,227	6,320	10,612	192	125	*41,607*	-3,118	**50,235**
2044	13,612	4,020	4,634	657	6,630	6	25	3,813	2,369	13,501	2,139	*37,907*	4,824	2,065	9,386	5,285	2	2,422	24	19,183	5,805	10,609	192	124	*40,738*	-2,831	**47,404**
2045	12,613	4,009	4,203	666	6,608	6	26	3,712	2,167	13,186	2,139	*36,150*	4,877	2,044	9,354	5,116	2	2,385	23	18,924	5,032	10,605	192	120	*39,749*	-3,600	**43,804**
2046	12,063	4,009	3,357	679	6,620	7	27	3,617	1,994	12,944	2,139	*34,513*	4,586	2,027	9,344	5,113	2	2,338	22	18,846	4,440	10,597	192	120	*38,781*	-4,268	**39,536**
2047	13,045	4,009	7,889	703	6,645	9	27	3,579	2,012	12,976	2,139	*40,058*	4,639	1,985	9,272	5,094	2	2,348	20	18,721	5,171	10,620	192	122	*39,465*	593	**40,129**
2048	13,469	4,020	8,722	717	6,644	9	25	3,677	2,056	13,129	2,139	*41,479*	4,804	1,950	9,299	5,094	2	2,400	20	18,765	5,652	10,638	192	124	*40,176*	1,303	**41,432**
2049	16,117	4,009	20,186	719	6,662	7	21	4,121	2,504	14,034	2,139	*56,486*	5,544	1,910	9,211	5,120	2	2,640	24	18,908	8,621	10,655	192	133	*44,053*	12,433	**53,865**
2050	15,057	4,009	7,825	676	6,661	6	18	4,200	2,555	14,117	2,139	*43,147*	5,298	1,870	9,296	5,345	2	2,609	19	19,139	7,296	10,640	192	134	*42,699*	448	**54,313**
2051	17,364	4,009	15,080	688	6,699	6	19	4,225	2,980	14,617	2,139	*53,209*	5,404	1,952	9,237	5,310	2	2,656	23	19,180	10,033	10,657	192	141	*45,607*	7,602	**61,914**
2052	15,428	4,020	7,471	652	6,730	6	19	4,257	2,613	14,277	2,139	*43,336*	6,107	1,984	9,336	5,305	2	2,613	20	19,259	7,838	10,629	192	130	*44,157*	-821	**61,093**
2053	15,118	4,009	7,625	655	6,732	7	21	4,103	2,545	14,062	2,139	*42,954*	5,758	2,075	9,330	5,246	2	2,556	22	19,231	7,493	10,633	192	127	*43,434*	-480	**60,614**
2054	17,239	4,009	14,971	668	6,755	6	21	4,174	2,862	14,485	2,139	*52,843*	4,955	2,110	9,260	5,312	2	2,639	24	19,347	10,078	10,656	192	144	*45,371*	7,472	**68,085**
2055	15,011	4,009	6,458	645	6,734	6	20	4,253	2,465	14,122	2,139	*41,740*	5,644	2,124	9,323	5,388	2	2,605	21	19,462	7,692	10,626	192	137	*43,753*	-2,014	**66,072**
2056	14,730	4,020	6,041	647	6,789	7	23	4,115	2,466	14,046	2,139	*40,976*	5,846	2,166	9,407	5,387	2	2,548	21	19,531	6,783	10,614	192	126	*43,093*	-2,116	**63,955**
2057	14,518	4,009	5,559	647	6,748	6	25	3,940	2,483	13,849	2,139	*40,074*	5,131	2,187	9,372	5,344	2	2,477	21	19,403	6,730	10,625	192	127	*42,209*	-2,135	**61,821**
2058	12,801	4,009	3,545	657	6,745	6	26	3,841	2,237	13,512	2,139	*36,006*	5,290	2,183	9,406	5,251	2	2,414	22	19,278	5,168	10,606	192	120	*40,654*	-4,648	**57,173**
2059	13,513	4,009	5,957	672	6,732	6	27	3,706	2,218	13,361	2,139	*38,979*	4,735	2,157	9,345	5,282	2	2,397	22	19,204	5,677	10,618	192	125	*40,551*	-1,572	**55,601**
2060	12,683	4,020	4,733	691	6,742	7	27	3,684	2,052	13,203	2,139	*36,778*	4,978	2,138	9,393	5,200	2	2,373	21	19,126	4,968	10,614	192	120	*39,998*	-3,220	**52,381**
2061	15,279	4,009	14,869	706	6,711	7	25	3,853	2,383	13,685	2,139	*49,982*	4,890	2,099	9,249	5,149	2	2,496	22	19,017	7,701	10,653	192	133	*42,586*	7,396	**59,777**
2062	13,283	4,009	5,883	668	6,689	6	23	3,971	2,199	13,555	2,139	*38,870*	5,162	2,046	9,354	5,354	2	2,485	19	19,260	5,555	10,618	192	127	*40,914*	-2,044	**57,733**
2063	12,297	4,009	4,024	679	6,746	6	25	3,831	2,281	13,569	2,139	*36,039*	5,202	2,057	9,382	5,184	1	2,420	19	19,063	4,659	10,601	192	118	*39,835*	-3,796	**53,936**
2064	12,631	4,020	4,594	686	6,783	6	27	3,668	2,294	13,466	2,139	*36,851*	4,824	2,069	9,373	5,110	1	2,365	19	18,937	4,976	10,597	192	120	*39,646*	-2,796	**51,140**
2065	12,281	4,009	4,197	703	6,777	8	28	3,571	2,113	13,199	2,139	*35,825*	4,800	2,058	9,347	5,096	1	2,311	21	18,834	4,624	10,600	192	118	*39,168*	-3,343	**47,798**
2066	12,952	4,009	7,026	723	6,751	9	28	3,536	2,002	13,049	2,139	*39,175*	4,418	2,043	9,299	5,103	1	2,301	21	18,768	5,122	10,633	192	122	*39,256*	-81	**47,717**
2067	13,458	4,009	8,366	721	6,729	9	26	3,592	2,022	13,100	2,139	*41,072*	4,488	2,036	9,274	5,105	1	2,326	21	18,762	5,597	10,646	192	127	*39,812*	1,259	**48,976**
2068	12,170	4,020	4,298	717	6,741	8	26	3,655	1,918	13,065	2,139	*35,692*	4,734	2,019	9,355	5,181	1	2,320	19	18,895	4,460	10,609	192	120	*39,010*	-3,318	**45,658**
2069	11,722	4,009	3,765	729	6,770	8	27	3,551	2,060	13,145	2,139	*34,779*	4,394	2,001	9,313	5,054	1	2,279	18	18,665	4,150	10,596	190	117	*38,112*	-3,333	**42,326**
Average	**14,009**	**4,012**	**7,861**	**729**	**6,633**	**9**	**22**	**3,778**	**2,308**	**13,478**	**2,139**	**41,500**	**4,831**	**1,786**	**9,264**	**5,094**	**2**	**2,409**	**21**	**18,576**	**6,326**	**10,620**	**189**	**127**	**40,670**	**830**	-

[A]Water Year corresponds to October 1 of the previous year, through September 30th of the current year.

[B]Return flows consist of water that recharges the Subbasin via municipal distribution network leaks, septic system discharges, and infiltration of irrigation water

[C]Represents surface water diversions through the operation of YVWD-25

[D]The YIHM calculates groundwater discharges to land surface when groundwater elevations in a given cell are higher than the top elevation of the cell

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Table 2C-14
Comparison of Average Annual Water Budget Components for the Historical, Current, and Projected Conditions

Water Budget Component		Simulation Period				
				Projected		
		Historical (AFY)	Current (AFY)	Future Baseline (AFY)	Future Baseline with Climate Change I (AFY)	Future Baseline with Climate Change II (AFY)
Stream Leakage		11,812	11,732	14,009	13,257	12,295
Return Flows		2,829	4,012	4,012	4,012	4,012
Precipitation Recharge		6,101	5,491	7,861	7,290	6,496
Subsurface Inflows	From Beaumont Basin	1,315	960	729	755	795
	From San Timoteo Basin	6,544	6,654	6,633	6,591	6,558
	From SBBA	123	37	9	11	13
	From Crafton Hills	32	24	22	22	23
	From Yucaipa Hills	3,524	3,266	3,778	3,612	3,393
	From San Bernardino Mountains	2,277	1,758	2,308	2,200	2,053
	Total Subsurface Inflows	13,815	12,699	13,478	13,191	12,834
Surface Water Spreading		313	2,115	2,139	2,139	2,139
Average Annual Inflows		*34,870*	*36,049*	*41,500*	*39,888*	*37,776*
ET		3,460	3,638	4,831	4,825	4,731
Subsurface Outflows	To Beaumont Basin	795	982	1,786	1,736	1,659
	To San Timoteo Basin	9,109	9,169	9,264	9,246	9,188
	To SBBA	4,011	4,453	5,094	4,910	4,630
	To Crafton Hills	0	1	2	1	1
	To Yucaipa Hills	2,272	2,162	2,409	2,325	2,211
	To San Bernardino Mountains	20	19	21	21	21
	Total Subsurface Outflows	16,207	16,786	18,576	18,240	17,710
GW Discharges to Streams		3,984	4,127	6,326	5,448	4,538
Surface Water Diversions		217	191	189	188	180
GW Extractions		11,346	8,668	10,621	10,611	10,589
GW Discharge to Surface		23	133	127	119	112
Average Annual Outflows		*35,237*	*33,542*	40,670	39,432	37,859
Average Annual Change in Storage		**-367**	**2,506**	**830**	**457**	**-83**

AFY = acre-feet per year

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Table 2C-15: Projected Future Baseline with Climate Change I Water Budget

Individual Components of the Basin Water Budget Reported in Units of Acre-Feet (AF)

Water Year[A]	Inflows to Groundwater System												Outflows from Groundwater System												Change in Groundwater in Storage	
				Subsurface Inflows										Subsurface Outflows												
	Stream Leakage	Return Flows[B]	Precipitation Recharge	From Beaumont Basin	From San Timoteo Basin	From SBBA	From Crafton Hills	From Yucaipa Hills	From San Bernardino Mtns	Subtotal	Surface Water Spreading	Total Basin Inflows	ET	To Beaumont Basin	To San Timoteo Basin	To SBBA	To Crafton Hills	To Yucaipa Hills	To San Bernardino Mtns	Subtotal	GW Discharges to Streams	GW Extractions	Surface Water Diversions[C]	GW Discharge to Surface[D]	Total Basin Outflows	Annual	Cumulative
2019	11,333	4,009	3,902	891	6,581	27	21	3,204	1,569	12,292	2,139	33,676	3,684	1,068	9,161	4,451	1	2,114	16	16,811	3,497	10,563	136	103	34,794	-1,118	**-1,118**
2020	11,178	4,020	4,560	894	6,571	26	21	3,150	1,739	12,400	2,139	34,298	3,820	1,088	9,175	4,555	1	2,106	17	16,941	3,617	10,555	153	117	35,203	-905	**-2,024**
2021	11,168	4,009	4,559	888	6,547	24	22	3,091	1,678	12,250	2,139	34,125	3,645	1,103	9,161	4,460	1	2,089	16	16,830	3,596	10,555	145	114	34,884	-759	**-2,783**
2022	12,035	4,009	7,682	892	6,531	23	21	3,152	1,741	12,360	2,139	38,225	4,074	1,122	9,115	4,638	1	2,120	19	17,016	4,127	10,577	185	115	36,094	2,132	**-651**
2023	12,396	4,009	8,043	880	6,510	19	20	3,218	1,798	12,445	2,139	39,032	3,765	1,140	9,116	4,692	1	2,147	19	17,115	4,380	10,588	190	119	36,157	2,875	**2,224**
2024	11,481	4,020	5,447	867	6,541	17	20	3,271	1,840	12,555	2,139	35,642	4,137	1,174	9,181	4,531	1	2,155	17	17,058	3,887	10,575	189	115	35,962	-320	**1,904**
2025	14,291	4,009	15,055	867	6,526	15	19	3,453	2,324	13,203	2,139	*48,698*	4,467	1,205	9,070	4,693	1	2,290	20	17,278	6,120	10,621	188	121	*38,794*	9,904	**11,808**
2026	12,388	4,009	6,309	826	6,523	11	17	3,628	2,230	13,235	2,139	*38,081*	4,769	1,212	9,158	4,680	1	2,303	20	17,375	4,780	10,612	192	118	*37,845*	235	**12,043**
2027	12,422	4,009	6,143	817	6,558	10	18	3,505	2,381	13,289	2,139	*38,003*	4,570	1,281	9,179	4,712	1	2,259	22	17,454	4,783	10,605	192	118	*37,722*	281	**12,324**
2028	11,721	4,020	4,495	812	6,605	11	20	3,423	2,233	13,104	2,139	*35,480*	4,673	1,360	9,212	4,638	1	2,219	22	17,451	4,202	10,594	192	112	*37,226*	-1,746	**10,578**
2029	12,976	4,009	6,744	809	6,550	12	21	3,335	2,247	12,974	2,139	*38,842*	3,965	1,410	9,166	4,882	1	2,202	22	17,683	5,164	10,623	192	120	*37,747*	1,095	**11,674**
2030	12,378	4,009	6,510	813	6,549	13	21	3,370	2,005	12,770	2,139	*37,807*	4,535	1,448	9,158	4,759	1	2,205	23	17,594	4,683	10,616	192	117	*37,738*	69	**11,742**
2031	11,838	4,009	4,740	803	6,526	13	21	3,350	1,917	12,630	2,139	*35,355*	4,018	1,487	9,178	4,755	1	2,183	21	17,625	4,249	10,596	192	118	*36,797*	-1,441	**10,301**
2032	12,392	4,020	5,716	801	6,556	13	22	3,295	1,924	12,610	2,139	*36,877*	4,084	1,513	9,182	4,748	1	2,162	21	17,627	4,300	10,586	192	116	*36,905*	-28	**10,273**
2033	12,067	4,009	6,550	806	6,514	13	22	3,297	2,015	12,667	2,139	*37,432*	4,518	1,530	9,162	4,750	1	2,176	20	17,640	4,408	10,593	192	119	*37,471*	-38	**10,235**
2034	15,581	4,009	19,261	818	6,490	12	19	3,669	2,480	13,488	2,139	*54,478*	4,923	1,529	9,090	4,835	2	2,400	23	17,878	7,614	10,645	192	126	*41,378*	13,100	**23,335**
2035	15,451	4,009	11,336	758	6,406	6	16	3,959	2,586	13,731	2,139	*46,666*	4,994	1,520	9,165	5,022	3	2,494	22	18,227	7,599	10,652	192	130	*41,794*	4,873	**28,207**
2036	17,238	4,020	16,588	761	6,477	6	16	4,162	2,877	14,299	2,139	*54,284*	5,799	1,608	9,193	5,034	3	2,611	23	18,472	9,216	10,653	192	131	*44,463*	9,820	**38,028**
2037	15,688	4,009	7,170	702	6,473	6	16	4,192	2,629	14,017	2,139	*43,024*	6,136	1,674	9,268	5,016	2	2,547	22	18,528	7,572	10,624	192	124	*43,176*	-153	**37,875**
2038	16,632	4,009	8,361	694	6,503	6	19	3,997	2,804	14,023	2,139	*45,165*	5,001	1,775	9,255	5,159	2	2,488	24	18,702	8,383	10,640	192	129	*43,047*	2,118	**39,993**
2039	17,515	4,009	11,890	695	6,517	6	19	4,012	2,882	14,132	2,139	*49,686*	5,190	1,853	9,219	5,273	2	2,520	26	18,894	9,710	10,663	192	138	*44,787*	4,899	**44,892**
2040	15,094	4,020	7,564	677	6,522	7	18	4,090	2,527	13,841	2,139	*42,658*	6,294	1,887	9,349	5,125	2	2,529	23	18,916	7,351	10,639	192	126	*43,517*	-859	**44,032**
2041	14,462	4,009	6,271	667	6,518	6	21	3,961	2,449	13,623	2,139	*40,504*	5,422	1,947	9,335	5,098	2	2,475	24	18,880	6,556	10,626	192	122	*41,797*	-1,293	**42,739**
2042	13,927	4,009	5,091	667	6,553	6	23	3,841	2,454	13,545	2,139	*38,711*	5,315	1,974	9,348	5,095	2	2,413	23	18,854	5,989	10,616	192	119	*41,084*	-2,372	**40,367**
2043	13,097	4,009	4,330	678	6,578	6	24	3,737	2,361	13,385	2,139	*36,960*	5,122	1,979	9,346	5,070	2	2,361	23	18,780	5,291	10,608	192	118	*40,111*	-3,150	**37,216**
2044	12,632	4,020	4,092	688	6,603	7	25	3,628	2,267	13,219	2,139	*36,102*	4,860	1,985	9,362	5,031	2	2,335	23	18,737	4,860	10,603	192	117	*39,369*	-3,267	**33,949**
2045	11,934	4,009	3,890	701	6,608	9	26	3,526	2,045	12,915	2,139	*34,887*	4,779	1,974	9,318	4,928	2	2,290	22	18,534	4,324	10,599	192	114	*38,542*	-3,655	**30,294**
2046	11,415	4,009	3,314	719	6,616	11	27	3,433	1,857	12,662	2,139	*33,540*	4,548	1,942	9,301	4,844	2	2,241	21	18,351	3,844	10,587	189	114	*37,632*	-4,092	**26,202**
2047	12,356	4,009	7,271	739	6,617	12	27	3,391	1,852	12,637	2,139	*38,413*	4,562	1,926	9,228	4,867	2	2,247	20	18,290	4,467	10,592	184	115	*38,210*	202	**26,404**
2048	12,649	4,020	7,655	755	6,635	12	25	3,461	1,892	12,781	2,139	*39,245*	4,770	1,898	9,259	4,920	2	2,287	19	18,386	4,772	10,617	192	117	*38,853*	391	**26,795**
2049	15,508	4,009	19,111	765	6,611	10	21	3,874	2,287	13,568	2,139	*54,336*	5,359	1,853	9,166	4,980	2	2,508	23	18,532	7,532	10,651	192	125	*42,391*	11,944	**38,740**
2050	13,764	4,009	7,509	715	6,578	6	19	3,994	2,428	13,739	2,139	*41,161*	5,220	1,821	9,273	5,094	2	2,499	19	18,708	5,950	10,630	192	125	*40,825*	336	**39,076**
2051	16,138	4,009	12,230	719	6,607	6	20	3,964	2,766	14,083	2,139	*48,599*	5,344	1,897	9,226	5,084	2	2,530	22	18,760	8,208	10,651	192	129	*43,284*	5,315	**44,390**
2052	14,323	4,020	6,511	691	6,621	6	20	3,967	2,511	13,816	2,139	*40,809*	5,766	1,922	9,340	5,078	2	2,484	20	18,846	6,454	10,623	192	120	*42,002*	-1,193	**43,198**
2053	14,116	4,009	7,486	695	6,627	6	22	3,859	2,479	13,688	2,139	*41,438*	5,504	1,970	9,312	5,052	2	2,444	22	18,801	6,305	10,629	192	118	*41,550*	-112	**43,086**
2054	16,470	4,009	14,193	703	6,629	6	21	3,930	2,749	14,039	2,139	*50,851*	4,917	2,015	9,254	5,185	2	2,521	23	19,000	8,658	10,654	192	133	*43,555*	7,295	**50,381**
2055	14,034	4,009	6,353	672	6,597	6	20	4,031	2,408	13,735	2,139	*40,270*	5,650	2,035	9,366	5,216	2	2,493	21	19,132	6,295	10,624	192	126	*42,019*	-1,749	**48,632**
2056	13,639	4,020	5,679	676	6,660	7	23	3,900	2,357	13,623	2,139	*39,101*	5,622	2,083	9,389	5,116	2	2,455	21	19,066	5,683	10,611	192	118	*41,292*	-2,191	**46,441**
2057	13,602	4,009	5,450	677	6,647	6	24	3,756	2,400	13,511	2,139	*38,711*	5,047	2,104	9,346	5,139	2	2,396	21	19,008	5,783	10,616	192	120	*40,767*	-2,056	**44,385**
2058	11,997	4,009	3,529	690	6,674	7	26	3,675	2,167	13,239	2,139	*34,913*	5,325	2,100	9,371	4,958	2	2,337	22	18,790	4,448	10,605	192	113	*39,473*	-4,560	**39,825**
2059	12,722	4,009	5,333	703	6,678	8	27	3,538	2,084	13,038	2,139	*37,242*	4,803	2,085	9,325	5,070	1	2,310	21	18,812	4,766	10,605	192	117	*39,295*	-2,054	**37,772**
2060	11,973	4,020	4,511	726	6,704	10	27	3,506	1,942	12,915	2,139	*35,558*	4,947	2,063	9,352	4,945	1	2,286	21	18,668	4,258	10,603	192	113	*38,781*	-3,223	**34,548**
2061	14,564	4,009	13,127	745	6,642	10	25	3,620	2,220	13,262	2,139	*47,102*	4,835	2,049	9,237	5,093	1	2,378	22	18,781	6,465	10,645	192	124	*41,042*	6,060	**40,608**
2062	12,461	4,009	5,412	710	6,624	7	24	3,748	2,008	13,121	2,139	*37,142*	5,123	2,006	9,315	5,021	1	2,370	19	18,732	4,733	10,615	192	118	*39,514*	-2,371	**38,236**
2063	11,391	4,009	3,727	718	6,693	7	25	3,618	2,101	13,161	2,139	*34,427*	5,104	2,015	9,319	4,816	1	2,310	19	18,481	3,881	10,599	188	111	*38,364*	-3,936	**34,300**
2064	11,866	4,020	4,276	733	6,743	9	27	3,483	2,179	13,174	2,139	*35,475*	4,662	2,012	9,307	4,950	1	2,272	19	18,562	4,142	10,595	191	113	*38,264*	-2,790	**31,510**
2065	11,604	4,009	3,969	743	6,734	11	27	3,387	1,983	12,885	2,139	*34,607*	4,637	2,003	9,279	4,860	1	2,216	20	18,380	3,934	10,589	191	111	*37,843*	-3,237	**28,274**
2066	12,372	4,009	6,476	756	6,693	12	27	3,344	1,899	12,732	2,139	*37,727*	4,321	1,993	9,235	4,879	1	2,200	22	18,330	4,458	10,605	191	116	*38,021*	-294	**27,980**
2067	12,985	4,009	8,252	761	6,674	12	26	3,407	1,912	12,791	2,139	*40,177*	4,494	1,965	9,216	4,940	1	2,226	22	18,370	4,935	10,629	192	120	*38,741*	1,436	**29,416**
2068	11,494	4,020	4,308	758	6,692	11	25	3,463	1,772	12,721	2,139	*34,684*	4,711	1,957	9,291	4,827	1	2,218	19	18,313	3,891	10,594	190	113	*37,812*	-3,128	**26,287**
2069	11,340	4,009	3,784	764	6,710	11	27	3,373	1,934	12,818	2,139	*34,089*	4,256	1,951	9,241	4,860	1	2,178	17	18,248	3,718	10,576	173	112	*37,083*	-2,993	**23,294**
Average	**13,257**	**4,012**	**7,290**	**755**	**6,591**	**11**	**22**	**3,612**	**2,200**	**13,191**	**2,139**	**39,888**	**4,825**	**1,736**	**9,246**	**4,910**	**1**	**2,325**	**21**	**18,240**	**5,448**	**10,611**	**188**	**119**	**39,432**	**457**	**27,632**

[A]Water Year corresponds to October 1 of the previous year, through September 30th of the current year.

[B]Return flows consist of water that recharges the Subbasin via municipal distribution network leaks, septic system discharges, and infiltration of irrigation water

[C]Represents surface water diversions through the operation of YVWD-25

[D]The YIHM calculates groundwater discharges to land surface when groundwater elevations in a given cell are higher than the top elevation of the cell

Table 2C-16: Projected Future Baseline with Climate Change II Water Budget

Individual Components of the Basin Water Budget Reported in Units of Acre-Feet (AF)

Water Year[A]	Inflows to Groundwater System											Outflows from Groundwater System											Change in Groundwater in Storage	
				Subsurface Inflows									Subsurface Outflows											
	Stream Leakage	Return Flows[B]	Precipitation Recharge	From Beaumont Basin	From San Timoteo Basin	From SBBA	From Crafton Hills	From Yucaipa Hills	From San Bernardino Mtns	Subtotals	Surface Water Spreading	Total Basin Inflows	ET	To Beaumont Basin	To San Timoteo Basin	To SBBA	To Crafton Hills	To Yucaipa Hills	To San Bernardino Mtns	GW Discharges to Streams	GW Extractions	Surface Water Diversions[C]	GW Discharge to Surface[D]	Total Basin Outflows	Annual	Cumulative
2019	11,195	4,009	3,839	891	6,592	27	21	3,209	1,558	11,407	2,139	33,480	3,984	1,070	9,164	4,363	1	2,114	16	3,367	10,562	131	100	34,871	-1,390	**-1,390**
2020	10,994	4,020	4,494	894	6,577	26	21	3,151	1,729	11,504	2,139	34,045	4,101	1,090	9,178	4,461	1	2,106	16	3,466	10,551	145	112	35,227	-1,181	**-2,572**
2021	10,823	4,009	3,982	888	6,560	25	22	3,090	1,650	11,347	2,139	33,189	3,936	1,099	9,162	4,326	1	2,082	16	3,341	10,549	132	109	34,753	-1,564	**-4,135**
2022	11,708	4,009	6,983	893	6,536	24	22	3,111	1,703	11,396	2,139	37,129	4,221	1,116	9,118	4,533	1	2,092	19	3,834	10,563	173	110	35,780	1,349	**-2,786**
2023	11,996	4,009	7,106	883	6,512	21	22	3,148	1,727	11,429	2,139	37,562	3,979	1,141	9,117	4,555	1	2,105	20	4,027	10,574	181	113	35,813	1,750	**-1,037**
2024	11,050	4,020	4,928	874	6,538	19	21	3,188	1,719	11,485	2,139	34,497	4,280	1,168	9,176	4,377	1	2,104	17	3,521	10,565	168	109	35,486	-989	**-2,025**
2025	13,393	4,009	13,363	878	6,525	17	20	3,322	2,116	12,000	2,139	*45,783*	4,522	1,190	9,061	4,568	1	2,215	20	5,226	10,602	172	114	*37,692*	8,091	**6,066**
2026	11,545	4,009	5,755	847	6,547	14	19	3,483	2,048	12,111	2,139	*36,407*	4,815	1,188	9,142	4,469	1	2,230	19	4,018	10,592	192	110	*36,776*	-368	**5,697**
2027	11,458	4,009	5,504	840	6,585	13	20	3,372	2,207	12,196	2,139	*36,147*	4,544	1,255	9,154	4,500	1	2,193	20	3,967	10,587	192	111	*36,523*	-376	**5,321**
2028	10,959	4,020	3,891	840	6,623	14	21	3,290	2,081	12,030	2,139	*33,878*	4,566	1,319	9,186	4,417	1	2,150	21	3,559	10,578	188	106	*36,091*	-2,213	**3,108**
2029	12,036	4,009	5,549	839	6,565	15	22	3,184	2,097	11,884	2,139	*36,456*	3,910	1,355	9,145	4,632	1	2,121	20	4,292	10,590	191	114	*36,371*	85	**3,194**
2030	11,669	4,009	5,687	841	6,554	16	22	3,202	1,849	11,644	2,139	*35,990*	4,480	1,404	9,128	4,562	1	2,109	22	3,992	10,587	192	110	*36,588*	-598	**2,595**
2031	10,989	4,009	3,950	846	6,535	16	23	3,169	1,725	11,467	2,139	*33,400*	4,051	1,416	9,150	4,449	1	2,079	20	3,537	10,565	184	111	*35,562*	-2,162	**433**
2032	11,754	4,020	5,077	839	6,534	16	24	3,109	1,709	11,392	2,139	*35,221*	4,056	1,449	9,141	4,531	1	2,061	20	3,674	10,555	164	109	*35,761*	-540	**-106**
2033	11,235	4,009	6,183	845	6,500	17	23	3,111	1,818	11,469	2,139	*35,880*	4,445	1,462	9,119	4,505	1	2,073	19	3,691	10,561	184	113	*36,172*	-292	**-398**
2034	14,384	4,009	16,767	857	6,449	15	21	3,401	2,228	12,114	2,139	*50,270*	4,737	1,456	9,060	4,679	1	2,274	20	6,226	10,621	188	118	*39,380*	10,890	**10,492**
2035	13,938	4,009	9,525	801	6,380	10	18	3,652	2,333	12,392	2,139	*42,803*	4,802	1,450	9,125	4,797	2	2,336	21	6,037	10,645	192	121	*39,528*	3,275	**13,767**
2036	15,500	4,020	14,073	814	6,458	8	17	3,822	2,737	13,042	2,139	*49,589*	5,568	1,517	9,145	4,781	2	2,435	26	7,308	10,646	192	120	*41,741*	7,848	**21,615**
2037	13,841	4,009	7,058	762	6,452	6	17	3,876	2,469	12,821	2,139	*40,630*	5,835	1,560	9,199	4,669	2	2,404	23	5,941	10,614	192	114	*40,553*	77	**21,692**
2038	15,276	4,009	7,815	749	6,501	6	19	3,717	2,633	12,876	2,139	*42,863*	5,003	1,650	9,185	4,860	1	2,358	24	6,883	10,621	192	119	*40,899*	1,964	**23,656**
2039	16,655	4,009	11,322	751	6,473	7	19	3,745	2,794	13,038	2,139	*47,915*	5,135	1,730	9,188	5,068	2	2,384	27	8,401	10,654	192	128	*42,909*	5,006	**28,662**
2040	13,859	4,020	7,046	725	6,470	6	19	3,839	2,476	12,810	2,139	*40,599*	6,048	1,766	9,308	4,773	2	2,397	25	6,161	10,620	192	116	*41,408*	-809	**27,853**
2041	13,120	4,009	5,546	718	6,483	6	21	3,716	2,396	12,622	2,139	*38,154*	5,316	1,819	9,274	4,826	2	2,347	23	5,339	10,606	192	113	*39,857*	-1,703	**26,150**
2042	12,695	4,009	4,747	717	6,541	7	23	3,611	2,388	12,569	2,139	*36,876*	5,222	1,860	9,274	4,746	2	2,296	23	4,938	10,598	192	112	*39,262*	-2,386	**23,764**
2043	11,973	4,009	3,964	726	6,578	9	24	3,507	2,304	12,422	2,139	*35,233*	5,078	1,866	9,267	4,701	2	2,252	24	4,367	10,592	192	111	*38,450*	-3,217	**20,547**
2044	11,685	4,020	3,687	741	6,607	11	25	3,426	2,133	12,202	2,139	*34,475*	4,750	1,878	9,285	4,653	2	2,222	23	4,053	10,587	192	110	*37,754*	-3,280	**17,267**
2045	11,172	4,009	3,435	757	6,594	12	26	3,315	1,895	11,842	2,139	*33,354*	4,643	1,873	9,241	4,617	2	2,173	21	3,654	10,574	188	107	*37,094*	-3,740	**13,527**
2046	10,811	4,009	3,111	768	6,594	14	27	3,222	1,703	11,558	2,139	*32,397*	4,422	1,859	9,224	4,530	2	2,124	21	3,339	10,556	166	107	*36,350*	-3,953	**9,574**
2047	11,694	4,009	6,241	786	6,572	15	27	3,166	1,688	11,468	2,139	*36,337*	4,352	1,831	9,158	4,628	2	2,124	22	3,860	10,558	165	109	*36,809*	-472	**9,102**
2048	11,939	4,020	6,858	803	6,575	16	26	3,218	1,724	11,559	2,139	*37,318*	4,603	1,820	9,198	4,667	2	2,146	22	4,052	10,579	188	110	*37,386*	-67	**9,035**
2049	14,675	4,009	17,715	812	6,522	14	22	3,600	2,067	12,225	2,139	*51,575*	5,156	1,778	9,101	4,750	2	2,362	25	6,402	10,629	191	117	*40,513*	11,062	**20,097**
2050	12,510	4,009	6,848	755	6,503	8	20	3,746	2,170	12,446	2,139	*38,708*	5,161	1,750	9,197	4,728	2	2,366	19	4,831	10,612	192	116	*38,971*	-264	**19,833**
2051	14,706	4,009	11,268	763	6,551	7	20	3,681	2,641	12,901	2,139	*45,786*	5,257	1,809	9,160	4,853	2	2,397	22	6,614	10,636	192	119	*41,061*	4,725	**24,558**
2052	13,029	4,020	6,060	743	6,594	7	21	3,720	2,443	12,785	2,139	*38,777*	5,610	1,826	9,255	4,771	1	2,371	21	5,284	10,612	192	113	*40,057*	-1,280	**23,278**
2053	12,890	4,009	6,466	742	6,596	7	22	3,604	2,398	12,627	2,139	*38,872*	5,368	1,865	9,223	4,766	1	2,322	22	5,175	10,610	192	111	*39,655*	-783	**22,495**
2054	15,156	4,009	11,652	750	6,573	8	22	3,637	2,621	12,861	2,139	*46,567*	4,810	1,903	9,194	4,928	1	2,376	23	7,041	10,644	192	123	*41,237*	5,330	**27,825**
2055	12,527	4,009	5,918	729	6,550	7	21	3,721	2,300	12,599	2,139	*37,921*	5,483	1,921	9,279	4,752	1	2,358	21	5,040	10,612	192	116	*39,776*	-1,855	**25,970**
2056	12,104	4,020	5,152	726	6,611	7	23	3,614	2,284	12,540	2,139	*36,681*	5,371	1,978	9,289	4,754	1	2,318	21	4,456	10,597	192	110	*39,087*	-2,406	**23,564**
2057	12,264	4,009	5,478	730	6,616	9	24	3,485	2,327	12,462	2,139	*37,082*	4,881	1,983	9,247	4,843	1	2,267	21	4,556	10,597	192	113	*38,701*	-1,619	**21,945**
2058	11,049	4,009	3,391	739	6,648	10	25	3,423	2,074	12,181	2,139	*33,509*	5,132	2,021	9,265	4,555	1	2,210	22	3,655	10,590	191	106	*37,749*	-4,240	**17,705**
2059	11,768	4,009	4,535	757	6,636	12	27	3,314	1,945	11,934	2,139	*35,142*	4,675	2,001	9,238	4,665	1	2,184	21	3,908	10,585	191	110	*37,579*	-2,437	**15,269**
2060	11,154	4,020	3,769	769	6,650	14	27	3,265	1,784	11,740	2,139	*33,592*	4,730	1,987	9,260	4,560	1	2,147	21	3,555	10,572	188	105	*37,129*	-3,537	**11,732**
2061	13,319	4,009	10,979	792	6,570	14	26	3,316	2,001	11,927	2,139	*43,165*	4,677	1,958	9,163	4,820	1	2,215	23	5,119	10,609	191	115	*38,890*	4,275	**16,007**
2062	11,394	4,009	4,762	765	6,577	12	24	3,427	1,789	11,829	2,139	*34,898*	4,907	1,925	9,215	4,568	1	2,205	20	3,835	10,589	191	110	*37,565*	-2,667	**13,340**
2063	10,540	4,009	3,482	772	6,633	12	25	3,322	1,827	11,820	2,139	*32,762*	4,788	1,929	9,207	4,459	1	2,157	19	3,184	10,565	153	104	*36,565*	-3,802	**9,538**
2064	11,054	4,020	3,755	783	6,654	14	27	3,216	1,962	11,872	2,139	*33,624*	4,394	1,918	9,214	4,570	1	2,131	19	3,437	10,559	152	106	*36,502*	-2,878	**6,660**
2065	10,773	4,009	3,241	793	6,637	15	27	3,139	1,808	11,626	2,139	*32,582*	4,401	1,905	9,186	4,456	1	2,082	19	3,293	10,551	152	104	*36,149*	-3,568	**3,092**
2066	11,545	4,009	5,310	799	6,594	16	27	3,083	1,731	11,452	2,139	*35,253*	4,161	1,892	9,141	4,573	1	2,055	22	3,692	10,555	169	108	*36,369*	-1,116	**1,975**
2067	12,087	4,009	7,040	805	6,561	16	26	3,123	1,734	11,460	2,139	*37,540*	4,310	1,883	9,134	4,648	1	2,067	24	4,011	10,573	184	111	*36,947*	594	**2,569**
2068	10,608	4,020	3,781	808	6,589	16	26	3,155	1,543	11,329	2,139	*32,686*	4,521	1,862	9,193	4,419	1	2,057	20	3,191	10,562	155	105	*36,085*	-3,400	**-830**
2069	10,557	4,009	3,195	812	6,569	16	27	3,081	1,588	11,280	2,139	*31,993*	4,063	1,846	9,154	4,440	1	2,013	17	3,106	10,548	106	105	*35,399*	-3,406	**-4,237**
Average	**12,295**	**4,012**	**6,496**	**795**	**6,558**	**13**	**23**	**3,393**	**2,053**	**12,039**	**2,139**	**37,776**	**4,731**	**1,659**	**9,188**	**4,630**	**1**	**2,211**	**21**	**4,538**	**10,589**	**180**	**112**	**37,859**	**-83**	**11,589**

[A]Water Year corresponds to October 1 of the previous year, through September 30th of the current year.

[B]Return flows consist of water that recharges the Subbasin via municipal distribution network leaks, septic system discharges, and infiltration of irrigation water

[C]Represents surface water diversions through the operation of YVWD-25

[D]The YIHM calculates groundwater discharges to land surface when groundwater elevations in a given cell are higher than the top elevation of the cell

Table 2C-17: Parameter groups included in YIHM Calibration and Sensitivity Analysis		
Group Name	Model Component	Parameter Description
A	PRMS	Solar Radiation and PET parameters
B	PRMS, MODFLOW	Soil zone and
C	MODFLOW	Hydraulic conductivity
D	MODFLOW	Storage properties
E	MODFLOW	General head and constant head boundary condition properties
F	MODFLOW	Conductance parameters for faults and barriers to flow
G	MODFLOW	Streambed conductivity
H	MODFLOW	Unsaturated zone parameters, including brook-corey exponent, extinction depths, and surface leakage conductances

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Table 2C-18: Historical Water Budget for the Western Heights Management Area

Water Year[A]	Water Year Type[B]	Inflows to Principal Aquifer									Outflows from Principal Aquifer										Change in Storage	
					Subsurface Inflows									Subsurface Outflows								
		Stream Leakage	Return Flows	Precipitation Recharge	From North Bench MA	From Crafton Hills	From SBBA	From Calimesa MA	From San. Tim. MA	Subtotal	Total Inflows	ET	GW Production	GW Discharge to Streams	To North Bench MA	To Crafton Hills	To SBBA	To Calimesa MA	To San. Tim. MA	*Subtotal*	GW Discharge to Surface	Total Outflows	Annual	Cumulative
1965	Normal	0	72	80	335	11	0	733	73	*1,152*	1,305	1	2,646	0	0	0	0	60	148	*208*	0	2,855	***-1,550***	**-1,550**
1966	Above Normal	0	72	251	343	10	0	731	96	*1,181*	1,505	8	2,741	0	0	0	0	45	148	*194*	0	2,943	***-1,438***	**-2,988**
1967	Wet	0	72	260	332	10	0	708	119	*1,169*	1,502	10	2,315	0	0	0	0	45	151	*195*	0	2,520	***-1,018***	**-4,007**
1968	Normal	0	73	199	332	10	0	685	141	*1,167*	1,440	0	2,580	0	0	0	0	46	156	*202*	0	2,782	***-1,342***	**-5,349**
1969	Wet	1	72	692	341	10	0	690	176	*1,217*	1,982	16	1,986	0	0	0	0	43	162	*205*	0	2,208	***-225***	**-5,575**
1970	Dry	0	321	360	333	9	0	710	172	*1,225*	1,906	2	2,186	0	0	0	0	38	169	*208*	0	2,396	***-490***	**-6,064**
1971	Below Normal	0	202	235	334	9	0	716	150	*1,209*	1,646	2	2,259	0	0	0	0	29	171	*200*	0	2,460	***-814***	**-6,879**
1972	Dry	0	202	168	338	9	0	706	139	*1,192*	1,562	1	2,831	0	0	0	0	24	171	*195*	0	3,026	***-1,464***	**-8,343**
1973	Above Normal	0	202	153	338	9	0	686	135	*1,168*	1,523	4	2,381	0	0	0	0	20	170	*190*	0	2,575	***-1,052***	**-9,394**
1974	Below Normal	0	202	220	316	9	0	718	136	*1,180*	1,602	8	2,473	0	0	0	0	19	170	*189*	0	2,670	***-1,068***	**-10,462**
1975	Normal	0	204	179	294	9	0	737	135	*1,174*	1,557	0	2,326	0	0	0	0	27	170	*197*	0	2,523	***-966***	**-11,429**
1976	Normal	0	207	205	289	9	0	753	135	*1,186*	1,597	4	2,351	0	0	0	0	30	171	*201*	0	2,556	***-959***	**-12,388**
1977	Below Normal	0	206	190	299	8	0	768	135	*1,211*	1,607	6	2,214	0	0	0	0	27	171	*199*	0	2,418	***-811***	**-13,198**
1978	Wet	1	206	789	296	8	0	786	169	*1,260*	2,256	17	2,382	0	1	0	0	38	172	*211*	0	2,612	***-356***	**-13,554**
1979	Above Normal	0	206	489	289	8	0	828	178	*1,304*	1,999	15	2,410	0	0	0	0	43	178	*221*	0	2,646	***-648***	**-14,202**
1980	Wet	1	76	738	286	8	0	866	188	*1,349*	2,164	17	2,267	0	0	0	0	48	181	*229*	0	2,514	***-350***	**-14,552**
1981	Dry	0	32	482	284	8	0	900	173	*1,365*	1,880	0	2,236	0	0	0	0	50	184	*234*	0	2,470	***-590***	**-15,142**
1982	Above Normal	0	32	384	286	8	0	926	159	*1,379*	1,795	12	2,121	0	0	0	0	41	182	*223*	0	2,356	***-561***	**-15,703**
1983	Wet	1	32	464	277	8	0	938	178	*1,400*	1,897	16	1,957	0	0	0	0	39	183	*222*	0	2,195	***-298***	**-16,001**
1984	Dry	0	32	353	276	8	0	982	173	*1,439*	1,824	0	2,429	0	0	0	0	45	186	*232*	0	2,661	***-837***	**-16,838**
1985	Below Normal	0	50	280	284	8	0	1,010	155	*1,456*	1,787	0	2,533	0	0	0	0	45	185	*229*	0	2,762	***-975***	**-17,813**
1986	Normal	0	56	215	290	8	0	1,056	150	*1,503*	1,774	0	2,626	0	0	0	0	39	183	*222*	0	2,848	***-1,074***	**-18,887**
1987	Dry	0	56	190	294	7	0	1,086	147	*1,535*	1,781	0	2,460	0	0	0	0	32	181	*214*	0	2,674	***-894***	**-19,780**
1988	Below Normal	0	56	164	294	7	0	1,105	146	*1,552*	1,772	0	2,591	0	0	0	0	29	181	*210*	0	2,801	***-1,029***	**-20,809**
1989	Below Normal	0	56	136	296	7	0	1,122	137	*1,562*	1,754	0	2,641	0	0	0	0	28	179	*208*	0	2,848	***-1,094***	**-21,903**
1990	Dry	0	158	130	298	7	0	1,146	133	*1,584*	1,873	0	2,926	0	0	0	0	33	177	*210*	0	3,136	***-1,263***	**-23,167**
1991	Above Normal	0	192	273	297	7	0	1,131	141	*1,576*	2,042	5	2,624	0	0	0	0	32	176	*209*	0	2,838	***-796***	**-23,963**
1992	Above Normal	0	193	340	290	7	0	1,109	151	*1,557*	2,090	12	2,476	0	0	0	0	37	178	*215*	0	2,704	***-614***	**-24,576**
1993	Wet	1	411	954	283	7	0	1,097	207	*1,594*	2,961	17	2,616	0	1	0	0	53	182	*235*	0	2,868	***92***	**-24,484**
1994	Below Normal	0	432	509	293	7	0	1,132	195	*1,627*	2,568	0	2,795	0	0	0	0	68	190	*259*	0	3,054	***-487***	**-24,971**
1995	Wet	1	561	672	299	7	0	1,114	185	*1,605*	2,839	17	2,733	0	1	0	0	58	191	*249*	0	2,999	***-160***	**-25,131**
1996	Dry	0	606	455	290	7	0	1,088	172	*1,557*	2,618	0	2,863	0	0	0	0	60	193	*254*	0	3,117	***-499***	**-25,630**
1997	Above Normal	0	604	350	289	7	0	1,070	147	*1,512*	2,467	9	2,876	0	0	0	0	64	189	*253*	0	3,138	***-672***	**-26,302**
1998	Wet	1	604	528	279	7	0	1,066	175	*1,527*	2,660	15	3,228	0	0	0	0	71	188	*259*	0	3,502	***-842***	**-27,144**
1999	Dry	0	604	396	277	7	0	1,073	179	*1,536*	2,536	0	2,842	0	0	0	0	85	192	*278*	0	3,120	***-584***	**-27,728**
2000	Dry	0	640	298	283	7	0	1,051	148	*1,488*	2,426	0	2,503	0	0	0	0	77	190	*268*	0	2,771	***-345***	**-28,073**
2001	Dry	0	649	266	258	7	0	1,037	141	*1,442*	2,358	0	2,359	0	0	0	0	91	186	*278*	0	2,637	***-279***	**-28,352**
2002	Critically Dry	0	649	226	249	7	0	1,023	135	*1,414*	2,289	0	2,466	0	0	0	0	100	184	*284*	0	2,751	***-462***	**-28,814**
2003	Above Normal	0	649	224	245	7	0	1,003	138	*1,393*	2,266	4	2,340	0	0	0	0	106	182	*288*	0	2,631	***-365***	**-29,180**
2004	Dry	0	651	205	243	7	0	988	140	*1,377*	2,233	0	2,386	0	0	0	0	108	182	*291*	0	2,676	***-443***	**-29,622**
2005	Wet	1	456	500	237	7	0	988	180	*1,412*	2,369	14	2,380	0	0	0	0	116	183	*300*	0	2,694	***-326***	**-29,948**
2006	Below Normal	0	391	340	236	7	0	979	182	*1,403*	2,134	0	2,537	0	0	0	0	123	189	*312*	0	2,848	***-714***	**-30,662**
2007	Critically Dry	0	391	219	242	6	0	986	153	*1,388*	1,998	0	2,759	0	0	0	0	125	188	*313*	0	3,072	***-1,074***	**-31,736**
2008	Normal	0	392	219	245	6	0	997	148	*1,395*	2,006	0	2,456	0	0	0	0	129	186	*315*	0	2,771	***-765***	**-32,501**
2009	Below Normal	0	391	210	245	6	0	980	146	*1,377*	1,978	0	1,961	0	0	0	0	123	184	*307*	0	2,268	***-290***	**-32,791**
2010	Above Normal	0	400	316	245	6	0	963	156	*1,370*	2,087	3	1,870	0	0	0	0	120	184	*303*	0	2,177	***-90***	**-32,881**
2011	Wet	1	403	419	246	6	0	949	174	*1,376*	2,198	5	1,943	0	0	0	0	118	186	*304*	0	2,251	***-52***	**-32,934**
2012	Dry	0	404	342	250	6	0	958	158	*1,372*	2,119	0	2,089	0	0	0	0	122	188	*310*	0	2,398	***-280***	**-33,214**
2013	Dry	0	403	261	255	6	0	978	144	*1,383*	2,047	0	2,077	0	0	0	0	126	185	*311*	0	2,389	***-342***	**-33,555**
2014	Dry	0	403	212	259	6	0	974	138	*1,377*	1,991	0	2,110	0	0	0	0	125	183	*308*	0	2,418	***-426***	**-33,981**
Historical Average		**0**	**293**	**335**	**286**	**7.64**	***0***	***937***	***153***	***1,384***	***2,011***	***5***	***2,443***	***0***	***0***	***0***	***0***	***64***	***179***	***243***	***0***	***2,691***	**-680**	
Critically Dry Wate Year Avg		0	520	223	245	7	*0*	*1,005*	*144*	*1,401*	*2,143*	*0*	*2,613*	*0*	*0*	*0*	*0*	*113*	*186*	*299*	*0*	*2,912*	-768	
Dry Water Year Avg		0	369	294	281	7	*0*	*977*	*154*	*1,419*	*2,082*	*0*	*2,450*	*0*	*0*	*0*	*0*	*73*	*184*	*256*	*0*	*2,706*	-624	
Below Normal Water Year Avg		0	221	254	289	8	*0*	*948*	*154*	*1,397*	*1,872*	*2*	*2,445*	*0*	*0*	*0*	*0*	*55*	*180*	*235*	*0*	*2,681*	-809	
Normal Water Year Avg		0	167	183	297	9	*0*	*827*	*130*	*1,263*	*1,613*	*1*	*2,497*	*0*	*0*	*0*	*0*	*55*	*169*	*224*	*0*	*2,722*	-1,109	
Above Normal Water Year Avg		0	283	309	291	8	*0*	*939*	*145*	*1,382*	*1,975*	*8*	*2,427*	*0*	*0*	*0*	*0*	*56*	*176*	*233*	*0*	*2,668*	-693	
Wet Water Year Avg		1	289	602	288	8	*0*	*920*	*175*	*1,391*	*2,283*	*14*	*2,381*	*0*	*0*	*0*	*0*	*63*	*178*	*241*	*0*	*2,636*	-354	

Table 2C-19: Historical Water Budget for the North Bench Management Area

Water Year	Water Year Type	Inflows to Principal Aquifer													Outflows from Principal Aquifer												Change in Groundwater in Storage	
						Subsurface Inflows													Subsurface Outflows										
		Stream Leakage	Return Flows	Precipitation Recharge	Surface Water Spreading	From San Bernardino Mtns	From Crafton Hills	From Yucaipa Hills	From SBBA near Mill Creek	From San Timoteo Subbasin	From Calimesa	From Western Heights	Subtotal	Total Inflows	ET	GW Production	Surface Water Diversions	GW Discharge to Streams	To San Bernardino Mtns	To Crafton Hills	To Yucaipa Hills	To SBB near Mill Creek	To San Timoteo Subbasin	To Calimesa	To Western Heights	Subtotal	GW Discharge to Surface	Total Outflows	Annual	Cumulative
1965	Normal	1,829	1,992	1,253	0	1,455	36	2,510	263	436	14	0	4,714	9,787	1,092	2,477	0	2,006	13	0	1,910	238	12	2,088	335	4,598	5	10,178	***-391***	**-391**
1966	Above Normal	2,400	1,992	3,456	0	1,596	35	2,568	242	429	17	0	4,885	12,733	1,377	3,049	31	2,371	14	0	1,940	272	14	2,101	343	4,685	6	11,518	***1,215***	**823**
1967	Wet	2,533	1,992	3,160	0	1,705	34	2,603	228	433	14	0	5,017	12,702	1,145	2,845	36	2,512	13	0	1,937	296	13	2,167	332	4,757	6	11,301	***1,401***	**2,225**
1968	Normal	2,045	1,997	1,695	0	1,837	34	2,610	223	434	14	0	5,151	10,889	1,294	3,026	16	2,242	13	0	1,927	307	13	2,210	332	4,802	5	11,385	***-496***	**1,729**
1969	Wet	3,943	1,992	7,782	0	2,374	33	2,745	203	426	14	0	5,795	19,511	1,450	3,048	127	3,564	15	0	2,047	337	15	2,247	341	5,001	8	13,197	***6,314***	**8,043**
1970	Dry	2,480	1,992	2,294	0	2,298	32	2,848	180	464	13	0	5,836	12,602	1,459	2,905	111	2,820	17	0	2,051	373	9	2,260	333	5,044	7	12,346	***256***	**8,299**
1971	Below Norm	2,629	1,991	2,122	0	2,453	32	2,727	168	456	14	0	5,851	12,592	1,375	2,544	142	2,826	18	0	2,037	389	11	2,292	334	5,082	7	11,975	***617***	**8,916**
1972	Dry	2,391	1,996	1,574	0	2,295	32	2,702	163	452	15	0	5,658	11,620	1,543	2,597	156	2,602	21	0	2,000	403	12	2,361	338	5,135	5	12,038	***-418***	**8,498**
1973	Above Norm	3,131	1,991	3,300	0	2,241	32	2,660	159	433	18	0	5,543	13,964	1,265	3,133	217	3,117	20	0	1,999	414	15	2,392	338	5,177	6	12,914	***1,049***	**9,547**
1974	Below Norm	2,755	1,991	2,425	0	2,070	31	2,754	155	434	14	0	5,457	12,628	1,466	4,030	206	2,851	20	0	1,987	429	15	2,387	316	5,155	6	13,715	***-1,086***	**8,461**
1975	Normal	2,380	2,008	1,501	0	2,021	31	2,731	151	439	14	0	5,386	11,276	1,220	3,326	133	2,523	19	0	1,959	440	14	2,339	294	5,065	6	12,273	***-997***	**7,463**
1976	Normal	2,546	2,020	2,031	0	2,077	31	2,678	150	436	15	0	5,387	11,984	1,282	3,257	88	2,490	18	0	1,942	442	15	2,295	289	5,001	5	12,123	***-138***	**7,325**
1977	Below Norm	2,436	2,015	2,199	0	2,093	31	2,659	154	434	15	0	5,385	12,035	1,269	3,075	100	2,505	19	0	1,936	427	16	2,266	299	4,963	6	11,918	***118***	**7,443**
1978	Wet	4,728	2,015	10,722	0	2,517	30	3,024	152	454	13	1	6,191	23,656	1,676	2,739	220	4,464	19	0	2,173	433	13	2,370	296	5,304	10	14,413	***9,243***	**16,686**
1979	Above Norm	4,251	2,015	5,736	0	2,618	27	3,267	133	502	14	0	6,561	18,562	1,606	2,621	267	4,350	23	0	2,268	485	6	2,494	289	5,565	12	14,421	***4,142***	**20,828**
1980	Wet	6,368	1,096	9,452	0	3,033	25	3,558	121	540	15	0	7,293	24,209	1,946	2,985	332	6,004	25	0	2,445	517	6	2,626	286	5,905	13	17,184	***7,025***	**27,853**
1981	Dry	4,625	783	2,421	0	2,842	24	3,571	113	574	20	0	7,145	14,975	1,980	3,148	286	4,537	27	0	2,383	529	7	2,639	284	5,869	11	15,832	***-858***	**26,995**
1982	Above Norm	5,447	783	4,215	0	2,987	25	3,395	113	561	19	0	7,099	17,544	1,570	2,579	299	5,135	30	0	2,334	527	8	2,637	286	5,822	11	15,416	***2,128***	**29,123**
1983	Wet	5,952	783	6,453	0	2,913	24	3,475	110	604	21	0	7,147	20,336	1,491	2,178	332	5,790	29	0	2,388	545	8	2,729	277	5,976	13	15,781	***4,555***	**33,679**
1984	Dry	3,832	786	2,961	0	2,581	22	3,589	102	603	23	0	6,919	14,498	1,964	2,287	279	4,004	27	0	2,392	575	8	2,858	276	6,137	10	14,680	***-182***	**33,496**
1985	Below Norm	4,068	1,102	2,597	0	2,555	22	3,480	96	583	24	0	6,761	14,528	1,852	2,233	268	4,014	27	0	2,362	583	9	2,913	284	6,179	9	14,554	***-27***	**33,470**
1986	Normal	3,841	1,209	2,007	0	2,505	22	3,393	91	581	25	0	6,617	13,674	1,754	2,337	257	3,815	26	0	2,306	592	9	2,864	290	6,087	8	14,258	***-584***	**32,885**
1987	Dry	3,192	1,209	1,376	0	2,385	22	3,308	90	576	24	0	6,406	12,182	1,637	2,255	230	3,287	24	0	2,263	596	8	2,817	294	6,003	7	13,419	***-1,237***	**31,649**
1988	Below Norm	3,007	1,212	1,387	0	2,304	23	3,223	93	572	25	0	6,240	11,846	1,499	2,366	218	3,132	23	0	2,224	590	8	2,817	294	5,957	6	13,178	***-1,333***	**30,316**
1989	Below Norm	2,612	1,209	1,289	0	2,122	23	3,137	100	558	24	0	5,964	11,074	1,576	2,653	194	2,831	22	0	2,180	569	8	2,781	296	5,856	5	13,116	***-2,042***	**28,274**
1990	Dry	2,390	852	760	0	1,953	23	3,065	108	553	22	0	5,724	9,726	1,429	2,926	172	2,607	21	0	2,140	549	7	2,773	298	5,789	5	12,928	***-3,202***	**25,072**
1991	Above Norm	3,110	732	3,831	0	1,959	24	3,066	118	539	22	0	5,726	13,400	1,533	3,343	198	3,032	19	0	2,158	524	9	2,783	297	5,790	5	13,902	***-502***	**24,569**
1992	Above Norm	3,166	734	3,882	0	1,986	24	3,174	121	546	20	0	5,870	13,652	1,613	3,575	235	3,268	18	0	2,216	518	7	2,770	290	5,820	7	14,518	***-866***	**23,704**
1993	Wet	5,274	733	11,331	0	2,434	22	3,597	122	585	18	1	6,780	24,119	1,935	3,095	302	5,152	22	0	2,451	514	6	2,796	283	6,072	11	16,567	***7,552***	**31,255**
1994	Below Norm	3,709	733	2,711	0	2,454	20	3,651	103	610	20	0	6,859	14,012	1,724	3,164	279	3,953	19	0	2,458	544	6	2,801	293	6,121	10	15,252	***-1,239***	**30,016**
1995	Wet	6,562	895	8,087	0	2,873	20	3,685	105	597	21	1	7,301	22,845	1,948	2,793	354	6,340	22	0	2,533	544	7	2,882	299	6,287	12	17,732	***5,113***	**35,129**
1996	Dry	4,661	952	2,519	0	2,530	19	3,733	91	614	23	0	7,009	15,141	2,191	3,056	330	4,825	21	0	2,503	591	7	3,000	290	6,412	9	16,822	***-1,680***	**33,449**
1997	Above Norm	4,618	950	3,170	0	2,470	19	3,601	82	587	24	0	6,781	15,518	2,103	3,322	305	4,609	22	0	2,460	611	7	3,037	289	6,426	8	16,773	***-1,255***	**32,194**
1998	Wet	6,527	950	8,059	0	2,743	18	3,692	79	614	22	0	7,169	22,704	1,762	3,279	347	6,395	23	0	2,532	633	7	3,063	279	6,537	12	18,331	***4,373***	**36,567**
1999	Dry	4,078	950	1,928	0	2,404	18	3,756	73	623	22	0	6,895	13,850	1,918	4,203	315	4,450	21	0	2,511	663	7	3,072	277	6,552	10	17,447	***-3,597***	**32,971**
2000	Dry	3,974	1,193	1,696	0	2,425	19	3,620	73	599	23	0	6,759	13,622	2,062	5,509	299	4,026	21	0	2,474	650	7	3,002	283	6,438	8	18,341	***-4,718***	**28,252**
2001	Dry	3,940	1,271	1,731	0	2,417	20	3,475	78	580	24	0	6,594	13,536	1,804	5,252	297	4,050	20	0	2,411	620	7	2,838	258	6,155	8	17,566	***-4,030***	**24,223**
2002	Critically Dr	2,801	1,271	747	36	2,206	22	3,412	83	567	22	0	6,312	11,168	1,817	5,560	235	3,178	21	0	2,349	601	7	2,704	249	5,930	6	16,727	***-5,560***	**18,663**
2003	Above Norm	3,302	1,271	2,166	691	2,133	23	3,298	92	558	23	0	6,128	13,558	1,633	5,117	242	3,423	20	0	2,319	576	7	2,563	245	5,730	13	16,158	***-2,600***	**16,063**
2004	Dry	2,802	1,274	1,562	624	1,988	24	3,285	100	552	21	0	5,970	12,232	1,774	5,443	215	3,072	17	0	2,299	559	6	2,441	243	5,565	15	16,083	***-3,851***	**12,211**
2005	Wet	4,813	2,339	8,047	135	2,257	23	3,471	100	560	19	0	6,430	21,765	1,819	5,426	276	4,773	19	0	2,408	566	6	2,367	237	5,605	12	17,912	***3,853***	**16,064**
2006	Below Norm	2,942	2,700	2,113	17	2,152	22	3,555	84	582	18	0	6,413	14,184	1,795	5,187	239	3,373	17	0	2,411	611	6	2,347	236	5,628	8	16,230	***-2,046***	**14,019**
2007	Critically Dr	2,484	2,700	1,115	4	2,284	22	3,393	77	568	22	0	6,366	12,669	1,866	4,999	199	2,918	17	0	2,359	620	7	2,303	242	5,548	6	15,535	***-2,866***	**11,153**
2008	Normal	3,082	2,707	2,101	551	2,292	23	3,250	79	558	22	0	6,223	14,664	1,886	3,967	218	3,289	17	0	2,319	615	7	2,285	245	5,488	12	14,859	***-195***	**10,958**
2009	Below Norm	2,989	2,700	2,290	1,337	2,096	22	3,178	78	546	17	0	5,937	15,252	1,957	3,679	215	3,252	17	0	2,262	625	6	2,273	245	5,430	33	14,566	***686***	**11,644**
2010	Above Norm	4,099	3,347	4,485	3,549	1,985	22	3,187	73	526	16	0	5,809	21,289	1,954	3,956	236	4,187	18	0	2,253	666	8	2,291	245	5,482	107	15,921	***5,367***	**17,011**
2011	Wet	4,414	3,565	5,436	3,071	2,000	21	3,254	60	536	14	0	5,885	22,371	2,041	3,737	254	4,513	17	0	2,282	738	6	2,472	246	5,761	122	16,428	***5,943***	**22,954**
2012	Dry	3,216	3,575	2,564	2,936	1,886	20	3,291	45	544	13	0	5,799	18,091	2,154	3,806	209	3,622	16	0	2,280	809	6	2,683	250	6,045	93	15,929	***2,161***	**25,115**
2013	Dry	2,988	3,565	2,188	2,170	2,030	19	3,191	38	537	17	0	5,831	16,741	2,041	3,530	182	3,312	16	0	2,242	847	6	2,828	255	6,195	75	15,334	***1,407***	**26,522**
2014	Dry	2,634	3,565	1,541	521	2,005	18	3,100	35	529	16	0	5,703	13,964	1,933	4,560	176	2,899	16	0	2,204	867	6	2,996	259	6,348	25	15,941	***-1,977***	**24,545**
Historical Average		**3,600**	**1,714**	**3,429**	**313**	**2,277**	**25**	**3,204**	**117**	**533**	**19**	**0**	**6,174**	**15,230**	**1,690**	**3,444**	**217**	**3,686**	**20**	**0**	**2,244**	**539**	**9**	**2,586**	**286**	**5,685**	**16**	**14,739**	**491**	
ically Dry Wate Year A		2,643	1,985	931	20	2,245	22	3,402	80	568	22	0	6,339	11,919	1,841	5,280	217	3,048	19	0	2,354	610	7	2,503	245	5,739	6	16,131	**-4,213**	
Dry Water Year Avg		3,372	1,712	1,937	447	2,289	22	3,324	92	557	20	0	6,303	13,770	1,849	3,677	233	3,579	20	0	2,297	616	8	2,755	281	5,978	20	15,336	**-1,566**	
w Normal Water Year		3,016	1,739	2,126	150	2,255	25	3,152	115	531	19	0	6,096	13,128	1,612	3,215	207	3,193	20	0	2,206	530	9	2,542	289	5,597	10	13,834	**-706**	
lormal Water Year Av		2,621	1,989	1,765	92	2,031	29	2,862	159	481	17	0	5,580	12,046	1,421	3,065	119	2,727	18	0	2,061	439	12	2,347	297	5,173	7	12,513	**-467**	
ve Normal Water Year		3,725	1,535	3,804	471	2,219	25	3,135	126	520	19	0	6,045	15,580	1,628	3,411	226	3,721	20	0	2,216	510	9	2,563	291	5,611	19	14,616	**964**	
Wet Water Year Avg		5,111	1,636	7,853	321	2,485	25	3,310	128	535	17	0	6,501	21,422	1,721	3,212	258	4,951	20	0	2,319	512	9	2,572	288	5,720	22	15,885	**5,537**	

Table 2C-20: Historical Water Budget for the Calimesa Management Area

Water Year	Water Year Type	Inflows to Principal Aquifer										Outflows from Principal Aquifer										Change in Groundwater in Storage	
					Subsurface Inflows										Subsurface Outflows								
		Stream Leakage	Return Flows	Precipitation Recharge	From Yucaipa Hills	From North Bench	From Western Heights	From Beaumont Basin	From San Timoteo MA	From San Timoteo subbasin	Subtotal	Total Inflows	ET	GW Production	GW Discharge to Streams	To Yucaipa Hills	To North Bench	To Western Heigths	To Beaumont Basin	To San Timoteo Subbasin	To San Timoteo MA	Subtotal	GW Discharge to Surface	Total Outflows	Annual	Cumulative
1965	Normal	419	36	798	222	2,088	60	1,660	11	322	4,363	5,616	132	3,814	30	15	14	733	565	34	524	1,885	1	5,862	***-246***	**-246**
1966	Above Normal	427	36	1,157	223	2,101	45	1,754	16	313	4,451	6,071	146	4,915	31	18	17	731	568	42	525	1,901	1	6,994	***-923***	**-1,170**
1967	Wet	441	36	1,193	230	2,167	45	1,855	17	268	4,581	6,251	143	5,326	35	17	14	708	588	46	522	1,896	1	7,401	***-1,151***	**-2,320**
1968	Normal	422	36	1,095	251	2,210	46	1,878	14	256	4,655	6,208	153	5,173	33	18	14	685	604	47	505	1,874	1	7,234	***-1,026***	**-3,346**
1969	Wet	442	36	2,328	271	2,247	43	1,915	28	247	4,751	7,556	161	4,341	40	25	14	690	601	56	515	1,902	1	6,445	***1,111***	**-2,235**
1970	Dry	456	199	1,589	339	2,260	38	1,822	15	224	4,698	6,941	184	4,574	39	21	13	710	578	56	497	1,875	2	6,674	***267***	**-1,969**
1971	elow Norm	441	244	1,494	348	2,292	29	1,875	12	250	4,806	6,984	175	4,866	38	21	14	716	576	54	482	1,863	2	6,943	***40***	**-1,928**
1972	Dry	396	244	1,368	315	2,361	24	1,896	11	261	4,867	6,877	179	5,207	33	20	15	706	589	53	473	1,855	2	7,275	***-399***	**-2,327**
1973	bove Norm	420	244	1,492	292	2,392	20	1,875	11	267	4,856	7,012	152	4,705	38	20	18	686	588	47	461	1,820	2	6,717	***295***	**-2,032**
1974	elow Norm	416	197	1,525	282	2,387	19	1,812	12	262	4,774	6,912	169	4,794	36	20	14	718	578	51	460	1,842	1	6,842	***70***	**-1,963**
1975	Normal	397	354	1,452	275	2,339	27	1,660	12	258	4,571	6,774	152	4,659	36	17	14	737	559	48	459	1,835	1	6,684	***90***	**-1,872**
1976	Normal	368	410	1,511	281	2,295	30	1,506	11	276	4,399	6,688	157	4,572	34	19	15	753	542	48	457	1,834	1	6,598	***90***	**-1,782**
1977	elow Norm	388	409	1,644	270	2,266	27	1,410	11	274	4,257	6,698	163	4,427	36	20	15	768	527	50	456	1,835	1	6,463	***236***	**-1,546**
1978	Wet	425	409	3,497	288	2,370	38	1,591	79	215	4,581	8,912	186	4,660	45	33	13	786	535	64	454	1,886	2	6,778	***2,134***	**588**
1979	bove Norm	454	409	2,754	375	2,494	43	1,540	34	195	4,681	8,298	200	4,519	54	29	14	828	541	61	458	1,930	3	6,706	***1,592***	**2,180**
1980	Wet	459	2,085	4,319	400	2,626	48	1,292	24	184	4,574	11,437	248	4,500	61	40	15	866	501	70	506	1,999	4	6,811	***4,626***	**6,806**
1981	Dry	458	2,640	3,492	458	2,639	50	908	12	173	4,240	10,830	291	4,544	53	36	20	900	459	62	512	1,990	5	6,882	***3,948***	**10,754**
1982	bove Norm	454	2,640	3,493	428	2,637	41	646	9	194	3,954	10,541	262	3,952	55	36	19	926	435	59	521	1,997	5	6,271	***4,270***	**15,024**
1983	Wet	450	2,640	3,759	382	2,729	39	521	8	165	3,843	10,693	322	4,025	63	39	21	938	433	64	538	2,034	6	6,451	***4,242***	**19,266**
1984	Dry	456	2,648	2,943	389	2,858	45	426	8	158	3,885	9,931	498	5,413	52	37	23	982	423	63	557	2,084	6	8,053	***1,878***	**21,144**
1985	elow Norm	450	4,128	3,089	381	2,913	45	398	7	176	3,919	11,587	519	5,645	50	40	24	1,010	418	60	577	2,129	7	8,350	***3,237***	**24,381**
1986	Normal	449	4,630	3,071	349	2,864	39	269	6	167	3,694	11,844	561	4,740	69	37	25	1,056	493	58	607	2,274	9	7,653	***4,191***	**28,572**
1987	Dry	449	4,630	2,354	332	2,817	32	206	5	156	3,549	10,981	693	5,172	94	36	24	1,086	494	56	636	2,332	10	8,301	***2,681***	**31,252**
1988	elow Norm	446	4,642	1,937	310	2,817	29	175	5	152	3,488	10,513	736	5,764	106	36	25	1,105	547	51	664	2,427	12	9,045	***1,467***	**32,720**
1989	elow Norm	433	4,630	1,694	296	2,781	28	162	4	153	3,425	10,182	790	5,811	104	35	24	1,122	594	54	681	2,509	13	9,226	***955***	**33,675**
1990	Dry	417	1,180	933	284	2,773	33	222	5	181	3,497	6,028	734	5,601	92	29	22	1,146	591	46	681	2,516	12	8,955	***-2,927***	**30,748**
1991	bove Norm	433	17	1,074	268	2,783	32	428	6	231	3,748	5,272	632	5,512	72	27	22	1,131	448	45	656	2,330	8	8,554	***-3,281***	**27,467**
1992	bove Norm	446	17	1,291	257	2,770	37	604	7	246	3,920	5,674	592	5,536	57	27	20	1,109	423	50	641	2,270	6	8,461	***-2,787***	**24,679**
1993	Wet	452	27	3,138	281	2,796	53	752	31	225	4,138	7,756	582	5,611	72	36	18	1,097	456	57	672	2,336	7	8,608	***-853***	**23,827**
1994	elow Norm	455	28	2,025	372	2,801	68	746	10	266	4,264	6,771	525	5,834	43	33	20	1,132	477	51	615	2,329	7	8,738	***-1,967***	**21,860**
1995	Wet	453	31	2,676	361	2,882	58	708	15	283	4,307	7,468	461	6,186	49	33	21	1,114	512	61	600	2,342	7	9,045	***-1,577***	**20,283**
1996	Dry	458	32	1,725	381	3,000	60	742	10	308	4,502	6,718	448	6,770	27	28	23	1,088	495	58	570	2,262	6	9,513	***-2,795***	**17,488**
1997	bove Norm	455	32	1,561	365	3,037	64	837	9	350	4,661	6,709	383	6,831	22	29	24	1,070	509	53	547	2,232	5	9,473	***-2,763***	**14,724**
1998	Wet	453	32	2,779	344	3,063	71	980	16	334	4,808	8,073	330	5,854	32	36	22	1,066	501	58	544	2,228	5	8,450	***-377***	**14,347**
1999	Dry	459	32	2,017	375	3,072	85	1,026	11	331	4,901	7,409	352	6,871	29	26	22	1,073	510	55	518	2,205	5	9,462	***-2,053***	**12,294**
2000	Dry	457	33	1,742	391	3,002	77	1,145	9	378	5,003	7,236	358	6,830	21	31	23	1,051	541	54	501	2,201	4	9,415	***-2,179***	**10,115**
2001	Dry	455	34	1,391	361	2,838	91	972	9	380	4,650	6,530	312	6,578	21	26	24	1,037	618	51	485	2,242	4	9,156	***-2,626***	**7,489**
2002	ritically Dr	455	34	1,044	335	2,704	100	863	9	408	4,419	5,951	293	7,175	19	24	22	1,023	776	47	476	2,367	3	9,857	***-3,906***	**3,584**
2003	bove Norm	454	34	902	308	2,563	106	941	10	431	4,358	5,747	258	6,910	22	25	23	1,003	770	45	464	2,331	2	9,523	***-3,777***	**-193**
2004	Dry	453	34	911	296	2,441	108	929	10	432	4,217	5,615	236	6,242	19	24	21	988	1,053	48	452	2,586	2	9,085	***-3,470***	**-3,663**
2005	Wet	451	35	2,106	286	2,367	116	936	22	412	4,139	6,730	217	5,711	29	34	19	988	1,010	58	456	2,564	2	8,522	***-1,792***	**-5,454**
2006	elow Norm	457	35	1,628	339	2,347	123	920	15	406	4,150	6,271	203	5,751	23	25	18	979	1,135	53	430	2,639	3	8,619	***-2,348***	**-7,802**
2007	ritically Dr	455	35	1,153	348	2,303	125	932	12	451	4,172	5,815	193	5,407	19	24	22	986	1,455	54	411	2,952	2	8,573	***-2,758***	**-10,560**
2008	Normal	455	35	1,513	330	2,285	129	944	12	458	4,157	6,160	185	4,972	22	24	22	997	1,002	51	400	2,495	2	7,676	***-1,516***	**-12,076**
2009	elow Norm	453	35	1,268	304	2,273	123	959	12	445	4,117	5,873	186	4,532	25	22	17	980	689	49	392	2,147	2	6,892	***-1,019***	**-13,095**
2010	bove Norm	453	39	1,439	278	2,291	120	933	16	424	4,062	5,993	163	4,574	27	22	16	963	669	52	392	2,115	2	6,882	***-889***	**-13,984**
2011	Wet	454	41	1,866	270	2,472	118	884	21	398	4,162	6,522	171	4,159	30	22	14	949	652	54	395	2,086	2	6,447	***74***	**-13,910**
2012	Dry	458	41	1,620	293	2,683	122	823	16	383	4,319	6,437	187	4,279	29	20	13	958	674	49	385	2,101	2	6,598	***-161***	**-14,070**
2013	Dry	450	41	1,469	301	2,828	126	763	15	391	4,423	6,383	173	4,734	27	21	17	978	763	50	380	2,208	2	7,143	***-761***	**-14,831**
2014	Dry	434	41	1,567	298	2,996	125	721	15	399	4,554	6,596	169	5,227	24	19	16	974	931	51	375	2,365	1	7,786	***-1,191***	**-16,021**
Historical Average		**442**	**812**	**1,918**	**320**	**2,586**	***64***	***1,035***	***14***	***290***	***4,310***	***7,481***	***314***	***5,276***	***42***	***27***	***19***	***937***	***620***	***53***	***510***	***2,165***	***4***	***7,802***	**-320**	
ically Dry Wate Year		455	34	1,098	341	2,503	*113*	*897*	*11*	*429*	*4,295*	*5,883*	*243*	*6,291*	*19*	*24*	*22*	*1,005*	*1,116*	*50*	*444*	*2,659*	*3*	*9,215*	*-3,332*	
Dry Water Year Avg		447	845	1,794	344	2,755	*73*	*900*	*11*	*297*	*4,379*	*7,465*	*344*	*5,574*	*40*	*27*	*20*	*977*	*623*	*54*	*501*	*2,201*	*4*	*8,164*	*-699*	
w Normal Water Year		438	1,594	1,812	322	2,542	*55*	*940*	*10*	*265*	*4,133*	*7,977*	*385*	*5,269*	*51*	*28*	*19*	*948*	*616*	*53*	*529*	*2,191*	*5*	*7,902*	*75*	
lormal Water Year Av		418	917	1,573	285	2,347	*55*	*1,319*	*11*	*290*	*4,307*	*7,215*	*223*	*4,655*	*37*	*22*	*17*	*827*	*628*	*48*	*492*	*2,033*	*3*	*6,951*	*264*	
ve Normal Water Yea		444	385	1,685	310	2,563	*56*	*1,062*	*13*	*295*	*4,299*	*6,813*	*310*	*5,273*	*42*	*26*	*19*	*939*	*550*	*51*	*518*	*2,103*	*4*	*7,731*	*-918*	
Wet Water Year Avg		448	537	2,766	311	2,572	*63*	*1,143*	*26*	*273*	*4,389*	*8,140*	*282*	*5,037*	*46*	*32*	*17*	*920*	*579*	*59*	*520*	*2,127*	*4*	*7,496*	*644*	

Table 2C-21: Historical Water Budget for the San Timoteo Management Area

Water Year	Water Year Type	Inflows to Principal Aquifer									Outflows from Principal Aquifer										Change in Storage	
					Subsurface Inflows									Subsurface Outflows								
		Stream Leakage	Return Flows	Precipitation Recharge	From Beaumont Basin	From San Timoteo Subbasin	From SBBA	From Western Heights	From Calimesa	Total Subsurface Inflows	Total Inflows	ET	GW Production	GW Discharge to Streams	To Beaumont Basin	To San Timoteo Subbasin	To SBBA	To Western Heights	To Calimesa	To Subsurface Outflows	GW Discharge to Surface	Total Outflows	Annual	Cumulative
1965	Normal	7,169	1	77	363	5,753	6	148	524	6,794	14,041	1,115	962	163	175	8,933	3,042	73	11	12,236	2	14,477	***-436***	**-436**
1966	Above Normal	7,614	1	289	361	5,708	6	148	525	6,748	14,652	1,166	904	228	173	8,898	3,192	96	16	12,376	2	14,675	***-23***	**-459**
1967	Wet	7,681	1	344	356	5,681	6	151	522	6,717	14,742	1,101	571	246	172	8,886	3,220	119	17	12,414	2	14,334	***408***	**-51**
1968	Normal	7,220	1	176	354	5,689	6	156	505	6,710	14,107	1,164	327	147	170	8,914	3,049	141	14	12,288	1	13,928	***179***	**129**
1969	Wet	8,035	1	1,076	336	5,627	6	162	515	6,647	15,759	1,193	283	363	164	8,801	3,313	176	28	12,483	2	14,324	***1,434***	**1,563**
1970	Dry	7,405	3	315	326	5,624	6	169	497	6,622	14,345	1,280	195	159	159	8,893	3,117	172	15	12,356	2	13,992	***352***	**1,915**
1971	elow Norm	7,313	3	237	330	5,621	6	171	482	6,609	14,161	1,222	181	175	157	8,916	3,123	150	12	12,358	2	13,938	***223***	**2,139**
1972	Dry	7,215	3	191	327	5,643	6	171	473	6,620	14,029	1,281	185	148	158	8,952	3,091	139	11	12,351	2	13,966	***63***	**2,201**
1973	bove Norm	7,361	3	196	321	5,586	6	170	461	6,544	14,104	1,058	191	237	158	8,941	3,251	135	11	12,495	3	13,984	***120***	**2,322**
1974	elow Norm	7,491	3	288	316	5,571	6	170	460	6,523	14,306	1,246	187	221	158	8,935	3,259	136	12	12,501	2	14,157	***149***	**2,470**
1975	Normal	7,281	4	184	314	5,565	6	170	459	6,515	13,984	1,173	189	189	158	8,947	3,200	135	12	12,452	2	14,005	***-21***	**2,450**
1976	Normal	7,616	5	304	314	5,569	6	171	457	6,517	14,442	1,219	187	223	160	8,958	3,267	135	11	12,530	2	14,161	***281***	**2,731**
1977	elow Norm	7,273	5	205	311	5,539	6	171	456	6,483	13,966	1,315	190	176	160	8,954	3,205	135	11	12,465	2	14,148	***-182***	**2,548**
1978	Wet	8,141	5	1,137	292	5,540	6	172	454	6,465	15,748	1,257	222	400	160	8,854	3,463	169	79	12,725	3	14,606	***1,142***	**3,690**
1979	bove Norm	7,949	5	445	305	5,554	6	178	458	6,500	14,898	1,251	214	271	157	8,950	3,482	178	34	12,801	3	14,540	***358***	**4,048**
1980	Wet	8,348	21	1,167	288	5,626	6	181	506	6,606	16,142	1,340	323	384	153	8,933	3,500	188	24	12,799	3	14,848	***1,294***	**5,342**
1981	Dry	7,850	26	443	280	5,666	6	184	512	6,647	14,966	1,588	269	184	153	9,014	3,323	173	12	12,675	2	14,718	***248***	**5,590**
1982	bove Norm	8,086	26	454	281	5,697	6	182	521	6,687	15,254	1,308	228	300	157	9,013	3,577	159	9	12,914	3	14,753	***501***	**6,091**
1983	Wet	8,281	26	481	268	5,688	6	183	538	6,684	15,472	1,281	192	331	165	9,028	3,703	178	8	13,082	4	14,889	***582***	**6,673**
1984	Dry	7,892	27	325	257	5,715	6	186	557	6,722	14,965	1,655	149	201	174	9,113	3,430	173	8	12,898	2	14,906	***59***	**6,733**
1985	elow Norm	7,817	57	309	255	5,708	6	185	577	6,730	14,913	1,503	122	233	183	9,093	3,498	155	7	12,936	3	14,797	***115***	**6,848**
1986	Normal	7,733	67	274	245	5,711	6	183	607	6,751	14,825	1,542	120	222	192	9,109	3,450	150	6	12,907	3	14,793	***31***	**6,879**
1987	Dry	7,648	67	250	232	5,698	6	181	636	6,753	14,717	1,547	100	212	204	9,115	3,441	147	5	12,911	3	14,773	***-56***	**6,823**
1988	elow Norm	7,656	67	233	224	5,688	6	181	664	6,763	14,720	1,503	135	221	215	9,138	3,468	146	5	12,972	3	14,833	***-114***	**6,709**
1989	elow Norm	7,556	67	218	220	5,664	6	179	681	6,750	14,590	1,519	161	208	224	9,104	3,435	137	4	12,905	2	14,795	***-204***	**6,505**
1990	Dry	7,478	17	201	220	5,658	6	177	681	6,742	14,438	1,525	173	193	232	9,102	3,364	133	5	12,835	2	14,728	***-290***	**6,215**
1991	bove Norm	7,731	1	499	226	5,660	6	176	656	6,725	14,955	1,457	179	299	234	9,030	3,507	141	6	12,918	3	14,856	***99***	**6,314**
1992	bove Norm	7,777	1	398	228	5,673	6	178	641	6,726	14,902	1,446	156	270	233	9,074	3,564	151	7	13,029	3	14,903	***-1***	**6,313**
1993	Wet	8,406	2	1,584	202	5,672	6	182	672	6,734	16,726	1,454	158	482	227	8,974	3,612	207	31	13,051	4	15,150	***1,576***	**7,889**
1994	elow Norm	8,037	2	398	218	5,685	6	190	615	6,715	15,151	1,567	154	237	219	9,090	3,601	195	10	13,115	3	15,075	***76***	**7,966**
1995	Wet	8,299	2	924	228	5,739	6	191	600	6,764	15,988	1,450	158	425	212	9,020	3,683	185	15	13,115	4	15,152	***836***	**8,802**
1996	Dry	7,943	2	371	233	5,800	6	193	570	6,802	15,117	1,713	152	217	206	9,145	3,604	172	10	13,137	3	15,222	***-106***	**8,696**
1997	bove Norm	7,823	2	361	250	5,831	6	189	547	6,823	15,009	1,645	155	264	200	9,123	3,619	147	9	13,097	3	15,164	***-155***	**8,541**
1998	Wet	8,374	2	888	246	5,828	6	188	544	6,813	16,076	1,358	150	443	195	9,072	3,831	175	16	13,288	4	15,244	***832***	**9,373**
1999	Dry	8,003	2	382	248	5,830	6	192	518	6,795	15,182	1,707	149	240	189	9,165	3,675	179	11	13,220	3	15,319	***-137***	**9,236**
2000	Dry	7,872	2	307	264	5,890	6	190	501	6,852	15,033	1,756	146	232	186	9,199	3,627	148	9	13,168	3	15,304	***-271***	**8,965**
2001	Dry	7,851	2	277	269	5,880	6	186	485	6,827	14,957	1,582	141	268	182	9,163	3,738	141	9	13,232	3	15,227	***-270***	**8,695**
2002	ritically Dr	7,640	2	228	273	5,889	6	184	476	6,828	14,697	1,754	144	203	179	9,180	3,526	135	9	13,029	3	15,133	***-436***	**8,259**
2003	bove Norm	7,834	2	297	278	5,857	6	182	464	6,787	14,920	1,540	146	277	176	9,154	3,717	138	10	13,195	3	15,161	***-241***	**8,018**
2004	Dry	7,683	2	248	283	5,864	6	182	452	6,788	14,721	1,639	145	226	171	9,178	3,596	140	10	13,096	3	15,109	***-388***	**7,630**
2005	Wet	8,296	1	967	269	5,823	6	183	456	6,738	16,002	1,433	44	447	163	9,048	3,846	180	22	13,259	4	15,188	***814***	**8,444**
2006	elow Norm	7,910	1	368	272	5,819	6	189	430	6,716	14,995	1,687	4	232	155	9,144	3,637	182	15	13,133	3	15,059	***-64***	**8,380**
2007	ritically Dr	7,641	1	258	286	5,846	6	188	411	6,737	14,637	1,764	0	195	149	9,160	3,482	153	12	12,956	2	14,918	***-281***	**8,099**
2008	Normal	7,747	1	266	290	5,861	6	186	400	6,744	14,757	1,594	0	244	146	9,168	3,661	148	12	13,134	3	14,975	***-217***	**7,882**
2009	elow Norm	7,670	1	237	292	5,835	6	184	392	6,708	14,617	1,625	0	226	143	9,145	3,589	146	12	13,035	3	14,888	***-272***	**7,610**
2010	bove Norm	7,863	1	447	289	5,803	6	184	392	6,674	14,986	1,514	0	314	141	9,105	3,657	156	16	13,074	3	14,905	***81***	**7,691**
2011	Wet	8,056	1	663	277	5,774	6	186	395	6,638	15,358	1,523	0	349	139	9,085	3,744	174	21	13,163	4	15,039	***319***	**8,010**
2012	Dry	7,729	1	309	278	5,794	6	188	385	6,651	14,690	1,725	0	212	138	9,172	3,547	158	16	13,030	3	14,970	***-280***	**7,730**
2013	Dry	7,652	1	246	288	5,797	6	185	380	6,656	14,555	1,593	0	224	136	9,134	3,594	144	15	13,022	3	14,842	***-287***	**7,444**
2014	Dry	7,565	1	224	292	5,803	6	183	375	6,659	14,450	1,666	0	203	136	9,142	3,474	138	15	12,905	2	14,776	***-326***	**7,117**
Historical Average		**7,770**	**11**	**419**	**280**	**5,721**	**6**	**179**	**510**	**6,695**	**14,895**	**1,451**	**183**	**255**	**175**	**9,047**	**3,472**	**153**	**14**	**12,861**	**3**	**14,753**	**142**	
ically Dry Wate Year A		7,640	1	243	279	5,868	6	186	444	6,783	14,667	1,759	72	199	164	9,170	3,504	144	11	12,993	2	15,026	-358	
Dry Water Year Avg		7,699	11	292	271	5,761	6	184	501	6,724	14,726	1,590	129	209	173	9,106	3,473	154	11	12,917	2	14,847	-121	
w Normal Water Year		7,636	23	277	271	5,681	6	180	529	6,666	14,602	1,465	126	214	179	9,058	3,424	154	10	12,824	2	14,632	-30	
Normal Water Year Av		7,461	13	213	313	5,691	6	169	492	6,672	14,359	1,301	297	198	167	9,005	3,278	130	11	12,591	2	14,390	-30	
ve Normal Water Year		7,782	5	376	282	5,708	6	176	518	6,690	14,853	1,376	241	273	181	9,032	3,508	145	13	12,878	3	14,771	82	
Wet Water Year Avg		8,192	6	923	276	5,700	6	178	520	6,680	15,801	1,339	210	387	175	8,970	3,592	175	26	12,938	3	14,877	924	

Table 2C-22

Comparison of average annual water budget components for each Management Area in the Yucaipa Subbasin

Water Budget Component		Historical Simulation Period: WY 1965-2014				
			Management Area			
		Yucaipa Subbasin	Western Heights	North Bench	Calimesa	San Timoteo
Stream Leakage		11,812	0	3,600	442	7,770
Return Flows		2,829	293	1,714	812	11
Precipitation Recharge		6,101	335	3,429	1,918	419
Subsurface Inflows	From Beaumont Basin	1,315	--	--	1,035	280
	From San Timoteo Basin	6,544	--	533	290	5,721
	From SBBA	123	0	117	--	6
	From Crafton Hills	32	8	25	--	--
	From Yucaipa Hills	3,524	--	3,204	320	--
	From San Bernardino Mountains	2,277	--	2,277	--	--
	From Western Heights MA	--	--	0	64	179
	From North Bench MA	--	286	--	2,586	--
	From Calimesa MA	--	937	19	--	510
	From San Timoteo MA	--	153	--	14	--
	Total Subsurface Inflows	13,815	1,384	6,174	4,310	6,696
Surface Water Spreading		313	--	313	--	--
Average Annual Inflows		*34,870*	*2,012*	*15,231*	*7,481*	*14,896*
ET		3,460	5	1,690	314	1,451
Subsurface Outflows	To Beaumont Basin	795	--	--	620	175
	To San Timoteo Basin	9,109	--	9	53	9,047
	To SBBA	4,011	0	539	--	3,472
	To Crafton Hills	0	0	0	--	--
	To Yucaipa Hills	2,272	--	2,244	27	--
	To San Bernardino Mountains	20	--	20	--	--
	To Western Heights MA	--	--	286	937	153
	To North Bench MA	--	0	--	19	--
	To Calimesa MA	--	64	2,586	--	14
	To San Timoteo MA	--	179	--	510	--
	Total Subsurface Outflows	16,207	243	5,685	2,166	12,861
GW Discharges to Streams		3,984	0	3,686	42	255
Surface Water Diversions		217	--	217	--	--
GW Extractions		11,346	2,443	3,444	5,276	183
GW Discharge to Surface		23	0	16	4	3
Average Annual Outflows		*35,237*	*2,691*	14,737	7,802	14,753
Average Annual Change in Storage		**-367**	**-679**	**494**	**-321**	**143**

Surface Water Diversions represent extractions from YVWD Well 25

"--" represents categories that are not applicable to specific management area, or Subbasin, water budget

DRAFT

Appendix 2-D

Chapter B: YIHM, Yucaipa Subbasin, San Bernardino and Riverside Counties, California

TO BE PROVIDED UPON COMPLETION

Appendix 3-A

Drilling Logs and Well Completion Reports

QUADRUPLICATE
Use to comply with local requirements

8423

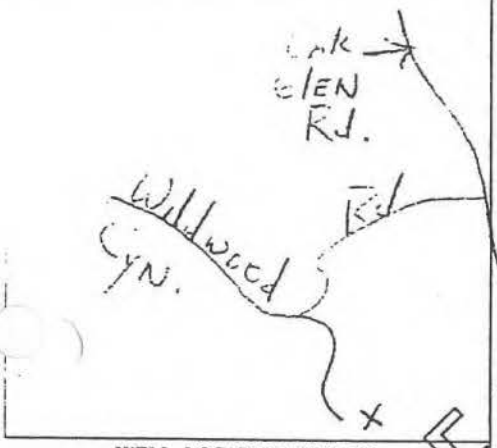
STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
WATER WELL DRILLERS REPORT

Do not fill in
No. 051199

Notice of Intent No. 8423
Local Permit No. or Date ASP Corporation
State Well No. 2S/1W-16B1
Other Well No.

(1) OWNER: Name [redacted]
Address [redacted]
City [redacted] Zip 92399

(2) LOCATION OF WELL (See instructions):
County Riverside Owner's Well Number Wildwood Canyon
Well address if different from above
Township 2S Range 1W Section 16
Distance from cities, roads, railroads, fences, etc.



WELL LOCATION SKETCH

(3) TYPE OF WORK:
New Well XX Deepening ☐
Reconstruction ☐
Reconditioning ☐
Horizontal Well ☐
Destruction ☐ (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:
Domestic ☐
Irrigation ☐
Industrial ☐
Test Well ☐
Stock ☐
Municipal ☐
Other XX

(5) EQUIPMENT:
Rotary ☐ Reverse X
Cable ☐ Air ☐
Other ☐ Bucket ☐

(6) GRAVEL PACK:
Yes XX No ☐ Size birdseye
Diameter of bore 24"
Packed from bottom to 50

(7) CASING INSTALLED:
Steel X Plastic ☐ Concrete ☐

From ft.	To ft.	Dia. in.	Gage or Wall
0	506	12	¼"

(8) PERFORATIONS:
Type of perforation or size of screen

From ft.	To ft.	Slot size
206	506	3/32
12 rows	3 inch	apart

(9) WELL SEAL:
Was surface sanitary seal provided? Yes XX No ☐ If yes, to depth 50 ft.
Were strata sealed against pollution? Yes ☐ No XX Interval ft.
Method of sealing Steel/Concrete

(10) WATER LEVELS:
Depth of first water, if known - ft.
Standing level after well completion - ft.

(11) WELL TESTS:
Was well test made? Yes XX No ☐ If yes, by whom?
Type of test Pump X Bailer ☐ Air lift ☐
Depth to water at start of test ft. At end of test ft
50 gal/min after hours Water temperature
Chemical analysis made? Yes ☐ No XX If yes, by whom?
Was electric log made? Yes ☐ No X If yes, attach copy to this report

(12) WELL LOG: Total depth 506 ft. Depth of completed well 506 ft.
from 0 ft. to 506 ft. Formation (Describe by color, character, size or material)

from ft.	to ft.	Formation
0	48	Sandy gravel
48	60	Clay
60	80	Gravel & rock
80	185	Clay
185	200	Sand
200	250	Gravel & sand
250	305	Sand
305	340	Clay
340	500	Gravel, sand & clay
500	506	Sandy clay

Work started 1-23 19 79 Completed 2-16 19 79

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
SIGNED Joseph W. Crammer (Well Driller)
NAME Jack Jones Wells & Pumps (Person, firm, or corporation) (Typed or printed)
Address P.O. Box 2031
City Hemet, California Zip 92343
License No. 281601 Date of this report 3-16-79

DWR 188 (REV. 7-76) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

GSSI
411

NOT FOR PUBLIC USE
WATER CODE SEC. 13752

Mail Two Copies to:
DEPARTMENT OF PUBLIC HEALTH
Court House
Riverside, California

WATER WELL DRILLERS REPORT

(County Ordinances No. 340 and 340A)
COUNTY OF RIVERSIDE
DEPARTMENT OF PUBLIC HEALTH

Do Not Fill In 451
State Well No 2S/1W-18L
Other Well No.
Region

(1) OWNER:

Name [redacted]
Address

(2) LOCATION OF WELL:

County Riverside Owner's number, if any— 3
1110 So. FREMONT - YUCAIPA

(3) TYPE OF WORK (check):

New well ☑ Deepening ☐ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in Item 11.

(4) PROPOSED USE (check):

Domestic ☐ Industrial ☐ Municipal ☐
Irrigation ☑ Test Well ☐ Other ☐

(5) EQUIPMENT:

Rotary ☐
Cable ☑
Dug Well ☐

(6) CASING INSTALLED:

SINGLE ☐ DOUBLE ☐

From ft.	to ft.	Diam.	Gage or Wall
0	340	12"	1/4"
339	415	10"	1/4"

Type and size of shoe or well ring 10"x3/4"x12"
Describe joint ALL JOINTS butt welded

If gravel packed

Diameter of Bore	from ft.	to ft.

Size of gravel:

(7) PERFORATIONS:

Type of perforator used Mills
Size of perforations 3/4 in., length, by 3/8 in.

From ft.	to ft.	Perf. per row	Rows per ft.
100	335	5 holes on 12" centers	

(8) CONSTRUCTION:

Was a surface sanitary seal provided? ☐ Yes ☑ No To what depth ft.
Were any strata sealed against pollution? ☐ Yes ☑ No If yes, note depth of strata

From ft. to ft.

Method of Sealing

(9) WATER LEVELS:

Depth at which water was first found 100 ft.
ing level before perforating 100 ft.
ing level after perforating 100 ft.

(10) WELL TESTS:

Was a pump test made? ☐ Yes ☑ No If yes, by whom?
Yield: gal./min. with ft. draw down after hrs.

(11) WELL LOG:

Total depth 415 ft. Depth of completed well 415 ft.
Formation: *Describe by color, character, size of material, and structure.*

ft. to	ft.	
0	80	BROWN SANDY CLAY
80	275	FRACTURED ROCK WITH CLAY STREAKS
275	412	DECOMPOSED GRANITE
412	415	HARD BLUE GRANITE

12" CASING WAS STUCK AT 340 REDUCTION TO 10" CASING 339' TO 415' WITH 10"x12" ADAPTER AT 339'

10" CASING TORCH PERFORATED

BAILER TEST SHOWING RECOVERY OF 4½ GPM BASED ON 12" 10" CASING AREA.

Work started OCT. 10 19 63. Completed DEC. 9 19 63

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME KIRKLAND WELL SERVICE
(Person, firm, or corporation) (Typed or printed)
Address 32291 DUNLAP
YUCAIPA, CALIF.
[SIGNED] K. Kirkland
Well Driller

Mail Two Copies to:
DEPARTMENT OF PUBLIC HEALTH
Court House
Riverside, California

WATER WELL DRILLERS REPORT

(County Ordinances No. 340 and 340A)
COUNTY OF RIVERSIDE
DEPARTMENT OF PUBLIC HEALTH

Do Not Fill In
State Well No. 2S/1W-18P1
Other Well No.
Region

(1) OWNER:

Name [redacted]
Address [redacted]
Los Angeles, Calif.

(2) LOCATION OF WELL:

County Riverside Owner's number, if any—
36300 1/2 Singleton Rd.
Calimesa, Calif.

(3) TYPE OF WORK (check):

New well ☑ Deepening ☐ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in Item 11.

(4) PROPOSED USE (check):

Domestic ☑ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

(5) EQUIPMENT:

Rotary ☐
Cable ☑
Dug Well ☐

(6) CASING INSTALLED:

SINGLE ☑ DOUBLE ☐

From	ft. to	ft.	Diam.	Gage or Wall
0	288	8"	3/16"	
288	300	8"	1/4"	

Type and size of shoe or well ring 8x8x1/4"
Describe joint ALL JOINTS CIRCUMFERENTIALLY Welded

If gravel packed

Diameter of Bore	from ft.	to ft.

Size of gravel:

(7) PERFORATIONS:

Type of perforator used Mills
Size of perforations 2 in., length, by 1/4 in.
From 130 ft. to 298 ft. 4 Perf. per row 1 Rows per ft.

(8) CONSTRUCTION:

Was a surface sanitary seal provided? ☑ Yes ☐ No To what depth 20 ft.
Were any strata sealed against pollution? ☐ Yes ☑ No If yes, note depth of strata
From 0 ft. to 20 ft.
Method of Sealing Clay Jel mixture

(9) WATER LEVELS:

Depth at which water was first found 132 ft.
Standing level before perforating 132 ft.
Standing level after perforating 132 ft.

(10) WELL TESTS:

Was a pump test made? ☐ Yes ☑ No If yes, by whom?
Yield: gal./min. with ft. draw down after hrs.

(11) WELL LOG:

Total depth 300 ft. Depth of completed well 300 ft.
Formation: *Describe by color, character, size of material, and structure.*

ft. to	ft.	
0	25	Brown Sandy Soil
"	"	Clay, small gravel
25	51	Brown gravel & Boulder
51	68	Brown clay & gravel
68	105	Hard Brown Sandy Clay
105	300	Brown Sandy clay
"	"	Some gravel Embedded

Work started Dec. 29 1962. Completed JAN. 22 1963

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Kirkland Well Service
(Person, firm, or corporation) (Typed or printed)
Address 32291 Dunlap Blvd.
Yucaipa Calif.
[SIGNED] K. Kirkland
Well Driller

2551
409

QUADRUPLICATE
Use to comply with local requirements

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES

WATER WELL DRILLERS REPORT

Do not fill in
No. 277307
State Well No. 2S/1W-19C
Other Well No.

of Intent No.
Local Permit No. or Date

(1) OWNER: Name [redacted]
Address [redacted]
City Redlands, CA ZIP 92374

(2) LOCATION OF WELL (See instructions):
County Riverside Owner's Well Number
Well address if different from above
Township 2-South Range 1-West Section 19
Distance from cities, roads, railroads, fences, etc.

WELL LOCATION SKETCH

(3) TYPE OF WORK:
New Well [X] Deepening [ ]
Reconstruction [ ]
Reconditioning [ ]
Horizontal Well [ ]
Destruction [ ] (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:
Domestic [X]
Irrigation [ ]
Industrial [ ]
Test Well [ ]
Municipal [ ]
Other [ ]
(Describe)

(5) EQUIPMENT:
Rotary [X] Reverse [ ]
Cable [ ] Air [ ]
Other [ ] Bucket [ ]

(6) GRAVEL PACK:
Yes [X] No [ ] Size 3/8 Spl
Diameter of bore 15
Packed from 0 ft. to 435 ft.

(7) CASING INSTALLED:
Steel [X] Plastic [ ] Concrete [ ]

(8) PERFORATIONS:
Type of perforation or size of screen: Vert. Mill Slot

From ft.	To ft.	Dia. in.	Gage or Wall
0	435	3/16	8-5/8

From ft.	To ft.	Slot size
195	275	.093
295	435	.093

(9) WELL SEAL:
Was surface sanitary seal provided? Yes [X] No [ ] If yes, to depth 50 ft
Were strata sealed against pollution? Yes [ ] No [X] Interval ft
Method of sealing Cement in Place

(10) WATER LEVELS:
Depth of first water, if known ft
Standing level after well completion 90 ft

(11) WELL TESTS:
Well test made? Yes [X] No [ ] If yes, by whom?
Type test Pump [ ] Bailer [ ] Air lift [X]
Depth to water at start of test ft At end of test ft
Discharge X gal/min after hours Water temperature
Chemical analysis made? Yes [ ] No [X] If yes, by whom?
Was electric log made Yes [ ] No [X] If yes, attach copy to this report

(12) WELL LOG: Total depth 435 ft. Completed depth 435 ft.

from ft	to ft	Formation (Describe by color, character, size or material)
0	4	Top Soil
4	54	Small Gravel
54	59	Loose Gravel
59	91	Gravel with Some Brown Clay
91	94	Loose Gravel
94	168	Sand and Gravel
168	192	Gravel and Brown Clay
192	200	Boulder Zone
200	211	Sand and Gravel
211	213	Boulder Zone
213	273	Gravel
273	275	Rock Very Hard
275	281	Hard Brown Clay
281	294	Gray Clay with Some Rock
294	321	Gravel 1" - 2"
321	334	Brown Clay and Gravel
334	342	Gravel
342	351	Brown Clay and Gravel
351	355	Gravel
355	373	Gravel
373	377	Brown Clay
377	435	Boulder Zone

Work started 10-4 19 88 Completed 10-24 19 88

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
Signed (WellDriller)
NAME McCalla Brothers - Division of Layne We (Person, firm, or corporation) (Typed or printed)
Address 3132 W. 17th St.
City Santa Ana ZIP 92703
License No. 510011 Date of this report 10-31-88

DWR 188 (REV. 12-86) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM 86 96355

COPY
VOID
WATER WELL DRILLERS REPORT

[redacted]

LOG OF WELL NO. 8
S.R. No. 36-01856

25/2W-20A #8
25/2W-20Z = USGS
NOT #8

LOCATION: Hill Ranch
NW¼ of SW¼, sect. 25, T1S, R2W, SBB&M
DRILLED BY: E. J. Brockman YEAR: March 3, 1951 completed
R. 1, Box 150
Colton, Calif.

log from YVWD = in folder for well 08

Depth From	Depth To		Material
0	4'	sand & gravel	Top Soil
4'	50'		Sand and rock 2329'
50'	85'		Sandy clay
85'	105'	sandy clay & gravel	Sand and small gravel
105'	178'		Sandy clay
178'	222'		Sand and coarse gravel 2152'
222'	260'	CL	Hard clay — 2114
260'	274'		Sand and small gravel
274'	300'	sandy clay & gravel	Sandy clay
300'	306'		Sand — 2058'
306'	340'	clay & rock	Clay and rock 2034'
340'	354'		Rock and Sand
354'	415'	sand w/ clay	Sandy clay
415'	425'		Sand
425'	478'		Sand with streaks of clay 1896'
478'	506'	CL	Hard clay

Hole was reamed to 16" to 363' and 10" x 3/16" casing installed. 10" casing was perforated with 3/16" x 4" slots 4 to the round every foot.

Hole was reamed to 10" from 363' to 506' and 6" x 1/8" casing installed. 6" casing was perforated all the way with 3/16" x 4" slots 4 to the round, one round every foot.

Hole was gravel packed with 3/8" gravel all the way.

Static water level 115'

Well on the pump test pumped the following capacities:

from 143' - 162 GPM
" 166' - 279 GPM
" 178' - 342 GPM

Rotary Rig

2S/2W-2P1 Well 8

WELL RECORD

Rec. #36 01997

SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT

Company_____

Location 8th Street South of Washington Drive Elevation = 2360'

NE 1/4 NE 1/4 Township 2 S Range 2 W Section 3

PIT

Date drilled 1959 By_____

Depth 750' Diameter_____ Packed 500'

CASING

Diameter 16" Length 500' Gauge 10 ga.

" " " " " "

Perforated interval_____

COLUMN

Diameter 8" Length 400 Gauge STD

" " " " " "

Tube diameter_____ Shaft diameter_____

BOWLS

Date installed March 18, 1963 By Turley Pump Company

Make_____ Model 10 LA Serial no. R 58225

Size 10" Stages 11 Length_____ Suction 10'

DESIGN PERFORMANCE

GPM 450	RPM 1760	TDH 400	HP 55
GPM	RPM	TDH	HP
GPM	RPM	TDH	HP

ENGINE

Date installed 3-63 (from #3 well) By_____

Type Elect. Make U.S. Model HU Serial no. 1251837

Cu. in._____ B & S_____ HP 60 RPM 1800

GEAR

Date installed_____ By_____

Make_____ Model_____ Serial no._____ HP_____

Shaft_____ Universals_____

Notes: Pump test July 25, 1966

Pump Head Jacuzzi - Pump as shown

FORM 115

INVESTIGATION

South Coastal Basin

DIVISION OF WATER RESOURCES
DEPARTMENT OF PUBLIC WORKS
STATE OF CALIFORNIA

WELL LOG

25/2W-13E2

SHEET 1

NUMBER E-138e-

LOCAL DESIGNATION Owner #4

Hicks Y-4

LOCATION 300' S. of Ave. "L," 30' E. of W. line of Lot 225, Sub. 9, Yucaipa Valley, Yucaipa. Sec. 13.

Loc. #18249A

OWNER [redacted]

DATE COMPLETED 1913

DIAMETER OF CASING 16"

DRILLED BY W. D. Anderson

SOURCE OF INFORMATION P. E. Hicks

INSPECTED WHILE DRILLING SEE FILE NO.

SURFACE ELEVATION 2453. Hicks

SKETCH

DEPTH	ELEVATION OF BOTTOM OF STRATUM	MATERIAL	THICKNESS FEET	% VOIDS	ABSOLUTE VOIDS FEET	TOTAL VOIDS FEET
0-20	2432	Packed soil	20			
44	2409	Cement gravel	24			
94	2359	Cement clay	50			
108	2345	Cement and gravel	14			
120	2333	Red clay	12			
168	2285	Gravel	48			
178	2275	Red clay	10			
182	2271	Gravel	4			
188	2265	Red clay, struck water	6			
206	2247	Water gravel	18			
208	2245	Red clay	2			
218	2235	Water gravel	10			
220	2233	Clay	2			
222	2231	Water gravel	2			
270	2183	Cement clay	48			
276	2177	Cement gravel	6			
310	2143	Red clay	34			
316	2137	Water gravel	6			
338	2115	Red clay	22			
360	2093	Water gravel	22			
362	2091	Red clay	2			
368	2085	Water gravel	6			
370	2083	Red clay	2			
372	2081	Cement gravel	36			
408	2045	Red clay	18			
426	2027	Cement gravel	18			
436	2017	Cement clay	4			
440	2013	Cement gravel	36			
476	1977	Cement clay	21			
497	1956	Cement gravel				
		Pumps 40" - Drawdown 100'.				

MICROFILMED

FOR FIELD COPIES USE ALTERNATE LINES

LOG OBTAINED BY DATE

50612 6-51 15M CALIFORNIA STATE PRINTING OFFICE

GSST 343 12

FORM 115 INVESTIGATION

DIVISION OF WATER RESOURCES
DEPARTMENT OF PUBLIC WORKS
STATE OF CALIFORNIA

2S/2W-14 F1

SHEET 1

South Coastal Basin

NUMBER E-136j-

WELL LOG

LOCAL DESIGNATION Owner #15

LOCATION 60' N. of Ave. L, 1700' W. of State Highway, Lot 213, Sub. 9, Yucaipa.

Loc. #182393

OWNER [redacted]

SKETCH

DATE COMPLETED About 1928

DIAMETER OF CASING 16"

DRILLED BY Clark McEuen

SOURCE OF INFORMATION Redlands-Yucaipa Water Co.

INSPECTED WHILE DRILLING SEE FILE NO.

SURFACE ELEVATION

DEPTH	ELEVATION OF BOTTOM OF STRATUM	MATERIAL	THICKNESS FEET	% VOIDS	ABSOLUTE VOIDS FEET	TOTAL VOIDS FEET
1-152		Top soil and clay	152			
330		Water gravel - good	178			
342		Clay and red sandstone	12			
346		Rocks, square gravel	4			
350		Clay	4			
352		Red formation - rock and gravel	2			
356		Clay	4			
358		Red rocks and gravel	2			
360		Clay	2			
		At 300' some streaks of brown sandstone were found. Very thin.				
		Pumps 100"; 100' drawdown.				

MICROFILMED

FOR FIELD COPIES USE ALTERNATE LINES

LOG OBTAINED BY DATE

GSSI 347

FORM 115

INVESTIGATION

South Coastal Basin

2S/2W-15R1

SHEET 1

DIVISION OF WATER RESOURCES
DEPARTMENT OF PUBLIC WORKS
STATE OF CALIFORNIA

NUMBER E-829-

WELL LOG

LOCAL DESIGNATION

Hicks #Y-74

LOCATION 2000' N. and 200' E. from S.W. corner Sec. 14, T.2S., R.2W., Yucaipa.

Loc. #17330-

OWNER [redacted]

DATE COMPLETED 1926

DIAMETER OF CASING 12"

DRILLED BY

SOURCE OF INFORMATION P.E.Hicks

INSPECTED WHILE DRILLING SEE FILE NO.

SURFACE ELEVATION

SKETCH

DEPTH	ELEVATION OF TOP OF STRATUM	MATERIAL	THICKNESS FEET	% VOIDS	ABSOLUTE VOIDS FEET	TOTAL VOIDS FEET
0-7c		Soil				
109		Gravel				
114		Clay and gravel mixed				
125		Clay				

MICROFILMED

FOR FIELD COPIES USE ALTERNATE LINES

GSSI 210

QUADRUPLICATE
Use to comply with
cal requirements

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
WATER WELL DRILLERS REPORT

RECEIVED
MAY 17 1990

Do not fill in

Ans'd No. 294181

Notice of Intent No. _____
Local Permit No. or Date _____

State Well No. 2S/2W-16A1
Other Well No. _____

(1) OWNER: Name [redacted]
Address [redacted]
City La Quinta, CA ZIP 92253

(2) LOCATION OF WELL (See instructions):
County Riverside Owner's Well Number 1
Well address if different from above _____
Township 2S Range 2W Section 16
Distance from cities, roads, railroads, fences, etc.
3000' W. of County Line Rd.
1000' So. of San Bernardino County Line

(3) TYPE OF WORK:
New Well [X] Deepening [ ]
Reconstruction [ ]
Reconditioning [ ]
Horizontal Well [ ]
Destruction [ ] (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:
Domestic [X]
Irrigation [ ]
Industrial [ ]
Test Well [ ]
Municipal [ ]
Other [ ]
(Describe)

WELL LOCATION SKETCH

(5) EQUIPMENT:
Rotary [ ] Reverse [X]
Cable [ ] Air [ ]
Other [ ] Bucket [ ]

(6) GRAVEL PACK:
Yes [X] No [ ] Size
Diameter of bore
Packed from ft. to ft.

(7) CASING INSTALLED:
Steel [X] Plastic [ ] Concrete [ ]

From ft.	To ft.	Dia. in.	Gage or Wall
0	760	16	5/16
760	1070	12	5/16

(8) PERFORATIONS:
Type of perforation or size of screen

From ft.	To ft.	Slot size
210	760	3/32
760	1060	3/32

(9) WELL SEAL:
Was surface sanitary seal provided? Yes [X] No [ ] If yes, to depth 100 ft.
Were strata sealed against pollution? Yes [ ] No [X] Interval _____ ft.
Method of sealing _____

(10) WATER LEVELS:
Depth of first water, if known _____ ft.
Standing level after well completion 230' ft.

(11) WELL TESTS:
Was well test made? Yes [X] No [ ] If yes, by whom? McCalla Bros.
Type of test Pump [X] Bailer [ ] Air lift [ ]
Depth to water at start of test 221 ft. At end of test 230 ft.
Discharge 1050 gal/min after 56 hours Water temperature _____
Chemical analysis made? Yes [ ] No [X] If yes, by whom? _____
Was electric log made Yes [X] No [ ] If yes, attach copy to this report

(12) WELL LOG: Total depth 1320 ft. Completed depth 1070 ft.

from ft.	to ft.	Formation (Describe by color, character, size or material)
0	30	Sandy Clay
30	80	Sand, Gravel & Clay
80	110	Sand & Gravel
110	280	Sand, Gravel, Streaks of Clay
280	460	Sand, Gravel & Rock
460	550	Brown Clay & Sandy Gravel
550	750	Rocks, Sand & Spots of Clay
750	885	Hard Granite Formation, Spots
885	975	Fine & Coarse Sand, Clay Strea
975	1087	Sandy Brown Clay
1087	1200	Granite Boulders, Spots of Cla
1200	1320	Sand, Gravel, Granite Boulders

Work started 7-19 19 89 Completed 9-20 19 89

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
Signed _____ (Well Driller)
NAME McCalla Bros., Div. of Layne-Western Co (Person, firm, or corporation) (Typed or printed)
Address 3132 W. 17th St.
City Santa Ana, CA ZIP 92703
License No 510011 Date of this report 9-22-89

COPY NOT FOR PUBLIC USE WATER CODE SEC. 13752 CONFIDENTIAL

FSI
#65

2S/2W-17K1

2S/2W-17-K1

DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WATER RESOURCES DIVISION

No. 2S/2-17K1

Other No.

WELL LOG

State Calif. County Riverside Subarea Calimesa

Owner [redacted]

Location

Drilled by Brewer and Son Address

Date March 1, 1956 Casing diam. 16 Land-surf. alt. 2335 topo.

Source of data

(Enter type of well, perforations, yield, and drawdown at end of log)

Correlation	Ft.	Material	Thickness (feet)	Depth (feet)
		Top soil	3	3
		Sand with some clay	27	30
		Brown clay	70	100
		Brown clay	32	132
		Reddish-brown clay with sand	16	148
		Yellowish clay with sand	37	185
		Sand and gravel with streaks of rock	215	400
		Mainly sand from 390-400.		
		Rotary to 400, cable tool to 500.		
		SW/L - 130-130 ft.		

GSSI
350

25/2W -24E3 Well 34

NOT IN FILES # 35

WELL-34 Plotted on DFG Map

E2

WATER WELL DRILLERS REPORT

DUPLICATE

THIS HAS TO BE W-35

Permit No. 3703
T. 2S., R. 2W Sec. 24
State Well No.
R.C.F.C.D. No. (34)

025/02W-24(E#2) -24E3

(1) OWNER:
Name [redacted] Phone: 797-3329
Address [redacted]
Calimesa, California

(2) LOCATION OF WELL:
County Riverside Owner's No. 2
Sec. 24-T2S R2W 880 North of Chandler Road
[illegible] Ftte East of Highway 99

(3) TYPE OF WORK (check):
New well ☒ Deepening ☐ Reconditioning ☐ Abandoned ☐
If abandoned, describe material and procedure in Item 11.

(4) PROPOSED USE (check):
Domestic ☐ Industrial ☐ Municipal ☐
Irrigation ☒ Test Well ☐ Other ☐

(5) EQUIPMENT:
Rotary ☒
Cable ☐
Dug Well ☐

(6) CASING INSTALLED:
Threaded ☒ Welded ☐

From	To	Diameter	Gauge or Wall
0	800	21	3/16

If gravel packed:

From	To	Size
0	800	Pea

Type and size of shoe or scraping: none
Description: Butt weld

(7) PERFORATIONS:
Type of perforation: Torch
Size of perforations: 4 x 6 inches
Perforated from: 170 to 800
No. per row: 1
Row spacing: 6

(8) CONSTRUCTION:
Was well gravel packed? Yes ☐ No ☐
Was a surface seal provided? Yes ☐ No ☐
Depth: [illegible]
Material used in seal: Cement

(9) WATER LEVELS:
Depth at which water was first found: 168
Standing level before pumping: 168
Standing level after pumping: 168

(10) WELL TESTS:
Was well test made? Yes ☐ No ☐
Type: [illegible] Was electric log made? Yes ☐ No ☐
Temperature of water: [illegible] Was a chemical analysis made? Yes ☐ No ☐
Was well disinfected? Yes ☐ No ☐

(11) WELL LOG:
Total depth: 800 ft. Depth of completed well: 800 ft.
Formation: Describe by color, character, size of material, and structure.

From	To	Formation
0	4	Top soil
4	75	Gravel sand and clay
75	155	Gravel and sand
155	220	Sand and clay
220	260	Rock and sand
260	360	Sandy clay & gravel
360	380	Clay
380	394	Sand
394	410	Rock and sand
410	440	Gravel
440	475	Hard sand & clay
475	510	Rock and sand
510	618	Sand & gravel
618	650	Rock
650	800	Hard sand and clay

CONFIDENTIAL - NOT FOR PUBLIC RELEASE

[illegible]2370

MAR 1960
RECEIVED
YUCAIPA VALLEY WATER DIST.

Driller:
Name: R. L. Trosier
Address: 145 E. Mabeshe
San Bernardino, California

TRIPLICATE
File Original, Duplicate and Triplicate with the
REGIONAL WATER POLLUTION
CONTROL BOARD No.
(insert appropriate number)

WATER WELL DRILLERS REPORT

(Sections 7076, 7077, 7078, Water Code)

STATE OF CALIFORNIA

Do Not Fill In
No. 54064
State Well No.
Other Well No.

(1) OWNER:

Name [redacted]
Address
Calimesa, Calif.

(2) LOCATION OF WELL:

County Riverside Owner's number, if any No. 2
R. F. D. or Street No. Sec. 24-t2s 2-W 800 North
of chandle road 400 ft.
East of Highway 99

Permit No! 3703

(3) TYPE OF WORK (check):

New well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in Item 11.

(4) PROPOSED USE (check):

Domestic ☐ Industrial ☐ Municipal ☐
Irrigation ☒ Test Well ☐ Other ☐

(5) EQUIPMENT:

Rotary ☒
Cable ☐
Dug Well ☐

(6) CASING INSTALLED:

SINGLE ☒ DOUBLE ☐

From ft.	to ft.	Diam.	Gage or Wall
0	800	14	3/16

Type and size of shoe or well ring none
Describe joint but weld

If gravel packed

Diameter of Bore	from ft.	to ft.
21	0	800

Size of gravel: Pea

(7) PERFORATIONS:

Type of perforator used torach
Size of perforations 4 1/2 in., length, by 3/16 in.

From ft.	to ft.	Perf. per row	Rows per ft.
170	800	1	6

(8) CONSTRUCTION:

Was a surface sanitary seal provided? ☒ Yes ☐ No To what depth 90 ft.
Were any strata sealed against pollution? ☐ Yes ☒ No If yes, note depth of strata

From ft.	to ft.
"	"

Method of Sealing Cement

(9) WATER LEVELS:

Depth at which water was first found 168 ft.
Standing level before perforating 168 ft.
Standing level after perforating 168 ft.

(10) WELL TESTS:

Was a pump test made? ☐ Yes ☐ No If yes, by whom?
Yield: gal./min. with ft. draw down after hrs.
Temperature of water Was a chemical analysis made? ☐ Yes ☐ No
Was electric log made of well? ☐ Yes ☐ No

(11) WELL LOG:

Total depth 800 ft. Depth of completed well 800 ft.
Formations: Describe by color, character, size of material, and structure.

0	ft. to 4	ft.	Top Soil.
4	" 75	"	Gravel sand and clay
75	" 155	"	gravel and sand.
155	" 220	"	sand and clay
220	" 260	"	rock and sand
260	" 360	"	sandy clay& gravel
360	" 380	"	Clay
380	" 394	"	sand
394	" 410	"	rock and sand
410	" 440	"	gravel
440	" 475	"	Hard sand & clay
475	" 510	"	rock and sand
510	" 648	"	sand & gravel
648	" 650	"	rock
650	" 800	"	Hard sand and clay

Work started 19 , Completed 19

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME R. L. Trower
(Person, firm, or corporation) (Typed or printed)
Address 445 E. Wabash
San Bernardino, Calif.

[SIGNED] Well Driller
License No. 189826 Dated , 19

57028 8-57 80M QUIN △ SPO DWR 188 (REV. 3-54)

Well #35

14E2

WELL LOG

2S/2W - 24E3

Well No. _____

Well Owner [redacted] Well No. 1

Location Approximately 2200 feet south of north line of Section 24

; SW ¼, NW ¼, Section 24, T 2 S, R 2 W

Drilled by Trower & Son Date completed October 1959

Drilling method rotary

Total depth _____ Size of casing and depth 14" Gauge 3/16" (Double) (Single)

Type of well _____

Struck water at _____, SWL before perforating 120 after perforating _____ (ft.)

Completion test data: SWL _____ PWL _____ Discharge _____ Hours run _____

Surface elev. 2320 Source of information _____

Perforations _____

Depth	Elev. Bot. of Stratum	Material	Thickness	
3 - 3		Top soil	3	
3 - 90		Red clay and decomposed granite	87	
90 - 134		Gravel and sand	44	
134 - 178		Clay and sand	44	
178 - 200		Gravel rock and sand	22	
200 - 210		Sand	10	
210 - 225		Gravel and sand	15	
225 - 247		Clay	22	
247 - 282		Gravel	35	
282 - 310		Clay and sand	28	
310 - 365		Gravel and sand	55	
365 - 491		Fine sand and clay	126	
491 - 560		Alternate layers of sand and rock	69	
560 - 790		Hard cemented gravel rock and sand	230	

Remarks: 21-inch hole to 530 feet
18-inch hole to 790 feet

SHEET _____ of _____ Sheets

2S/2W-24E2

SAN BERNARDINO VALLEY WATER CONSERVATION DISTRICT
10½ West Citrus Avenue - Redlands, California

WELL LOG

Well No. 35

Well Owner [redacted] WELL NO 1
Location apprx 2200 ft S. of North line of Sec 24

; ¼, ¼, Section 24, T 2S, R 2W

Drilled by TROWER & SON Date completed Oct 1959
Drilling method Rotary
Total depth ____ Size of casing and depth 14-inch Gauge 3/16" (Double) (Single)
Type of well ____
Struck water at ____, SWL before perforating 120 after perforating ____ (ft.)
Completion test data: SWL ____ PWL ____ Discharge ____ Hours run ____
Surface elev. 2320 Source of information ____
Perforations ____

Depth	Elev. Bot. of Stratum	Material	Thickness	
0-3		Top Soil		
3-90		Red clay & Decomposed GRANITE		
90-134		Gravel & Sand		
134-178		Clay & Sand		
178-200		GRAVEL Rock & Sand		
200-210		SAND		
210-225		GRAVEL & SAND		
225-247		Clay		
247-282		GRAVEL		
282-310		Clay & SAND		
310-365		GRAVEL & SAND		
365-491		FINE SAND & Clay		
491-560		alternate layers of Sand & rock		
560-790		Hard cemented Gravel Rock & Sand		

Remarks:
21-inch hole to 530 feet
18-inch hole to 790

SHEET ____ of ____ Sheets

Well 103

*The free Adobe Reader may be used to view and complete this form. However, software must be purchased to complete, save, and reuse a saved form.

File Original with DWR

State of California

Well Completion Report

Refer to Instruction Pamphlet

No. e0106895

Page 1 of 1

Owner's Well Number MW-3

Date Work Began 11/17/2009 Date Work Ended 11/20/2009

Local Permit Agency County of San Bernardino Environmental Health

Permit Number 2009110688 Permit Date 11/10/09

DWR Use Only – Do Not Fill In

State Well Number/Site Number

Latitude N Longitude W

APN/TRS/Other

Geologic Log

Orientation ◉ Vertical ○ Horizontal ○ Angle Specify

Drilling Method Hollow Stem Auger Drilling Fluid Air

Depth from Surface Feet	to Feet	Description Describe material, grain size, color, etc
0	2	Asphalt on silty sand (fill)
2	4	Silty sand, brown
4	12	Sandy clay, fine, dark brown
12	40	Silty sand, fine to coarse, dark brown
40	50	Silt with sand, fine, gray brown
50	60	Sand, fine to coarse, dark gray
60	70	Gravelly sand, fine to coarse, dark gray

Total Depth of Boring 70 Feet

Total Depth of Completed Well 60 Feet

Well Owner

Name [redacted]

Mailing Address [redacted]

City Yucaipa State CA Zip 92399

Well Location

Address San Timoteo Canyon Road

City Redlands County San Bernardino

Latitude 34 Deg. 1 Min. 23 Sec. N Longitude 117 Deg. 11 Min. 48 Sec. W

Datum NAD83 Decimal Lat. 34.023 Decimal Long. 116.197

APN Book Page Parcel

Township 2S Range 3W Section 4

Location Sketch

(Sketch must be drawn by hand after form is printed.)

North



Illustrate or describe distance of well from roads, buildings, fences, rivers, etc. and attach a map. Use additional paper if necessary. **Please be accurate and complete.**

Activity

◉ New Well
○ Modification/Repair
○ Deepen
○ Other
○ Destroy
Describe procedures and materials under "GEOLOGIC LOG"

Planned Uses

○ Water Supply
☐ Domestic ☐ Public
☐ Irrigation ☐ Industrial
○ Cathodic Protection
○ Dewatering
○ Heat Exchange
○ Injection
◉ Monitoring
○ Remediation
○ Sparging
○ Test Well
○ Vapor Extraction
○ Other

Water Level and Yield of Completed Well

Depth to first water 19 (Feet below surface)

Depth to Static Water Level (Feet) Date Measured

Estimated Yield * (GPM) Test Type

Test Length (Hours) Total Drawdown (Feet)

*May not be representative of a well's long term yield.

Casings

Depth from Surface Feet	to Feet	Borehole Diameter (Inches)	Type	Material	Wall Thickness (Inches)	Outside Diameter (Inches)	Screen Type	Slot Size if Any (Inches)
0	45	10	Blank	PVC Sch. 40		4		
45	60	10	Screen	PVC Sch. 40		4	Milled Slots	0.020

Annular Material

Depth from Surface Feet	to Feet	Fill	Description
0	39	Cement	seal
39	42	Bentonite	seal
42	60	Filter Pack	sand

Attachments

☐ Geologic Log
☐ Well Construction Diagram
☐ Geophysical Log(s)
☐ Soil/Water Chemical Analyses
☐ Other

Attach additional information, if it exists.

Certification Statement

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief

Name Jay J. Martin for C.H.J., Incorporated, Vice President, CEG 1529
Person, Firm or Corporation

1355 E. Cooley Drive Colton CA 92324
Address City State Zip

Signed [signature] 3/4/2010 766402
C-57 Licensed Water Well Contractor Date Signed C-57 License Number

DWR 188 REV. 1/2006

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

MONITORING WELL NO. MW-3

Date Drilled: 11/18/09 Client: [redacted]

Equipment: B-61 Hollow-Stem Auger Driving Weight / Drop: 140 lbs./30 in.

Coordinates: 34.023°-116.197° Logged by: VJR Groundwater First Encountered (ft): 19.2

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	SAMPLE NO.	SAMPLES: DRIVE	SAMPLES: BULK	BLOWS/FOOT (Equiv. SPT)	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
		8" Asphalt Concrete, No Aggregate Base							
		(SM) Silty Sand, fine with medium, light brown	Fill	X		5 2 2			SPT
		(SM) Silty Sand, fine with clay, dark brown	Native						
5		(CL) Sandy Clay, fine, dark brown							
10				X		3 10 10			SPT
		(SM) Silty Sand, fine to coarse with gravel, dark brown							
15									
			Groundwater						
20		(SM) Silty Sand, fine to coarse with gravel, dark brown		X		4 7 12			SPT
25									
30				X		3 6 7			SPT

MONITORING_WELL 09631-8.GPJ CHJ.GDT 11/24/09

C.H.J.

WELLS - SAN TIMOTEO & LIVE OAK CANYONS
RIVERSIDE COUNTY, CALIFORNIA

Job No. 09631-8

Enclosure B-3a

MONITORING WELL NO. MW-3

Date Drilled: 11/18/09 Client: [redacted]

Equipment: B-61 Hollow-Stem Auger Driving Weight / Drop: 140 lbs./30 in.

Coordinates: 34.023°-116.197° Logged by: VJR Groundwater First Encountered (ft): 19.2

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	SAMPLE NO.	SAMPLES DRIVE	SAMPLES BULK	BLOWS/FOOT (Equiv. SPT)	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
40		(ML) Silt with Sand, fine, gray brown		X		3 4 7			SPT
45									
50		(SP-SM) Sand, fine to coarse with silt and gravel, dark gray		X		21 50/5"			SPT
55									
60		(SP-SM) Gravelly Sand, fine to coarse with silt, gravel, dark gray		X		24 38 50/5"			SPT
65									

MONITORING_WELL 09631-8.GPJ CHJ.GDT 11/24/09

C.H.J.

WELLS - SAN TIMOTEO & LIVE OAK CANYONS
RIVERSIDE COUNTY, CALIFORNIA

Job No. 09631-8

Enclosure B-3b

MONITORING WELL NO. MW-3

Date Drilled: 11/18/09 Client: [redacted]

Equipment: B-61 Hollow-Stem Auger Driving Weight / Drop: 140 lbs./30 in.

Coordinates: 34.023°-116.197° Logged by: VJR Groundwater First Encountered (ft): 19.2

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	SAMPLE NO.	SAMPLES DRIVE	SAMPLES BULK	BLOWS/FOOT (Equiv. SPT)	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
		(ML) Silt with sand, fine and clay, dark gray to red brown		X		15 16 24			SPT
		END OF BORING							
		BORING TERMINATED AT 70.0' - REDRILLED TO 60.0' FILL TO 2.0', SLIGHT CAVING GROUNDWATER AT 18.8'							
75									
80									
85									
90									
95									
100									

MONITORING_WELL 09631-8.GPJ CHJ.GDT 11/24/09

C.H.J.

WELLS - SAN TIMOTEO & LIVE OAK CANYONS
RIVERSIDE COUNTY, CALIFORNIA

Job No. 09631-8

Enclosure B-3c

MW 104

*The free Adobe Reader may be used to view and complete this form. However, software must be purchased to complete, save, and reuse a saved form.

File Original with DWR

Page 1 of 1

Owner's Well Number MW-2

Date Work Began 11/16/2009 Date Work Ended 11/20/2009

Local Permit Agency County of San Bernardino Environmental Health

Permit Number 2009110689 Permit Date 11/10/09

State of California

Well Completion Report

Refer to Instruction Pamphlet

No. e0106893

DWR Use Only – Do Not Fill In

State Well Number/Site Number

Latitude N Longitude W

APN/TRS/Other

Geologic Log

Orientation ◉ Vertical ○ Horizontal ○ Angle Specify

Drilling Method Hollow Stem Auger Drilling Fluid Air

Depth from Surface Feet	to Feet	Description Describe material, grain size, color, etc
0	3	Asphalt concrete on sand (fill)
3	20	Silty sand, fine to medium, brown
20	30	Silty sand,fine to coarse w/clay,dark brown
30	40	Clayey sand, fine w/medium and silt, yellow brown
40	50	Silty sand,fine w/medium & clay,brown
50	60	sand,fine to coarse w/silt, gray
60	71	Silty sand, fine w/medium & clay,brown

Total Depth of Boring 71 Feet

Total Depth of Completed Well 70 Feet

Well Owner

Name [redacted]

Mailing Address [redacted]

City Yucaipa State CA Zip 92399

Well Location

Address Alessandro Road

City Redlands County San Bernardino

Latitude 34 Deg. 0 Min. 51 Sec. N Longitude 117 Deg. 10 Min. 46 Sec. W

Datum NAD83 Decimal Lat. 34.014 Decimal Long. 117.179

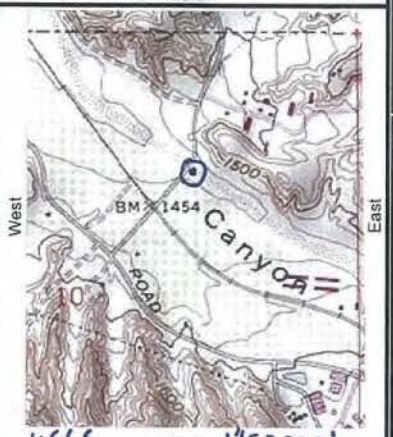
APN Book Page Parcel

Township 2S Range 3W Section 10

Location Sketch

(Sketch must be drawn by hand after form is printed.)

North



Illustrate or describe distance of well from roads, buildings, fences, rivers, etc. and attach a map. Use additional paper if necessary. Please be accurate and complete.

Activity

◉ New Well
○ Modification/Repair
○ Deepen
○ Other
○ Destroy
Describe procedures and materials under "GEOLOGIC LOG"

Planned Uses

○ Water Supply
☐ Domestic ☐ Public
☐ Irrigation ☐ Industrial
○ Cathodic Protection
○ Dewatering
○ Heat Exchange
○ Injection
◉ Monitoring
○ Remediation
○ Sparging
○ Test Well
○ Vapor Extraction
○ Other

Water Level and Yield of Completed Well

Depth to first water 17 (Feet below surface)

Depth to Static Water Level (Feet) Date Measured

Estimated Yield * (GPM) Test Type

Test Length (Hours) Total Drawdown (Feet)

*May not be representative of a well's long term yield.

Casings

Depth from Surface Feet	to Feet	Borehole Diameter (Inches)	Type	Material	Wall Thickness (Inches)	Outside Diameter (Inches)	Screen Type	Slot Size if Any (Inches)
0	55	10	Blank	PVC Sch. 40		4		
55	70	10	Screen	PVC Sch. 40		4	Milled Slots	0.020

Annular Material

Depth from Surface Feet	to Feet	Fill	Description
0	46	Cement	seal
46	49	Bentonite	seal
49	70	Filter Pack	sand

Attachments

☐ Geologic Log
☐ Well Construction Diagram
☐ Geophysical Log(s)
☐ Soil/Water Chemical Analyses
☐ Other

Attach additional information, if it exists.

Certification Statement

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief

Name Jay J. Martin for C.H.J., Incorporated, Vice President, CEG 1529 (Person, Firm or Corporation)

1355 E. Cooley Drive (Address) Colton (City) CA (State) 92324 (Zip)

Signed [signature] (C-57 Licensed Water Well Contractor) 3/4/2010 (Date Signed) 766402 (C-57 License Number)

DWR 188 REV. 1/2006

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

MONITORING WELL NO. MW-2

Date Drilled: 11/18/09 Client: [redacted]

Equipment: B-61 Hollow-Stem Auger Driving Weight / Drop: 140 lbs./30 in.

Coordinates: 34.014°-117.179° Logged by: VJR Groundwater First Encountered (ft): 16.5

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	SAMPLE NO.	SAMPLES: DRIVE	SAMPLES: BULK	BLOWS/FOOT (Equiv. SPT)	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
		7-1/2" Asphalt Concrete	Asphalt						
		(SP-SM) Sand, fine to medium with coarse, silt and gravel, brown	Fill	X		7 6 7			SPT
		(SM) Silty Sand, fine to medium, brown	Native						
5									
10				X		4 5 7			SPT
15			▼ Groundwater						
20		(SM) Silty Sand, fine to coarse with clay, dark brown		X		7 11 11			SPT
25									
30		(SC) Clayey Sand, fine with medium and silt, yellow brown		X		2 2 4			SPT

MONITORING_WELL 09631-8.GPJ CHJ.GDT 11/24/09

C.H.J.

WELLS - SAN TIMOTEO & LIVE OAK CANYONS
RIVERSIDE COUNTY, CALIFORNIA

Job No. 09631-8

Enclosure B-2a

MONITORING WELL NO. MW-2

Date Drilled: 11/18/09 Client: [redacted]

Equipment: B-61 Hollow-Stem Auger Driving Weight / Drop: 140 lbs./30 in.

Coordinates: 34.014°-117.179° Logged by: VJR Groundwater First Encountered (ft): 16.5

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	SAMPLE NO.	SAMPLES: DRIVE	SAMPLES: BULK	BLOWS/FOOT (Equiv. SPT)	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
40		(SM) Silty Sand, fine with medium and clay, brown		X		8 10 15			SPT
50		(SP) Sand, fine to coarse with silt, gray		X		4 15 25			SPT
60		(SM) Silty Sand, fine with medium and clay, brown		X		5 9 16			SPT
65									

MONITORING_WELL_09631-8.GPJ CHJ.GDT 11/24/09

C.H.J.

WELLS - SAN TIMOTEO & LIVE OAK CANYONS
RIVERSIDE COUNTY, CALIFORNIA

Job No. 09631-8

Enclosure B-2b

MONITORING WELL NO. MW-2

Date Drilled: 11/18/09 Client: [redacted]

Equipment: B-61 Hollow-Stem Auger Driving Weight / Drop: 140 lbs./30 in.

Coordinates: 34.014°-117.179° Logged by: VJR Groundwater First Encountered (ft): 16.5

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	SAMPLE NO.	SAMPLES: DRIVE	SAMPLES: BULK	BLOWS/FOOT (Equiv. SPT)	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
				X		30 50/5"			SPT
		END OF BORING	Refusal						
		REFUSAL AT 71.0', NO BEDROCK FILL TO 3.0', SLIGHT CAVING GROUNDWATER AT 16.5'							
75									
80									
85									
90									
95									
100									

MONITORING_WELL 09631-8.GPJ CHJ.GDT 11/24/09

C.H.J.

WELLS - SAN TIMOTEO & LIVE OAK CANYONS
RIVERSIDE COUNTY, CALIFORNIA

Job No. 09631-8

Enclosure B-2c

Well 105

*The free Adobe Reader may be used to view and complete this form. However, software must be purchased to complete, save, and reuse a saved form.

File Original with DWR

State of California

Well Completion Report

Refer to Instruction Pamphlet

No. e0107582

Page 1 of 1

Owner's Well Number MW-1

Date Work Began 11/18/2009 Date Work Ended 11/18/2009

Local Permit Agency Riverside County Department of Environmental Health

Permit Number WP 20440 Permit Date 11/10/09

DWR Use Only – Do Not Fill In

State Well Number/Site Number

N W

Latitude Longitude

APN/TRS/Other

Geologic Log

Orientation ◉ Vertical ○ Horizontal ○ Angle Specify

Drilling Method Hollow Stem Auger Drilling Fluid Air

Depth from Surface Feet	to Feet	Description Describe material, grain size, color, etc
0	1	Asphalt concrete and aggregate on sand (fill)
1	10	Silty sand, fine with clay, brown
10	20	Sand,fine to medium w/coarse, brown
20	30	Silty sand, fine to medium w/clay, gray brown
30	40	Silty sand,fine to coarse w/gravel, brown
40	50	Sand,fine to medium w/coarse, silt & gravel,gray
50	72	Silty sand, fine to medium w/clay, gray brown

Total Depth of Boring 72 Feet

Total Depth of Completed Well 60 Feet

Well Owner

Name [redacted]

Mailing Address [redacted]

City Yucaipa State CA Zip 92399

Well Location

Address Live Oak Canyon Road

City Calimesa County Riverside

Latitude 34 Deg. 0 Min. 10 Sec. N Longitude 117 Deg. 9 Min. 52 Sec. W

Datum NAD83 Decimal Lat. 34.003 Decimal Long. 117.165

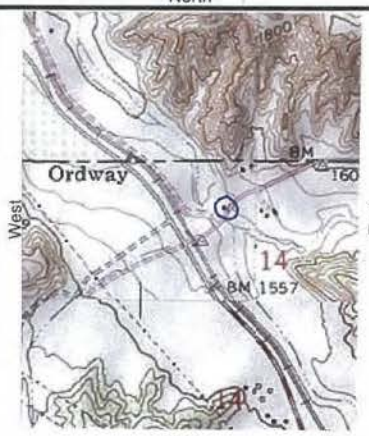
APN Book 473 Page 320 Parcel 012

Township 2S Range 3W Section 14

Location Sketch

(Sketch must be drawn by hand after form is printed.)

North



South

Illustrate or describe distance of well from roads, buildings, fences, rivers, etc. and attach a map. Use additional paper if necessary. **Please be accurate and complete.**

Activity

◉ New Well
○ Modification/Repair
○ Deepen
○ Other
○ Destroy
Describe procedures and materials under "GEOLOGIC LOG"

Planned Uses

○ Water Supply
☐ Domestic ☐ Public
☐ Irrigation ☐ Industrial
○ Cathodic Protection
○ Dewatering
○ Heat Exchange
○ Injection
◉ Monitoring
○ Remediation
○ Sparging
○ Test Well
○ Vapor Extraction
○ Other

Water Level and Yield of Completed Well

Depth to first water 19 (Feet below surface)

Depth to Static Water Level (Feet) Date Measured

Estimated Yield * (GPM) Test Type

Test Length (Hours) Total Drawdown (Feet)

*May not be representative of a well's long term yield.

Casings

Depth from Surface Feet	to Feet	Borehole Diameter (Inches)	Type	Material	Wall Thickness (Inches)	Outside Diameter (Inches)	Screen Type	Slot Size if Any (Inches)
0	45	10	Blank	PVC Sch. 40		4		
45	60	10	Screen	PVC Sch. 40		4	Milled Slots	0.020

Annular Material

Depth from Surface Feet	to Feet	Fill	Description
0	36	Cement	seal
36	39	Bentonite	seal
39	60	Filter Pack	sand

Attachments

☐ Geologic Log
☐ Well Construction Diagram
☐ Geophysical Log(s)
☐ Soil/Water Chemical Analyses
☐ Other

Attach additional information, if it exists.

Certification Statement

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief

Name Jay J. Martin for C.H.J., Incorporated, Vice President, CEG 1529
Person, Firm or Corporation

1355 E. Cooley Drive Colton CA 92324
Address City State Zip

Signed [signature] 3/18/2010 766402
C-57 Licensed Water Well Contractor Date Signed C-57 License Number

DWR 188 REV. 1/2006

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

YVWD

MONITORING WELL NO. MW-1

Date Drilled: 11/18/09 Client: [redacted]

Equipment: B-61 Hollow-Stem Auger Driving Weight / Drop: 140 lbs./30 in.

Coordinates: 34.003°-117.164° Logged by: VJR Groundwater First Encountered (ft): 19.0

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	SAMPLE NO.	SAMPLES: DRIVE	SAMPLES: BULK	BLOWS/FOOT (Equiv. SPT)	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
0		5" Asphalt Concrete, 4" Aggregate Base	Asphalt						
		(SP-SM) Sand, fine with silt, gray brown	Base						
		(SM) Silty Sand, fine with clay, brown	Fill / Native	X		2 3 2			SPT
5									
10		(SP-SM) Sand, fine to medium with coarse, brown		X		4 6 7			SPT
15									
20			▼ Groundwater						
		(SM) Silty Sand, fine to medium with clay, gray brown		X		3 4 4			SPT
25									
30		(SM) Silty Sand, fine to coarse with gravel, brown		X		11 17 21			SPT

MONITORING_WELL_09631-8.GPJ CHJ.GDT 11/24/09

C.H.J.

WELLS - SAN TIMOTEO & LIVE OAK CANYONS
RIVERSIDE COUNTY, CALIFORNIA

Job No. 09631-8

Enclosure B-1a

MONITORING WELL NO. MW-1

Date Drilled: 11/18/09 Client: [redacted]

Equipment: B-61 Hollow-Stem Auger Driving Weight / Drop: 140 lbs./30 in.

Coordinates: 34.003°-117.164° Logged by: VJR Groundwater First Encountered (ft): 19.0

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	SAMPLE NO.	SAMPLES DRIVE	SAMPLES BULK	BLOWS/FOOT (Equiv. SPT)	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
40		(SP-SM) Sand, fine to medium with coarse, silt and gravel, gray		X		4 6 14			SPT
45									
50		(SM) Silty Sand, fine to medium with clay, gray brown		X		14 22 23			SPT
55									
60				X		9 17 30			SPT
65									

MONITORING_WELL 09631-8.GPJ CHJ.GDT 11/24/09

C.H.J.

WELLS - SAN TIMOTEO & LIVE OAK CANYONS
RIVERSIDE COUNTY, CALIFORNIA

Job No. 09631-8

Enclosure B-1b

MONITORING WELL NO. MW-1

Date Drilled: 11/18/09 Client: [redacted]

Equipment: B-61 Hollow-Stem Auger Driving Weight / Drop: 140 lbs./30 in.

Coordinates: 34.003°-117.164° Logged by: VJR Groundwater First Encountered (ft): 19.0

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	SAMPLE NO.	SAMPLES: DRIVE	SAMPLES: BULK	BLOWS/FOOT (Equiv. SPT)	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
				X		22 35 50			SPT
		END OF BORING	Refusal						
		REFUSAL AT 71.5', NO BEDROCK FILL TO 1.0', SLIGHT CAVING GROUNDWATER AT 19.0'							
75									
80									
85									
90									
95									
100									

MONITORING_WELL 09631-8.GPJ CHJ.GDT 11/24/09

C.H.J.

WELLS - SAN TIMOTEO & LIVE OAK CANYONS
RIVERSIDE COUNTY, CALIFORNIA

Job No. 09631-8

Enclosure B-1c

Appendix 3-A

Drilling Logs and Well Completion Reports

R E

25/2W-13E1

FORM 115
INVESTIGATION

South Coastal Basin

DIVISION OF WATER RESOURCES
DEPARTMENT OF PUBLIC WORKS
STATE OF CALIFORNIA

SHEET 1

NUMBER E-13&d-

WELL LOG

LOCAL DESIGNATION

Owner #2
Hicks #Y-2
Loc. #18249 -

LOCATION 700' S. of Ave. L; 20' E. of W. line of Lot 225, Sub. 9, Yucaipa Valley, Yucaipa . Sec.13.

OWNER [redacted]

DATE COMPLETED 1913

DIAMETER OF CASING 16"

DRILLED BY W. D. Anderson

SOURCE OF INFORMATION P. E. Hicks

INSPECTED WHILE DRILLING SEE FILE NO.

SURFACE ELEVATION 2453. levels Hicks.

SKETCH

DEPTH	ELEVATION OF BOTTOM OF STRATUM	MATERIAL	THICKNESS FEET	% VOIDS	ABSOLUTE VOIDS FEET	TOTAL VOIDS FEET
0-95	2358	Packed clay	95			
190	2263	Cement gravel	95			
202	2251	Water gravel	12			
204	2249	Clay	2			
208	2245	Water gravel	4			
212	2241	Clay	4			
220	2233	Gravel	8			
226	2227	Clay	6			
230	2223	Gravel	4			
238	2215	Clay	8			
266	2187	Gravel	28			
277	2176	Clay	11			
313	2140	Gravel	36			
316	2137	Red clay	3			
330	2123	Cement gravel	14			
336	2117	Gravel	6			
338	2115	Clay	2			
346	2107	Gravel	8			
350	2103	Cement and quicksand	4			
362	2091	Red clay	12			
375	2078	Granite	13			
383	2070	Concrete	8			

Pumps 40" Drawdown 100'

MICROFILMED

FOR FIELD COPIES USE ALTERNATE LINES

LOG OBTAINED BY DATE

GSSI
11 342

SMWC well 4

-2S/2W-14R3

MAY 3 1 1968

ORIGINAL
File with DWR

WATER WELL DRILLERS REPORT

(Sections 7079, 7080, 7081, 7082, Water Code)

THE RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES

Do Not Fill In

No. 35123

State Well No. 2S/2W-14

Other Well No.

(1) OWNER:

Name [redacted]

Address Calimesa, California.

(2) LOCATION OF WELL:

County Riverside Owner's number, if any No. 4 well

Township, Range, and Section SE-1/4, Sec 14, Twp 2-S

Distance from cities, roads, railroads, etc. R-2-W, Riverside County

(3) TYPE OF WORK (check): Colmesa Well

New Well ☒ Deepening ☐ Reconditioning ☐ Destroying ☐

If destruction, describe material and procedure in Item 11.

(4) PROPOSED USE (check):

Domestic ☐ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☒

(5) EQUIPMENT:

Rotary ☒
Cable ☐
Other ☐

(6) CASING INSTALLED:

STEEL: OTHER:

SINGLE ☒ DOUBLE ☐

From ft.	To ft.	Diam.	Gage or Wall	Diameter of Bore	From ft.	To ft.
100	30" x 1/4" conductor casing					
76'	16" x 5/16" blank casing					
624'	- 16" x 5/16" perforated casing					

If gravel packed

Size of shoe or well ring:

Size of gravel:

Describe joint

(7) PERFORATIONS OR SCREEN:

Type of perforation or name of screen

From ft.	To ft.	Perf. per row	Rows per ft.	Size in. x in.
352	976	10 holes per		2-2/3"

(8) CONSTRUCTION:

Was a surface sanitary seal provided? Yes ☒ No ☐ To what depth 100 ft.

Were any strata sealed against pollution? Yes ☐ No ☐ If yes, note depth of strata

From ft. to ft.

From ft. to ft.

Method of sealing

(9) WATER LEVELS:

Depth at which water was first found, if known ft.

Standing level before perforating, if known ft.

Standing level after perforating and developing ft.

(10) WELL TESTS:

Pump test made? Yes ☒ No ☐ If yes, by whom? Roscoe Moss

Yield: 1720 gal./min. with 335 ft. drawdown after 49 hrs.

Temperature of water Was a chemical analysis made? Yes ☐ No ☐

Was electric log made of well? Yes ☐ No ☐ If yes, attach copy

(11) WELL LOG: 2249' ROAT

Total depth 1000 ft. Depth of completed well ft.

Formation: Describe by color, character, size of material, and structure

ft. to	ft.
0 to 14'	Soil
14 to 69'	Gravel
69 to 73'	Clay and gravel
73 to 92'	Boulders
92 to 110'	Gravel and clay
110 to 124'	Sand and gravel
124 to 135'	Red sandy clay, some gravel
135 to 195'	Sand and gravel with cemented streaks
195 to 240'	Sandy clay, some gravel
240 to 250'	Red clay
250 to 280'	Hard sand and gravel, some clay
280 to 348'	Sand, gravel and rocks
348 to 358'	Sand, gravel and clay
358 to 365'	Brown clay
365 to 504'	Hard sand, gravel, boulders and clay
504 to 535'	Sand, gravel and clay
535 to 539'	Sand and gravel
539 to 549'	Sand and clay
549 to 580'	Sand and gravel
580 to 635'	Sand and gravel, some clay
635 to 694'	Sandy clay, some sand and gravel
694 to 700'	Hard rocks and sand
700 to 715'	Brown clay
715 to 758'	Sand and gravel
758 to 802'	Clay, some sand and gravel
802 to 808'	Hard rock and sand
808 to 835'	Brown clay and gravel
835 to 840'	Sand and gravel, some clay
840 to 856'	Sandy clay, some sand
856 to 934'	Sand, gravel and boulders
934 to 940'	Sand and gravel, some clay
940 to 982'	Sand gravel and boulders
982 to 1000'	Brown clay

Work started 3-22-68 Completed 4-19-68

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Roscoe Moss Company
(Person, firm, or corporation) (Typed or printed)

Address 4360 North Street
Los Angeles, California.

[SIGNED] [redacted]
(Well Driller)

License No. 624 C-57 Dated May 17, 1968 19

SKETCH LOCATION OF WELL ON REVERSE SIDE

SMWC well 4

MAY 31 1968

-2S/2W-14R3

ORIGINAL
File with DWR

WATER WELL DRILLERS REPORT
(Sections 7079, 7080, 7081, 7082, Water Code)

THE RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES

Do Not Fill In

No. 35123

State Well No. 2S/2W-14

Other Well No.

(1) OWNER:

Name [redacted]

Address Calimesa, California.

(2) LOCATION OF WELL:

County Riverside Owner's number, if any No. 4 well

Township, Range, and Section SE-1/4, Sec 14, Twp 2-S

Distance from cities, roads, railroads, etc. R-2-W, Riverside County

(3) TYPE OF WORK (check): Calimesa Blvd.

New Well ☒ Deepening ☐ Reconditioning ☐ Destroying ☐

If destruction, describe material and procedure in Item 11.

(4) PROPOSED USE (check):

Domestic ☐ Industrial ☐ Municipal ☐

Irrigation ☐ Test Well ☐ Other ☒

(5) EQUIPMENT:

Rotary ☒

Cable ☐

Other ☐

(6) CASING INSTALLED:

STEEL: OTHER:

SINGLE ☒ DOUBLE ☐

From ft.	To ft.	Diam.	Gage or Wall	Diameter of Bore	From ft.	To ft.
100	30" x 1/4" conductor casing					
76'	624'	16" x 5/16"	blank casing			
624'	-	16" x 5/16"	perforated casing			

If gravel packed

Size of shoe or well ring:

Size of gravel:

Describe joint

(7) PERFORATIONS OR SCREEN:

Type of perforation or name of screen

From ft.	To ft.	Perf. per row	Rows per ft.	Size in. x in.
352	976	10 holes per		2-2/3"

(8) CONSTRUCTION:

Was a surface sanitary seal provided? Yes ☒ No ☐ To what depth 100 ft.

Were any strata sealed against pollution? Yes ☐ No ☐ If yes, note depth of strata

From ft. to ft.

From ft. to ft.

Method of sealing

(9) WATER LEVELS:

Depth at which water was first found, if known ft.

Standing level before perforating, if known ft.

Standing level after perforating and developing ft.

(10) WELL TESTS:

Pump test made? Yes ☒ No ☐ If yes, by whom? Roscoe Moss

Yield: 1720 gal./min. with 335 ft. drawdown after 49 hrs.

Temperature of water Was a chemical analysis made? Yes ☐ No ☐

Was electric log made of well? Yes ☐ No ☐ If yes, attach copy

7551
351

(11) WELL LOG: 2 1/2" Rept.

Total depth 1000 ft. Depth of completed well ft.

Formation: *Describe by color, character, size of material, and structure*

ft. to	ft.
0 to 14'	Soil
14 to 69'	Gravel
69 to 73'	Clay and gravel
73 to 92'	Boulders
92 to 110'	Gravel and clay
110 to 124'	Sand and gravel
124 to 135'	Red sandy clay, some gravel
135 to 195'	Sand and gravel with cemented streaks
195 to 240'	Sandy clay, some gravel
240 to 250'	Red clay
250 to 280'	Hard sand and gravel, some clay
280 to 348'	Sand, gravel and rocks
348 to 358'	Sand, gravel and clay
358 to 365'	Brown clay
365 to 504'	Hard sand, gravel, boulders and clay
504 to 535'	Sand, gravel and clay
535 to 539'	Sand and gravel
539 to 549'	Sand and clay
549 to 580'	Sand and gravel
580 to 635'	Sand and gravel, some clay
635 to 694'	Sandy clay, some sand and gravel
694 to 700'	Hard rocks and sand
700 to 715'	Brown clay
715 to 758'	Sand and gravel
758 to 802'	Clay, some sand and gravel
802 to 808'	Hard rock and sand
808 to 835'	Brown clay and gravel
835 to 840'	Sand and gravel, some clay
840 to 856'	Sandy clay, some sand
856 to 934'	Sand, gravel and boulders
934 to 940'	Sand and gravel, some clay
940 to 982'	Sand gravel and boulders
982 to 1000'	Brown clay

Work started 3-22-68 Completed 4-19-68

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Roscoe Moss Company
(Person, firm, or corporation) (Typed or printed)

Address 4360 North Street
Los Angeles, California.

[SIGNED] [redacted]
(Well Driller)

License No. 624 C-57 Dated May 17, 1968 19

SKETCH LOCATION OF WELL ON REVERSE SIDE

QUADRUPLICATE
For Local Requirements

Page ___ of ___

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet

No. 441027

DWR USE ONLY — DO NOT FILL IN
25/2W-15-1
STATE WELL NO./STATION NO
LATITUDE LONGITUDE
APN/TRS/OTHER

Owner's Well No. Well #5
Date Work Began 09/11/96 Ended ___
Local Permit Agency County of Riverside Environmental Health
Permit No. 21447 Permit Date 09/11/96

GEOLOGIC LOG

ORIENTATION (✓) X VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)
DEPTH TO FIRST WATER ___ (Ft.) BELOW SURFACE

DEPTH FROM SURFACE Ft. to Ft.	DESCRIPTION *Describe material, grain size, color, etc*
	Install 14" liner to depth of 514', Gravel Pack Liner

RECEIVED
OCT 21 1996

TOTAL DEPTH OF BORING ___ (Feet)
TOTAL DEPTH OF COMPLETED WELL ___ (Feet)

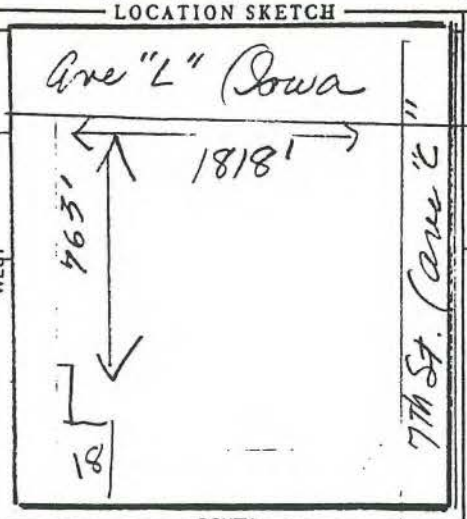
WELL OWNER

Name [redacted]
Mailing Address [redacted]
Calimesa CITY Ca. STATE 92320 ZIP

WELL LOCATION

Address S.of Ave. L, W of 7th St. Behind Mobil
City Home Park, - Calimesa
County Riverside
APN Book ___ Page ___ Parcel 411-200-018-9
Township 2S Range 2W Section 15
Latitude ___ DEG. ___ MIN. ___ SEC. NORTH Longitude ___ DEG. ___ MIN. ___ SEC. WEST

LOCATION SKETCH



SOUTH

Illustrate or Describe Distance of Well from Landmarks such as Roads, Buildings, Fences, Rivers, etc. PLEASE BE ACCURATE & COMPLETE.

ACTIVITY (✓)

___ NEW WELL
MODIFICATION/REPAIR
___ Deepen
X Other (Specify) Annular Seal
___ DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")

PLANNED USE(S) (✓)

___ MONITORING
WATER SUPPLY
___ Domestic
X Public
___ Irrigation
___ Industrial
___ "TEST WELL"
___ CATHODIC PROTECTION
___ OTHER (Specify)

DRILLING METHOD ___ FLUID ___

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH OF STATIC WATER LEVEL ___ (Ft.) & DATE MEASURED ___
ESTIMATED YIELD* ___ (GPM) & TEST TYPE ___
TEST LENGTH ___ (Hrs.) TOTAL DRAWDOWN ___ (Ft.)
* *May not be representative of a well's long-term yield.*

CASING(S)

DEPTH FROM SURFACE Ft. to Ft.	BORE-HOLE DIA. (Inches)	TYPE (✓) BLANK	SCREEN	CONDUCTOR	FILL PIPE	MATERIAL/GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)
0 : 50	22	X				Mild Steel	16"	1/4	
0 : 264		X				Mild Steel	14"	1/4	
264 : 514			X			Mild Steel	14"	1/4	.090

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft. to Ft.	TYPE CEMENT (✓)	BENTONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
0 : 50	X			3"

ATTACHMENTS (✓)

___ Geologic Log
___ Well Construction Diagram
___ Geophysical Log(s)
___ Soil/Water Chemical Analyses
___ Other ___

ATTACH ADDITIONAL INFORMATION IF IT EXISTS.

GSSI
354

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME Layne Western Division of Layne Christensen
(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

900 Nevada Street ADDRESS Redlands CITY Ca. STATE 92373 ZIP

Signed ___ (WELL DRILLER/AUTHORIZED REPRESENTATIVE) 10/18/96 DATE SIGNED 5/0011 C-57 LICENSE NUMBER

DWR 188 (1-95) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

February 7, 1949

Log of Test-hole Drilled for the [redacted]
Driller: C. C. Scott
Box 26,
Beaumont, California

#5 #5

Total Depth of Test-Hole- 1, 119 Feet

FROM	TO	DESCRIPTION OF FORMATIONS
0	48	Gravel, and sand imbedded in Clay
48	70	Fine Gravel
70	120	Gravel, and Sand imbedded in Clay
120	132	Sandy Clay
132	170	Gravel imbedded in Clay
170	185	Shale
185	240	Clay
240	248	Fine Gravel
248	260	Clay
260	268	Rock
268	293	Gravel imbedded in Clay
293	305	Coarse Sand (Water)
305	370	Clay
370	375	Rock Ledge
375	400	Clay
400	406	Rock, and Decomposed Granite
406	415	Sand
415	450	Clay
450	480	Sandy Clay
480	490	Rock
490	538	Sandy Clay
538	555	Hard, solid Clay
555	578	Coarse sand (Water)
578	586	Rock
586	615	Clay
615	625	Sand
625	650	Sandy Clay
650	670	Very Hard Clay
670	683	Coarse Water Sand, and Gravel
683	693	Rock
693	730	Clay
730	740	S andy Clay
740	745	S and-Stone
745	750	Sand
750	756	Hard Clay
756	760	Sand
760	770	Sandy Clay
770	782	Clay
782	816	Very Hard Clay
816	830	Sand
830	850	Clay
850	855	Rock, and Sand-Stone

(Log continued on Page 2)

~~2S/2W-14B2~~ form exact log as 2S/2W-14E1

WATER WELL DRILLERS REPORT

DUPLICATE

Permit No. 292
T. 2 S., R. 2 E Sec. 1
State Well No.
R.C.F.C.D. No.

SMWC #5

M 14 E

OWNER:

Name [redacted]

Address

Calimesa, California

(2) LOCATION OF WELL:

County Riverside Owner's number, if any—

Portion of Blk. 251, Subd. 9, of Yucaipa Valley, Riverside Co.

(3) TYPE OF WORK (*check*):

New well ☐ Deepening ☐ Reconditioning ☐ Abandon ☐

If abandonment, describe material and procedure in Item 11.

(4) PROPOSED USE (*check*):

Domestic ☐ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

(5) EQUIPMENT:

Rotary ☐
Cable ☐
Dug Well ☐

(6) CASING INSTALLED:

SINGLE ☐ DOUBLE ☐

From	ft. to	ft.	Diam.	Gage or Wall
"	"	"	"	"
"	"	"	"	"
"	"	"	"	"
"	"	"	"	"
"	"	"	"	"

Type and size of shoe or well ring

Describe joint

If gravel packed

Diameter of Bore	from ft.	to ft.
	"	"
	"	"
	"	"
	"	"
	"	"

Size of gravel:

(7) PERFORATIONS:

Type of perforator used

Size of perforations in., length, by in.

From	ft. to	ft.	Perf. per row	Rows per ft.
"	"	"	" " "	" " "
"	"	"	" " "	" " "
"	"	"	" " "	" " "
"	"	"	" " "	" " "

(8) CONSTRUCTION:

Was a surface sanitary seal provided? ☐ Yes ☐ No To what depth ft.

Were any strata sealed against pollution? ☐ Yes ☐ No If yes, note depth of strata

From	ft. to	ft.
"	"	"

Method of Sealing

(9) WATER LEVELS:

Depth at which water was first found	230 ft.
ding level before perforating	230 ft.
ding level after perforating	180 ft.

(10) WELL TESTS:

Was a pump test made? ☐ Yes ☐ No If yes, by whom?

(11) WELL LOG:

Total depth 1,119 ft. Depth of completed well

Formations *Describe by color, character, size of material, and structure.*

0	ft. to 48	ft.	gravel & sand imbedded in
48	" 70	"	fine gravel
70	" 120	"	gravel & sand imbedded in
120	" 132	"	sandy clay
132	" 170	"	gravel imbedded in clay
170	" 185	"	shale
185	" 240	"	clay
240	" 248	"	fine gravel
248	" 260	"	clay
260	" 268	"	rock
268	" 293	"	gravel imbedded in clay
293	" 305	"	coarse sand (water)
305	" 370	"	clay
370	" 375	"	rock ledge
375	" 400	"	clay
400	" 406	"	rock & decomposed granite
406	" 415	"	sand
415	" 450	"	clay
450	" 480	"	sandy clay
480	" 490	"	rock
490	" 538	"	sandy clay
538	" 555	"	hard, solid clay
555	" 578	"	coarse sand (water)
578	" 586	"	rock
586	" 615	"	clay
615	" 625	"	sand
625	" 650	"	sandy clay
650	" 670	"	very hard clay
670	" 683	"	coarse water sand & gravel
683	" 693	"	rock
693	" 730	"	clay
730	" 740	"	sandy clay
740	" 745	"	sand-stone
745	" 750	"	sand
750	" 756	"	hard clay
756	" 760	"	sand
760	" 770	"	sandy clay
770	" 782	"	clay
782	" 816	"	very hard clay
816	" 830	"	sand
830	" 850	"	clay
850	" 855	"	rock and sandstone
	"	"	cont'd next page

Work started Jan. 6 1949 Completed Feb. 7 19

Driller

Name C. C. Scott

Address Box 26

Beaumont, California

1 of 2

6557 194

2/5/2N-14R2

WATER WELL DRILLERS REPORT

DUPLICATE

Permit No. 292 page 15A/14
T. 2 S., R. 2 W. Sec. 1
State Well No.
R.C.F.C.D. No.

2/14R

(1) OWNER:

Name [redacted]

Address Calimesa, California

(2) LOCATION OF WELL:

County Owner's number, if any—

Portion of Blk. 251, Subd. 9, of Yucaipa Valley, Riverside Co.

(3) TYPE OF WORK (*check*):

New well ☐ Deepening ☐ Reconditioning ☐ Abandon ☐

If abandonment, describe material and procedure in Item 11.

(4) PROPOSED USE (*check*):

Domestic ☐ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

(5) EQUIPMENT:

Rotary ☐
Cable ☐
Dug Well ☐

(6) CASING INSTALLED:

SINGLE ☐ DOUBLE ☐

From ft.	to ft.	Diam.	Gage or Wall
"	"	"	"
"	"	"	"
"	"	"	"
"	"	"	"
"	"	"	"
"	"	"	"

Type and size of shoe or well ring

Describe joint

If gravel packed

Diameter of Bore	from ft.	to ft.
	"	"
	"	"
	"	"
	"	"
	"	"

Size of gravel:

(7) PERFORATIONS:

Type of perforator used

Size of perforations in., length, by in.

From ft.	to ft.	Perf. per row	Rows per ft.
"	"	" " "	" " "
"	"	" " "	" " "
"	"	" " "	" " "
"	"	" " "	" " "

(8) CONSTRUCTION:

Was a surface sanitary seal provided? ☐ Yes ☐ No To what depth ft.

Were any strata sealed against pollution? ☐ Yes ☐ No If yes, note depth of strata

From ft.	to ft.
"	"

Method of Sealing

(9) WATER LEVELS:

at which water was first found ft.

nding level before perforating ft.

evel after perforating ft.

(10) WELL TESTS:

Was a pump test made? ☐ Yes ☐ No If yes, by whom?

Yield: gal./min. with

(11) WELL LOG:

Total depth 1,119 ft. Depth of completed well

Formation: *Describe by color, character, size of material, and structure.*

855	ft. to 863	ft.	fine sand
863	" 890	"	clay
890	" 910	"	coarse sand (water)
910	" 970	"	sandy clay
970	" 978	"	hard clay
978	" 985	"	sandy clay
985	" 1,000	"	sand & fine gravel (water)
1,000	" 1,004	"	hard clay
1,004	" 1,016	"	hard clay
1,016	" 1,020	"	rock
1,020	" 1,050	"	clay
1,050	" 1,070	"	coarse sand (water)
1,070	" 1,085	"	clay
1,085	" 1,090	"	rock ledge
1,090	" 1,119	"	hard clay

NOTE: Water meas. at 410', level 230'
" " " " 650' " 230'
" " " " 1,119' " stood at abprox. 180', on Feb. 7, 1949

Work started Jan. 6 19 49 Completed Feb. 7 19 49

Driller

Name C. C. Scott

Address Box 26

Beaumont, California

Mail Two Copies to:
DEPARTMENT OF PUBLIC HEALTH
Court House
Riverside, California

WATER WELL DRILLERS REPORT

(County Ordinances No. 340 and 340A)
COUNTY OF RIVERSIDE
DEPARTMENT OF PUBLIC HEALTH

Do Not Fill In 431
State Well No.
Other Well No. 2S/4W-15A
Region

(1) OWNER:
Name [redacted]
Address P. O. Box 307
Calimesa, Calif.

(2) LOCATION OF WELL:
County Riverside Owner's number, if any—
NE 1/4 NE 1/4 Sec. 15 T 2-S
R 1-W., S.B.B. & M.

(3) TYPE OF WORK (*check*):
New well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in Item 11.

(4) PROPOSED USE (*check*):
Domestic ☒ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

(5) EQUIPMENT:
Rotary ☒
Cable ☐
Dug Well ☐

(6) CASING INSTALLED:
SINGLE ☒ DOUBLE ☐

From ft.	to ft.	Diam.	Gage or Wall
0	800	16	1/4

If gravel packed

Diameter of Bore	from ft.	to ft.
22	0	800

Type and size of shoe or well ring None
Size of gravel: 1/2
Describe joint Butt weld

(7) PERFORATIONS:
Type of perforator used Tearch
Size of perforations 4 1/2 in., length, by 3/16 in.

From ft.	to ft.	Perf. per row	Rows per ft.
242	800	6	1

(8) CONSTRUCTION:
Was a surface sanitary seal provided? ☒ Yes ☐ No To what depth 50 ft.
Were any strata sealed against pollution? ☐ Yes ☐ No If yes, note depth of strata

From ft.	to ft.

Method of Sealing Cement

(9) WATER LEVELS:
Depth at which water was first found 242 ft.
Static level before perforating 242 ft.
Standing level after perforating 242 ft.

(10) WELL TESTS:
Was a pump test made? ☐ Yes ☐ No If yes, by whom?
Yield: gal./min. with ft. draw down after hrs.

(11) WELL LOG:
Total depth 1200 ft. Depth of completed well 800 ft.
Formation: *Describe by color, character, size of material, and structure.*

ft. to ft.	
0 – 8	Brown Clay.
8 – 11	light Tan Clay.
11 – 94	Brown clay.
94 – 262	Sand, Gravel and Rock.
262 – 311	Sand with some clay.
311 – 400	Decomposed granite.
400 – 472	Hard decomposed.
472 – 500	Sand course.
500 – 528	Sand and clay.
528 – 578	Sand course.
578 – 584	Rock and gravel.
584 – 675	Sand and gravel.
675 – 691	Gravel and D. G.
691 – 705	Sandy clay.
705 – 980	Cemented rock and gravel
980 – 1004	Very hard D. G.
1004 – 1202	Granite Niece.

Work started 19 , Completed Nov. 8 19 62

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
NAME R.L. Trower
(Person, firm, or corporation) (*Typed or printed*)
Address 445 E. Wabash
San Bernarding, Calif
[SIGNED] Robert L. Trower

DUPLICATE
File Original, Duplicate and Triplicate with the
REGIONAL WATER POLLUTION
CONTROL BOARD No.____
(Insert appropriate number)

WATER WELL DRILLERS REPORT
(Sections 7076, 7077, 7078, Water Code)

STATE OF CALIFORNIA

Do Not Fill In
No. 54073
State Well No.____
Other Well No.____

(1) OWNER:
Name [redacted]
Address [redacted]
Calimesa, Calif.

(2) LOCATION OF WELL:
County Riverside Owner's number, if any--
R. F. D. or Street No.
NE. 1/4 NE. 1/4 Sec. 15 T 2-S
R. 1-W., S. B. B. &M.

(3) TYPE OF WORK (check):
New well [X] Deepening [ ] Reconditioning [ ] Abandon [ ]
If abandonment, describe material and procedure in Item 11.

(4) PROPOSED USE (check):
Domestic [X] Industrial [ ] Municipal [ ]
Irrigation [ ] Test Well [ ] Other [ ]

(5) EQUIPMENT:
Rotary [X]
Cable [ ]
Dug Well [ ]

(6) CASING INSTALLED:
SINGLE [X] DOUBLE [ ]

From ft.	to ft.	Diam.	Gage or Wall
0	800	16	1/4

Type and size of shoe or well ring none
Describe joint Butt weld

If gravel packed

Diameter of Bore	from ft.	to ft.
22	0	800

Size of gravel: 1/2 in.

(7) PERFORATIONS:
Type of perforator used Torach
Size of perforations 4 1/2 in., length, by 3/16 in.

From ft.	to ft.	Perf. per row	Rows per ft.
242	800	6	1

(8) CONSTRUCTION:
Was a surface sanitary seal provided? [X] Yes [ ] No To what depth 50 ft.
Were any strata sealed against pollution? [ ] Yes [X] No If yes, note depth of strata

From ft.	to ft.

Method of Sealing Cement

(9) WATER LEVELS:
Depth at which water was first found 242 ft.
Standing level before perforating 242 ft.
Standing level after perforating 242 ft.

(10) WELL TESTS:
Was a pump test made? [ ] Yes [ ] No If yes, by whom?
Yield: gal./min. with ft. draw down after hrs.
Temperature of water Was a chemical analysis made? [ ] Yes [ ] No
Was electric log made of well? [ ] Yes [ ] No

(11) WELL LOG:
Total depth 1200 ft. Depth of completed well 800 ft.
Formation: *Describe by color, character, size of material, and structure.*

ft. to ft.	
0 – 8	Brown Clay.
8 – 11	Light tan clay.
11 – 94	Brown clay.
94 – 262	Sand, gravel and rock.
262 – 311	Sand with some clay.
311 – 400	Decomposed granite.
400 – 472	Hard decomposed granite
472 – 500	Course sand.
500 – 528	Sand and clay
528 – 578	Course sand.
578 – 584	Rock and gravel.
584 – 675	Sand and gravel.
675 – 691	D.G. and gravel.
691 – 705	Sandy clay.
705 – 980	Cemented rock and gravel
980 – 1004	Very hard DIG!
1004 – 1200	Granite niece.

Work started 19 . Completed Nov. 8 1962

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME R. L. Trower
(Person, firm, or corporation) (Typed or printed)
Address 445 E. Wabash
San Bernardino, Calif.
[SIGNED] Robert L Trower
Well Driller
License No. 189826 Dated Nov. 8 1962

87025 6-57 50M QUIN △ SPO

DWR 188 (REV. 3-54)

DUPLICATE
File Original, Duplicate and Triplicate with the
REGIONAL WATER POLLUTION
CONTROL BOARD No.____
(Insert appropriate number)

WATER WELL DRILLERS REPORT

(Sections 7076, 7077, 7078, Water Code)

STATE OF CALIFORNIA

Do Not Fill In
No. 54073
State Well No.____
Other Well No.____

(1) OWNER:

Name [redacted]
Address [redacted]
Calimesa, Calif.

(2) LOCATION OF WELL:

County Riverside Owner's number, if any--
R. F. D. or Street No.
NE. 1/4 NE. 1/4 Sec. 15 T 2-S
R. 1-W., S. B. B. &M.

(3) TYPE OF WORK (check):

New well [X] Deepening [ ] Reconditioning [ ] Abandon [ ]
If abandonment, describe material and procedure in Item 11.

(4) PROPOSED USE (check):

Domestic [X] Industrial [ ] Municipal [ ]
Irrigation [ ] Test Well [ ] Other [ ]

(5) EQUIPMENT:

Rotary [X]
Cable [ ]
Dug Well [ ]

(6) CASING INSTALLED:

SINGLE [X] DOUBLE [ ]

From ft.	to ft.	Diam.	Gage or Wall
0	800	16 1/4	

Type and size of shoe or well ring none
Describe joint Butt weld

If gravel packed

Diameter of Bore	from ft.	to ft.
22	0	800

Size of gravel: 1/2 in.

(7) PERFORATIONS:

Type of perforator used Torach
Size of perforations 4 1/2 in., length, by 3/16 in.

From ft.	to ft.	Perf. per row	Rows per ft.
242	800	6	1

(8) CONSTRUCTION:

Was a surface sanitary seal provided? [X] Yes [ ] No To what depth 50 ft.
Were any strata sealed against pollution? [ ] Yes [X] No If yes, note depth of strata

From ft.	to ft.

Method of Sealing Cement

(9) WATER LEVELS:

Depth at which water was first found 242 ft.
Standing level before perforating 242 ft.
Standing level after perforating 242 ft.

(10) WELL TESTS:

Was a pump test made? [ ] Yes [ ] No If yes, by whom?
Yield: gal./min. with ft. draw down after hrs.
Temperature of water Was a chemical analysis made? [ ] Yes [ ] No
Was electric log made of well? [ ] Yes [ ] No

(11) WELL LOG:

Total depth 1200 ft. Depth of completed well 800 ft.
Formation: *Describe by color, character, size of material, and structure.*

ft. to ft.	
0 – 8	Brown Clay.
8 – 11	Light tan clay.
11 – 94	Brown clay.
94 – 262	Sand, gravel and rock.
262 – 311	Sand with some clay.
311 – 400	Decomposed granite.
400 – 472	Hard decomposed granite
472 – 500	Course sand.
500 – 528	Sand and clay
528 – 578	Course sand.
578 – 584	Rock and gravel.
584 – 675	Sand and gravel.
675 – 691	D.G. and gravel.
691 – 705	Sandy clay.
705 – 980	Cemented rock and gravel
980 – 1004	Very hard DIG!
1004 – 1200	Granite niece.

Work started 19 . Completed Nov. 8 1962

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME R. L. Trower
(Person, firm, or corporation) (Typed or printed)
Address 445 E. Wabash
San Bernardino, Calif.
[SIGNED] Robert L Trower
Well Driller
License No. 189826 Dated Nov. 8 1962

87025 6-57 50M QUIN △ SPO

DWR 188 (REV. 3-54)

QUADRUPLICATE
RETAIN THIS COPY

WATER WELL DRILLERS REPORT

(Sections 7076, 7077, 7078, Water Code)

STATE OF CALIFORNIA

#9

1S/2W 15A03 SWC

Do Not Fill In
No 54055
State Well No.
Other Well No.

) OWNER:

ame [redacted]
Address

(2) LOCATION OF WELL:

County Riverside Owner's number, if any #9
R. F. D. or Street No.

(3) TYPE OF WORK (check):

New well ☐ Deepening ☒ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in Item 11.

(4) PROPOSED USE (check):

Domestic ☐ Industrial ☐ Municipal ☒
Irrigation ☐ Test Well ☐ Other ☐

(5) EQUIPMENT:

Rotary ☒
Cable ☐
Dug Well ☐

(6) CASING INSTALLED:

SINGLE ☒ DOUBLE ☐

From ft.	to ft.	Diam.	Gage Will
0	985	16	1/4

If gravel packed

Diameter of Bore	from ft.	to ft.
22	0	985
12	985	1400

Type and size of shoe or well ring none
Size of gravel: 3/8 pea
Describe joint butt weld

(7) PERFORATIONS:

Type of perforator used milling blade
Size of perforations 5/16 in., length, by 3 1/4 in.

From ft.	to ft.		Perf. per row	Rows per ft.
250	760	4	8	
800	985	4	8	

(8) CONSTRUCTION:

Was a surface sanitary seal provided? ☒ Yes ☐ No To what depth 65 ft.
Were any strata sealed against pollution? ☐ Yes ☐ No If yes, note depth of strata

From ft.	to ft.

Method of Sealing 65 ft. of 22in. pipe cemented

(9) WATER LEVELS:

Depth at which water was first found 256 ft.
Standing level before perforating 256 ft.
Standing level after perforating 256 ft.

J) WELL TESTS:

Was a pump test made? ☐ Yes ☐ No If yes, by whom?
Yield: gal./min. with ft. draw down after hrs.
Temperature of water Was a chemical analysis made? ☐ Yes ☐ No
Was electric log made of well? ☐ Yes ☐ No

GKI 3C2

(11) WELL LOG:

Total depth 1400 ft. Depth of completed well 985 ft.
Formation: *Describe by color, character, size of material, and structure.*

ft. to	ft.	
		Top: 1873
		2nd bot: 1672
538	689	packed sand, gravel and rock.
689	745	redish brown clay & sand
745	746	rock.
746	759	sand and rock.
759	820	sandy clay.
820	1005	sand, gravel and rock.
1005	1400	blue clay and gray sand.

Work started 19 . Completed JAN 20 19 65

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME R. L. TROWER
(Person, firm or corporation) (Typed or printed)
Address 445 E. Wabash
SAN BERNARDINO, Calif
[SIGNED] Robert L Trower
(Well Driller)
License No. 189826 Dated Jan 26, 19 65

57025 6-57 50M QUIN △ SPO

PWS 188 (REV. 3-54)

QUADRUPLICATE
RETAIN THIS COPY

#9

WATER WELL DRILLERS REPORT

(Sections 7076, 7077, 7078, Water Code)

STATE OF CALIFORNIA

Do Not Fill In
No. 54055
State Well No.
Other Well No.

(1) OWNER:
Name [redacted]
Address

(2) LOCATION OF WELL:
County Riverside Owner's number, if any #9
R. F. D. or Street No.

(3) TYPE OF WORK (*check*):
New well ☐ Deepening ☒ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in Item 11.

(4) PROPOSED USE (*check*):
Domestic ☐ Industrial ☐ Municipal ☒
Irrigation ☐ Test Well ☐ Other ☐

(5) EQUIPMENT:
Rotary ☒
Cable ☐
Dug Well ☐

(6) CASING INSTALLED:
SINGLE ☒ DOUBLE ☐

From ft.	to ft.	Diam.	Gage Wall
0	985	16	1/4

If gravel packed

Diameter of Bore	from ft.	to ft.
22	0	985
12	985	1400

Type and size of shoe or well ring none
Size of gravel: 3/8 pea
Describe joint butt weld

(7) PERFORATIONS:
Type of perforator used milling blade
Size of perforations 5/16 in., length, by 3 1/4 in.

From ft.	to ft.	Perf. per row	Rows per ft.
250	760	4	8
800	985	4	8

(8) CONSTRUCTION:
Was a surface sanitary seal provided? ☒ Yes ☐ No To what depth 65 ft.
Were any strata sealed against pollution? ☐ Yes ☐ No If yes, note depth of strata

From ft.	to ft.

Method of Sealing 65 ft. of 22in. pipe cemented

(9) WATER LEVELS:
Depth at which water was first found 256 ft.
Standing level before perforating 256 ft.
Standing level after perforating 256 ft.

(10) WELL TESTS:
Was a pump test made? ☐ Yes ☐ No If yes, by whom?
Yield: gal./min. with ft. draw down after hrs.
Temperature of water Was a chemical analysis made? ☐ Yes ☐ No
Was electric log made of well? ☐ Yes ☐ No

(11) WELL LOG:
Total depth 1400 ft. Depth of completed well 985 ft.
Formation: *Describe by color, character, size of material, and structure.*

ft. to	ft.	
538	689	packed sand, gravel and gravel rock.
689	745	redish brown clay & sand
745	746	rock.
746	759	sand and rock.
759	820	sandy clay.
820	1005	sand, gravel and rock.
1005	1400	blue clay and gray sand.

Work started 19 Completed JAN 20 19 65

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME R. L. TROWER (Person, firm, or corporation) (Typed or printed)
Address 445 E. WABASH
SAN BERNARDINO, CALIF
[SIGNED] Robert L Trower (Well Driller)
License No. 189826 Dated Jan 26, 19 65

57028 6-57 50M QUIN △ SPO DWR 188 (REV. 3-54)

SMWC well 11

FORM 115

INVESTIGATION

South Coastal Basin

DIVISION OF WATER RESOURCES
DEPARTMENT OF PUBLIC WORKS
STATE OF CALIFORNIA

WELL LOG

1S/2W-14C1

SHEET

NUMBER E-1364

LOCAL DESIGNATION Owner #
Marliave Red. #51
Hicks Y-11

LOCATION 10' S. of County Line Road, 150' W. of State Highway, Lot 209, Sub. 9. Yucaipa.

~~Loc. #1823C~~

OWNER [redacted]

DATE COMPLETED ~~-16-~~ About 1922

DIAMETER OF CASING 16"

DRILLED BY Henry E. Gansner

SOURCE OF INFORMATION P. E. Hicks

INSPECTED WHILE DRILLING SEE FILE NO.

SURFACE ELEVATION

SKETCH

DEPTH	ELEVATION OF BOTTOM OF STRATUM	MATERIAL	THICKNESS FEET	% VOIDS	ABSOLUTE VOIDS FEET	TOTAL VOIDS FEET
0-135		Clay and some gravel	135			
140		Sand	5			
190		Clay	50			
208		Sand and clay	18			
894		Sand and gravel, greater part cemented.	86			
336		Gravel, some clay				
360		Clay and gravel	24			
369		Clay	9			
430		Hard red clay	61			
431		Clay, little gravel	1			
440		Soft sandy clay	9			
443		Clay	3			
		Perf 205-363				
		Pumps 150" - drawdown [illegible]				

FOR FIELD COPIES USE ALTERNATE LINES

LOG OBTAINED BY DATE

80612 6 31 15M CALIFORNIA STATE PRINTING OFFICE

DUPLICATE
Owner's Copy

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
WATER WELL DRILLERS REPORT

Do not fill in
No. 161398

Notice of Intent No.
Local Permit No. or Date
State Well No.
Other Well No.

(1) OWNER: Name [redacted]
Address [redacted]
City Calimesa, CA Zip 92320

(2) LOCATION OF WELL (See instructions):
County San Bernardino Owner's Well Number 28
Well address if different from above
Township 2S Range 2W Section 11
Distance from cities, roads, railroads, fences, etc. Calimesa
500' East of County Line Rd.
200' South of "H" St.

PER BULLETIN
74
WATER WELL STANDARDS

WELL LOCATION SKETCH

(3) TYPE OF WORK:
New Well ☒ Deepening ☐
Reconstruction ☐
Reconditioning ☐
Horizontal Well ☐
Destruction ☐ (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:
Domestic ☐
Irrigation ☐
Industrial ☐
Test Well ☐
Stock ☐
Municipal ☒
Other ☐

(5) EQUIPMENT:
Rotary ☒ Reverse ☐
Cable ☐ Air ☐
Other ☐ Bucket ☐

(6) GRAVEL PACK:
Yes ☒ No ☐ Size #5 Gravel
Diameter of bore 24"
Packed from 50' to 770 ft.

(7) CASING INSTALLED:
Steel ☒ Plastic ☐ Concrete ☐

(8) PERFORATIONS:
Type of perforation or size of screen R/M Hirizontal Louvre

From ft.	To ft.	Dia. in.	Gage or Wall	From ft.	To ft.	Slot size
0	770	5/16	5/16	250	770	3/32x2½"

(9) WELL SEAL:
Was surface sanitary seal provided? Yes ☒ No ☐ If yes, to depth 50 ft.
Were strata sealed against pollution? Yes ☐ No ☐ Interval ft.
Method of sealing Cement in place

(10) WATER LEVELS:
Depth of first water, if known ft.
Standing level after well completion 183 ft.

(11) WELL TESTS:
Was well test made? Yes ☒ No ☐ If yes, by whom? McCalla Bros.
Type of test Pump ☒ Bailer ☐ Air lift ☐
Depth to water at start of test ft. At end of test ft
Yield 2400 gal/min after 26½ hours Water temperature
Chemical analysis made? Yes ☐ No ☒ If yes, by whom?
Was electric log made? Yes ☒ No ☐ If yes, attach copy to this report N.A.

(12) WELL LOG: Total depth 1000 ft. Depth of completed well 770 ft.

from ft.	to ft.	Formation (Describe by color, character, size or material)
0	16	Top Soil, Clay, Rock & Sand
16	41	Clay, Rock & Gravel
41	103	Samll Gravel & Sand
103	214	Spotted Rock, Sand & Gravel
214	260	Granite Formation, firm
260	327	Small Gravel, Sand & Rock
327	390	Small Gravel, tight
390	506	Gravel
506	540	Gravel & Small Boulders
540	556	Red Clay
556	587	Gravel, w/Clay Streaks
587	611	Gravel & Granite, tight spots
611	620	Sandy Clay, tight
620	637	Sandy Clay, Gravel Streaks
637	744	Gravel & Small Rocks
744	762	Small Gravel, Sandy Clay
762	770	Gravel
770	802	Sandy Clay
802	808	Gravel & Rock
808	865	Sandy Clay
865	952	Gravel w/Clay Streaks
952	1000	Sand & Gravel

Work started 11-20 19 85 Completed 1-9 19 86

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
SIGNED (Well Driller)
NAME McCalla Bros. (Person, firm, or corporation) (Typed or printed)
Address 3132 W. 17th St.
City Santa Ana, CA Zip 92703
License No. 196824 Date of this report 1-27-86

DWR 188 (REV. 7-76) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

FORM 115

INVESTIGATION

South Coastal Basin

DIVISION OF WATER RESOURCES
DEPARTMENT OF PUBLIC WORKS
STATE OF CALIFORNIA

25/2W-14B01

SHEET 1

NUMBER E-136h

WELL LOG

LOCAL DESIGNATION Owner #14
Marliave Red. #53
Hicks Y-14

LOCATION 50' S. of County Line Road, 700' E. of State Highway, Lot 205, Sub. 9, Yucaipa.

Loc. #18239-

OWNER [redacted]

DATE COMPLETED About 1927

DIAMETER OF CASING 16"

DRILLED BY Clark McEuen

SOURCE OF INFORMATION P.E.Hicks

INSPECTED WHILE DRILLING SEE FILE NO.

SURFACE ELEVATION

SKETCH

DEPTH	ELEVATION OF BOTTOM OF STRATUM	MATERIAL	THICKNESS FEET	% VOIDS	ABSOLUTE VOIDS FEET	TOTAL VOIDS FEET
0-130		Clay	130			
150		Tight gravel	20			
160		Clay	15			
175		Tight gravel	15			
210		Coarse gravel, loose	35			
212		Red coarse sand	2			
250		Coarse gray gravel	38			
265		Clay and gravel, hard	15			
310		Coarse gravel, good	45			
317		Sand and clay	7			
325		All clay	8			
348		Wash gravel, coarse	23			
351		Clay	3			
353		Fine sand	2			
395		Clay	42			
		Pumps 10[illegible]" Drawdown [illegible]00'				

MICROFILMED

FOR FIELD COPIES USE ALTERNATE LINES

LOG OBTAINED BY DATE

66512 6 31 15M CALIFORNIA STATE PRINTING OFFICE

6SST 344 6

FORM 115 INVESTIGATION

2-2-14E01

DIVISION OF WATER RESOURCES
DEPARTMENT OF PUBLIC WORKS
STATE OF CALIFORNIA

2S/2W-14E01

SHEET 1

NUMBER E-136K

WELL LOG

LOCAL DESIGNATION

LOCATION E. side of 7th St. extended S. of N. of Ave. L, 50 south of county line and 100 feet west of Highway 99 14' E. of acc. #18239 L

Loc. # 18239 C

OWNER [redacted]

SKETCH

DATE COMPLETED drilled 1920

DIAMETER OF CASING

DRILLED BY Ganzer

SOURCE OF INFORMATION San Bernardino Valley Water Conservation District

INSPECTED WHILE DRILLING SEE FILE NO.

SURFACE ELEVATION 2370.0

DEPTH	ELEVATION OF BOTTOM OF STRATUM	MATERIAL	THICKNESS FEET	% VOIDS	ABSOLUTE VOIDS FEET	TOTAL VOIDS FEET
0 - 130		clay				
130 - 135		sand				
135 - 170		clay				
170 - 185		sand and gravel				
185 - 195		clay and gravel				
195 - 200		gravel				
235						

FOR FIELD COPIES USE ALTERNATE LINES

MICROFILMED

GSSI 346

LOG OBTAINED BY DATE

PACIFIC SURVEYS

ELECTRIC LOG
GAMMA-RAY

Job No. 16423

File No.

Company [redacted]

Well CAL MESA WATER 7TH ST. WELL

Field YUCAIPA

County SAN BERNARDINO State CA

Location:

EAST END OF 7TH ST
GPS: N34o 00.769' W117o 04.032'

Sec. Twp. Rge.

Other Services:

SONIV/VDL

Permanent Datum	G.L.	Elevation above perm. datum	Elevation
Log Measured From	G.L.	0'	K.B.
Drilling Measured From	G.L.		D.F.
			G.L.

Date	02-27-2012		
Run Number	ONE		
Depth Driller	913'		
Depth Logger	912'		
Bottom Logged Interval	910'		
Top Log Interval	50'		
Casing Driller	30" @ 50'		
Casing Logger	50'		
Bit Size	17.5"		
Type Fluid in Hole	WATER		
Density / Viscosity	N/A		
pH / Fluid Loss	N/A		
Source of Sample	PIT		
Rm @ Meas. Temp	14.2 @ 77F		
Rmf @ Meas. Temp	14.2 @ 77F		
Rmc @ Meas. Temp	N/A		
Source of Rmf / Rmc	MEAS		
Rm @ BHT	N/A		
Time Circulation Stopped	3 HRS		
Time Logger on Bottom	02:10		
Max. Recorded Temperature	N/A		
Equipment Number	PS-5		
Location	L.A.		
Recorded By	RIDDER		
Witnessed By	--		

<<< Fold Here >>>

All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, damages, or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to our general terms and conditions set out in our current Price Schedule.

Comments

Calibration Report

Database File: 16423.db
Dataset Pathname: Elog
Dataset Creation: Mon Feb 27 02:06:10 2012 by Log Open-Cased 100827

ELOG Calibration Report

Serial:	D1
Model:	DTQ
Shop Calibration Performed:	Fri Sep 02 10:21:35 2011
Before Survey Verification Performed:	Wed May 18 15:44:28 2011
After Survey Verification Performed:	Wed May 18 15:45:08 2011

Shop Calibration

	Readings Zero	Readings Cal		References Zero	References Cal		Results Gain	Results Offset
Short	8.723	99.406		10.200	102.200	Ohm-m	1.015	1.350
Long	7.680	96.048		10.200	102.200	Ohm-m	1.041	-17.600
IEE	52.920	3270.320	counts	0.058	3.579	A		
VSN	49.080	5373.320	counts	0.936	102.490	V		
VLN	204.820	45711.480	counts	3.907	871.891	V		

Before Survey Verification

	Readings Zero	Readings Cal		References Zero	References Cal		Results Gain	Results Offset
Short	80.215	146.194		82.548	146.243	Ohm-m	0.965	5.112
Long	1342.350	4974.190		4976.440	4976.440	Ohm-m	0.991	47.934
IEE	54.260	3251.500	counts	0.059	3.558	A		
VSN	48.900	5340.600	counts	0.933	101.865	V		
VLN	204.580	45427.860	counts	3.902	866.481	V		

After Survey Verification

	Readings Zero	Readings Cal		References Zero	References Cal		Results Gain	Results Offset
Short	79.445	146.186		80.215	146.194	Ohm-m	0.989	1.677
Long	1341.850	4973.840		4974.190	4974.190	Ohm-m	1.000	0.554
IEE	54.360	3249.300	counts	0.059	3.556	A		
VSN	48.520	5336.700	counts	0.925	101.791	V		
VLN	204.880	45393.900	counts	3.908	865.833	V		

After Survey Verification compared to Before Survey Calibration

	Zero Before	Zero After		Cal Before	Cal After	
Short	82.548	80.215	Ohm-m	146.243	146.194	Ohm-m
Long	1377.960	1342.350	Ohm-m	4976.440	4974.190	Ohm-m

Gamma Ray Calibration Report

Serial Number:	D4	
Tool Model:	ELOG	
Performed:	Sat Apr 09 12:21:07 2011	
Calibrator Value:	162.0	GAPI
Background Reading:	212.4	cps
	707.5	cps

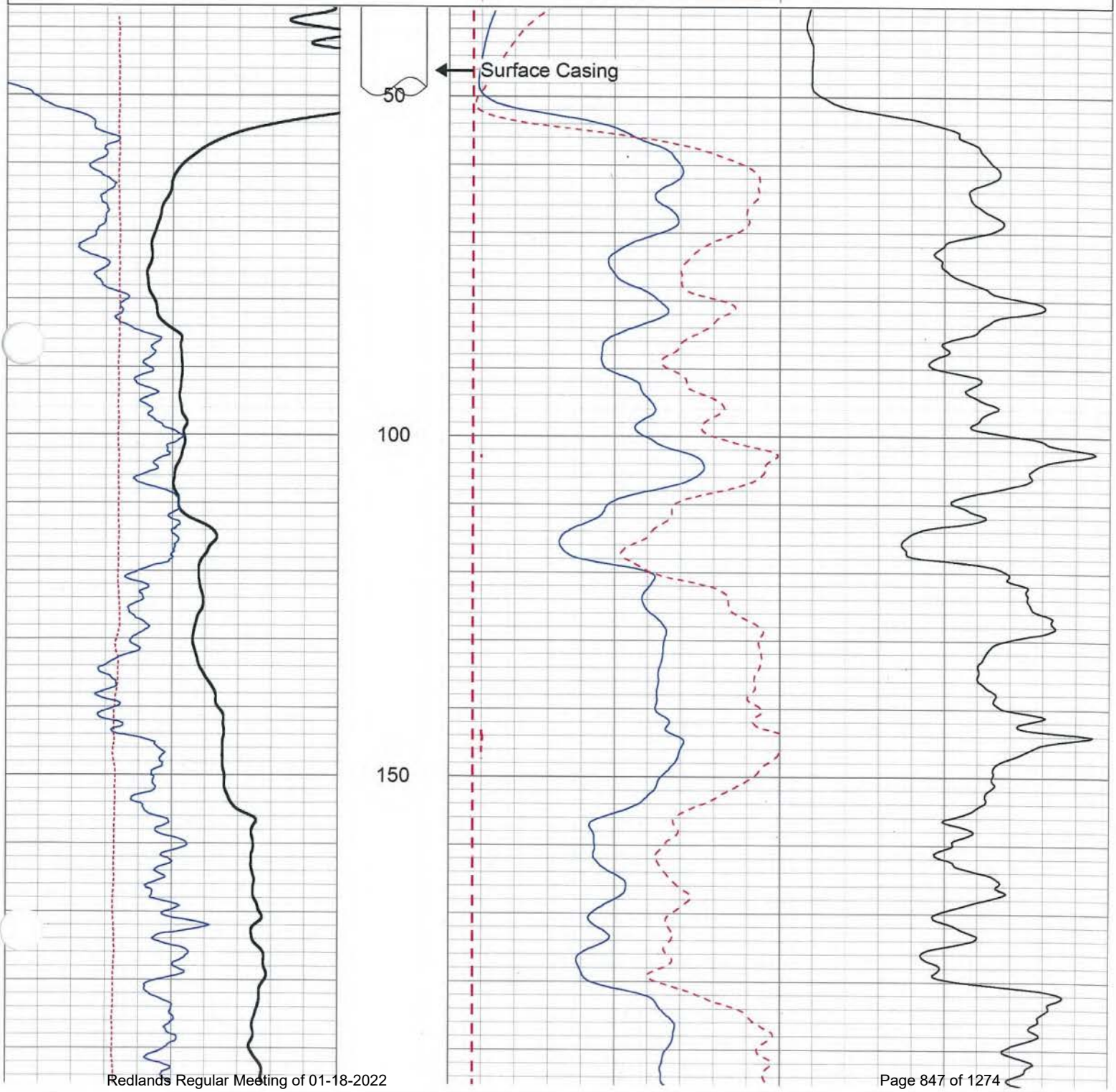
Sensitivity:	0.3272	GAPI/cps

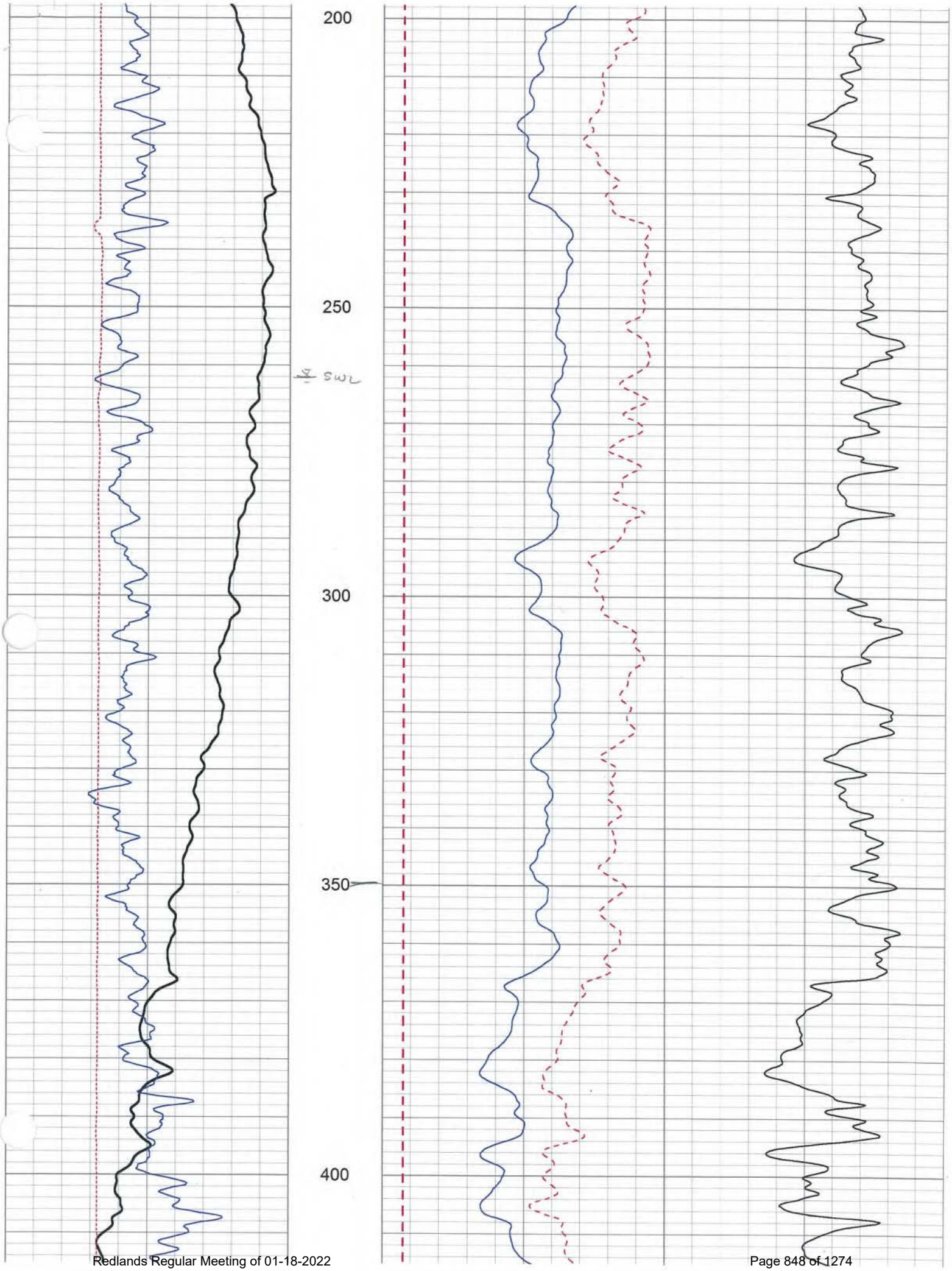
Database File:	16423.db
Dataset Pathname:	Elog
Presentation Format:	elog
Dataset Creation:	Mon Feb 27 02:06:10 2012 by Log Open-Cased 100827
Charted by:	Depth in Feet scaled 1:240

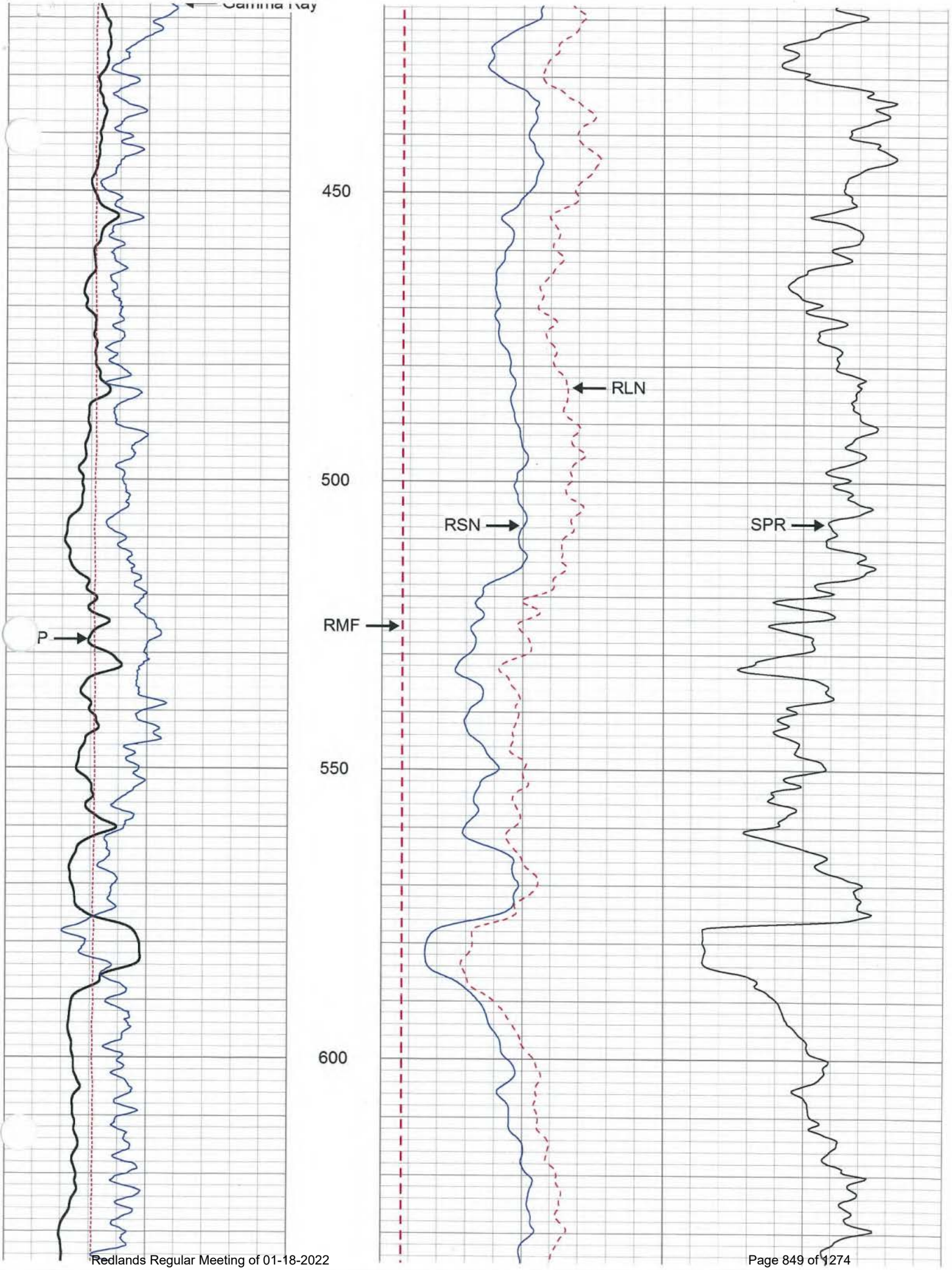
-75	SP (mV)	50
0	Line Speed (ft/min)	-100
30	Gamma Ray (GAPI)	130

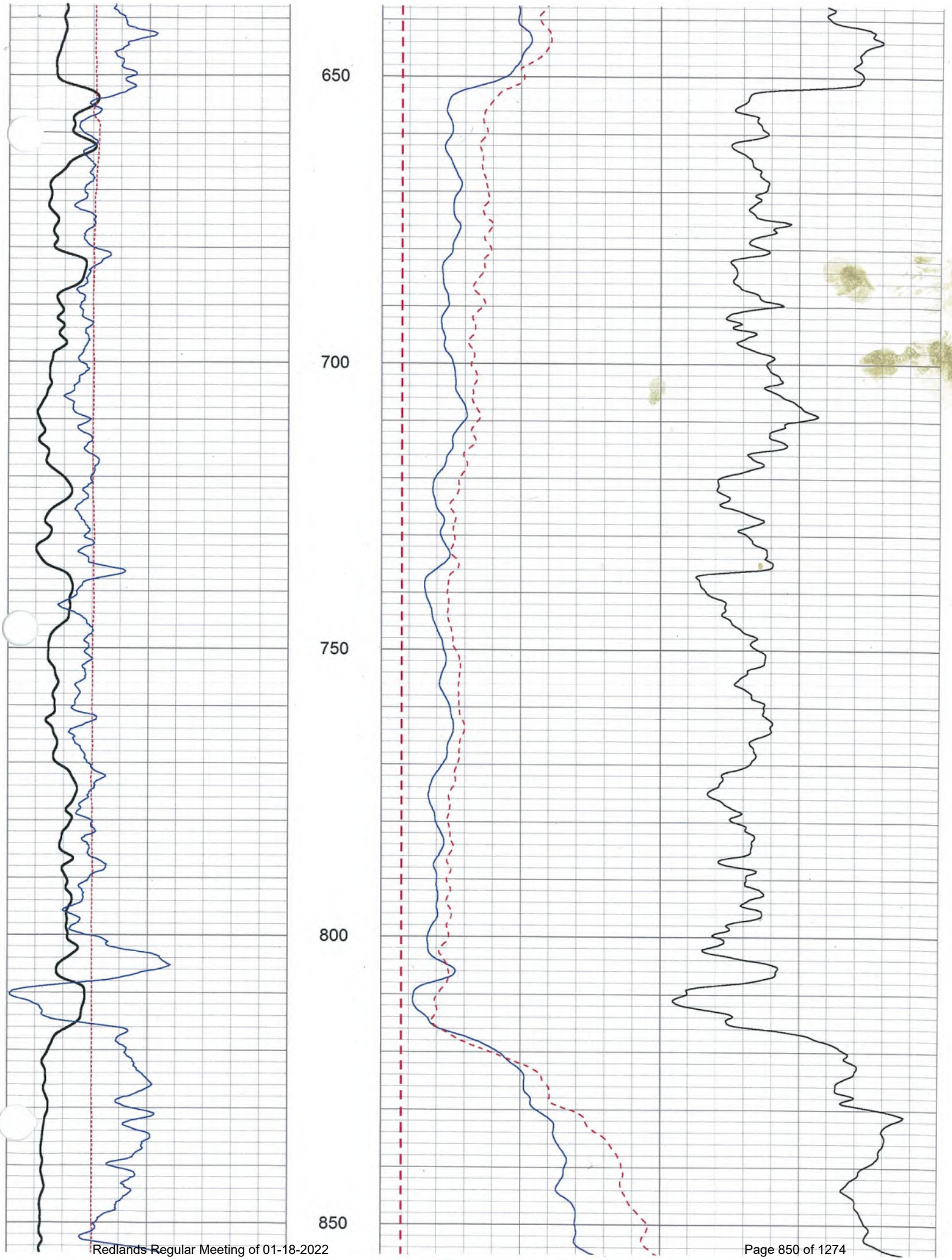
0	RSN (Ohm-m)	200
0	RLN (Ohm-m)	200
0	RMF (Ohm-m)	200
200	RSN x 10 (Ohm-m)	2000
200	RLN x 10 (Ohm-m)	2000

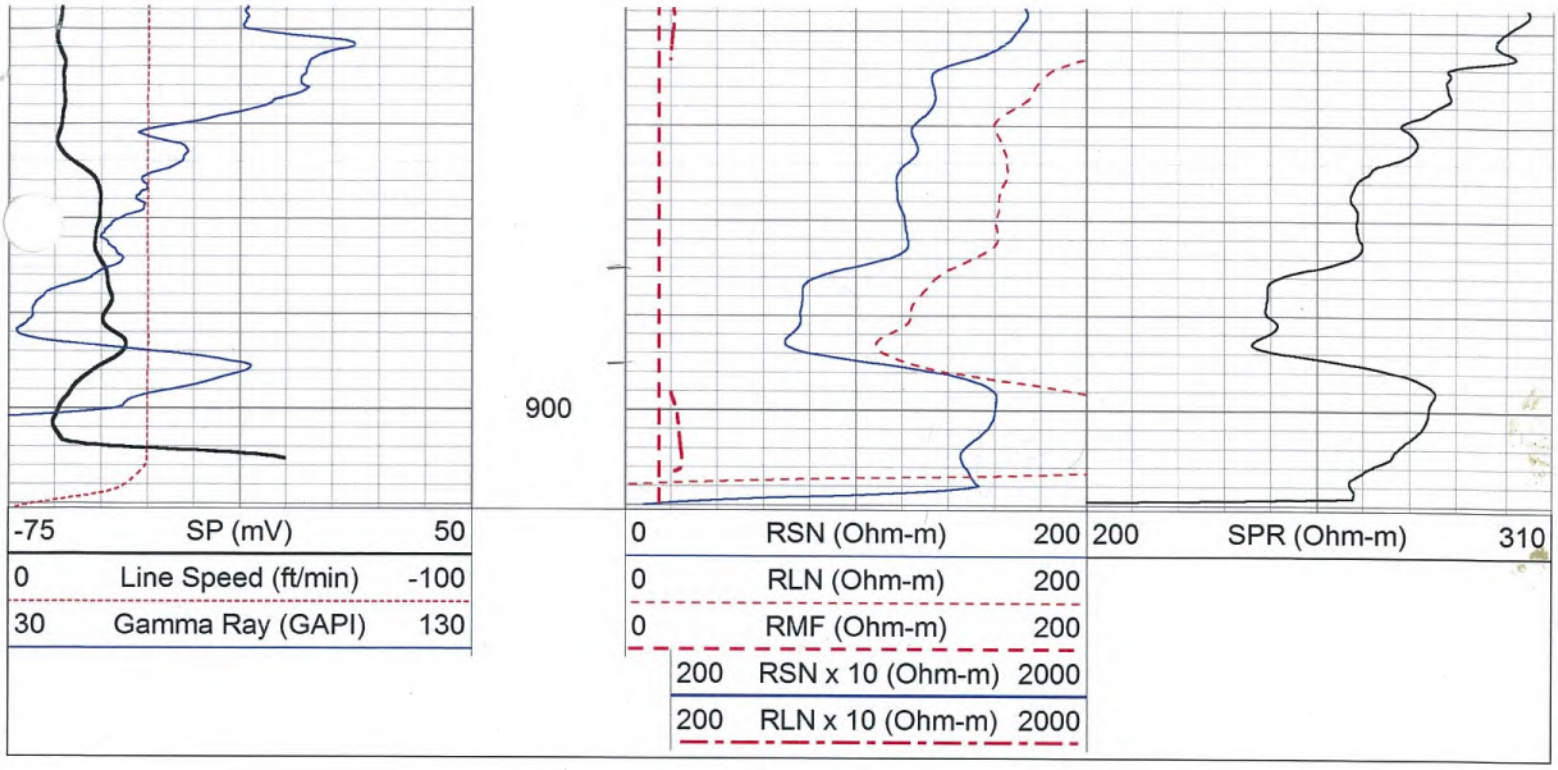
200	SPR (Ohm-m)	310




200
250
300
350
400


Gamma Ray
450
500
550
600
RLN
RSN
SPR
RMF
P


650
700
750
800
850


900
-75 SP (mV) 50
0 Line Speed (ft/min) -100
30 Gamma Ray (GAPI) 130
0 RSN (Ohm-m) 200
0 RLN (Ohm-m) 200
0 RMF (Ohm-m) 200
200 RSN x 10 (Ohm-m) 2000
200 RLN x 10 (Ohm-m) 2000
200 SPR (Ohm-m) 310

*The free Adobe Reader may be used to view and complete this form. However, software must be purchased to complete, save, and reuse a saved form.

File Original with DWR

State of California

Well Completion Report

Refer to Instruction Pamphlet

No. e0115380

Page 1 of 2

Owner's Well Number

Date Work Began 07/29/2010 Date Work Ended 8/4/2010

Local Permit Agency San Bernardino Department of Public Health

Permit Number 7010070342 Permit Date 7/23/10

DWR Use Only – Do Not Fill In

State Well Number/Site Number

N W

Latitude Longitude

APN/TRS/Other

Geologic Log

Orientation ◉ Vertical ○ Horizontal ○ Angle Specify

Drilling Method Reverse Rotary Drilling Fluid Fresh Water

Depth from Surface Feet	to Feet	Description Describe material, grain size, color, etc
35	90	Sand Gravel
90	120	Sand Clay
120	200	Sand Gravel
200	250	Sand Gravel Clay
250	310	Sand Gravel
310	340	Sand Gravel Clay
340	417	Sand Gravel

Total Depth of Boring 417 Feet

Total Depth of Completed Well 415 Feet

Well Owner

Name [redacted]

Mailing Address [redacted]

City Yucaipa State CA. Zip 92399

Well Location

Address San Timoteo Canyon Road

City Yucaipa County San Bernardino

Latitude Deg. Min. Sec. N Longitude Deg. Min. Sec. W

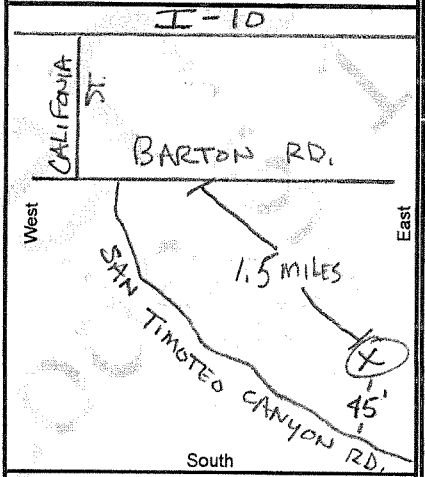
Datum Decimal Lat. Decimal Long.

APN Book 0175 Page 221 Parcel 06

Township 2S Range 3W Section 4

Location Sketch

(Sketch must be drawn by hand after form is printed.)



Illustrate or describe distance of well from roads, buildings, fences, rivers, etc. and attach a map. Use additional paper if necessary. Please be accurate and complete.

Activity

◉ New Well
○ Modification/Repair
○ Deepen
○ Other
○ Destroy
Describe procedures and materials under "GEOLOGIC LOG"

Planned Uses

○ Water Supply
☐ Domestic ☐ Public
☐ Irrigation ☐ Industrial
○ Cathodic Protection
○ Dewatering
○ Heat Exchange
○ Injection
◉ Monitoring
○ Remediation
○ Sparging
○ Test Well
○ Vapor Extraction
○ Other

Water Level and Yield of Completed Well

Depth to first water (Feet below surface)

Depth to Static Water Level (Feet) Date Measured

Estimated Yield * (GPM) Test Type

Test Length (Hours) Total Drawdown (Feet)

*May not be representative of a well's long term yield.

Casings

Depth from Surface Feet	to Feet	Borehole Diameter (Inches)	Type	Material	Wall Thickness (Inches)	Outside Diameter (Inches)	Screen Type	Slot Size if Any (Inches)
0	35	32	Conductor	Low Carbon Steel	.250	20		
0	340	17.5	Blank	PVC Sch. 80	.214	5		
340	360	17.5	Screen	PVC Sch. 80	.214	5		0.050
0	285	17.5	Blank	PVC Sch. 80	.214	5		
285	305	17.5	Screen	PVC Sch. 80	.214	5		0.050
0	120	17.7	Blank	PVC Sch. 80	.214	5		

Annular Material

Depth from Surface Feet	to Feet	Fill	Description
0	225	Filter Pack	8x16 Midcal
225	230	Fill	Sand
230	250	Bentonite	Seal
250	255	Fill	Sand
255	310	Filter Pack	8x16 Gravel
310	315	Fill	Sand

Attachments

☐ Geologic Log
☐ Well Construction Diagram
☐ Geophysical Log(s)
☐ Soil/Water Chemical Analyses
☐ Other

Attach additional information, if it exists.

Certification Statement

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief

Name Bakersfield Well & Pump Co.
Person, Firm or Corporation

7212 Fruitvale Ave Address Bakersfield City CA State 93308 Zip

Signed C-57 Licensed Water Well Contractor 8/20/2010 Date Signed 440537 C-57 License Number

DWR 188 REV. 1/2006

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

*The free Adobe Reader may be used to view and complete this form. However, software must be purchased to complete, save, and reuse a saved form.

File Original with DWR

State of California

Well Completion Report

Refer to Instruction Pamphlet

No. e0115380

Page 2 of 2

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Permit Number 7010070342 Permit Date 7/23/10

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State Well Number/Site Number

Latitude N Longitude W

APN/TRS/Other

Geologic Log

Orientation ◉ Vertical ○ Horizontal ○ Angle Specify

Drilling Method Reverse Rotary Drilling Fluid Fresh Water

Depth from Surface Feet	to Feet	Description Describe material, grain size, color, etc
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90	120	Sand Clay
120	200	Sand Gravel
200	250	Sand Gravel Clay
250	310	Sand Gravel
310	340	Sand Gravel Clay
340	417	Sand Gravel

Total Depth of Boring 417 Feet

Total Depth of Completed Well 415 Feet

Well Owner

Name [redacted]

Mailing Address [redacted]

City Yucaipa State CA. Zip 92399

Well Location

Address San Timoteo Canyon Road

City Yucaipa County San Bernardino

Latitude Deg. Min. Sec. N Longitude Deg. Min. Sec. W

Datum Decimal Lat. Decimal Long.

APN Book 0175 Page 221 Parcel 06

Township 2S Range 3W Section 4

Location Sketch

(Sketch must be drawn by hand after form is printed.)

North

West East

South

Illustrate or describe distance of well from roads, buildings, fences, rivers, etc. and attach a map. Use additional paper if necessary. **Please be accurate and complete.**

Activity

◉ New Well
○ Modification/Repair
○ Deepen
○ Other
○ Destroy
Describe procedures and materials under "GEOLOGIC LOG"

Planned Uses

○ Water Supply
☐ Domestic ☐ Public
☐ Irrigation ☐ Industrial
○ Cathodic Protection
○ Dewatering
○ Heat Exchange
○ Injection
◉ Monitoring
○ Remediation
○ Sparging
○ Test Well
○ Vapor Extraction
○ Other

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Depth to Static Water Level (Feet) Date Measured

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Test Length (Hours) Total Drawdown (Feet)

*May not be representative of a well's long term yield.

Casings

Depth from Surface Feet	to Feet	Borehole Diameter (Inches)	Type	Material	Wall Thickness (Inches)	Outside Diameter (Inches)	Screen Type	Slot Size if Any (Inches)
120	140	17.5	Screen	PVC Sch. 80	.214	5		0.050

Annular Material

Depth from Surface Feet	to Feet	Fill	Description
315	330	Bentonite	Seal
330	335	Fill	Sand
335	415	Filter Pack	8x16 Midcal

Attachments

☐ Geologic Log
☐ Well Construction Diagram
☐ Geophysical Log(s)
☐ Soil/Water Chemical Analyses
☐ Other

Attach additional information, if it exists.

Certification Statement

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief

Name Bakersfield Well & Pump Co.
Person, Firm or Corporation

7212 Fruitvale Ave Bakersfield CA 93308
Address City State Zip

Signed Kevin Ward 8/20/2010 440537
C-57 Licensed Water Well Contractor Date Signed C-57 License Number

DWR 188 REV. 1/2006

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

ORIGINAL
File with DWR

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES

WATER WELL DRILLERS REPORT

Do Not Fill In
No 105799
State Well No.
Other Well No.

Local Permit # 03098701

(1) OWNER:

Name [redacted]
Address [redacted]
Yucaipa, California 92399

(2) LOCATION OF WELL:

County San Bernardino Owner's number, if any 2A
Township, Range, and Section 2S, 2W, Section 4
Distance from cities, roads, railroads, etc. 1,000 FT. N. of Ave. E., 600' E.of 14th St.

(3) TYPE OF WORK (check):

New Well [X] Deepening [ ] Reconditioning [ ] Destroying [ ]
If destruction, describe material and procedure in Item 11.

(4) PROPOSED USE (check):

Domestic [ ] Industrial [ ] Municipal [X]
Irrigation [ ] Test Well [ ] Other [ ]

(5) EQUIPMENT:

Rotary [X]
Cable [ ]
Other [ ]

(6) CASING INSTALLED:

STEEL: X OTHER:
SINGLE [ ] DOUBLE [ ]

If gravel packed: Yes

From ft.	To ft.	Diam.	Gage or Wall	Diameter of Bore	From ft.	To ft.
0	630	16"	5/16	26"	50	630

Type of shoe or well ring:
Describe joint
Size of gravel: 4 x 7 mix

(7) PERFORATIONS OR SCREEN:

Type of perforation or name of screen

From ft.	To ft.	Perf. per row	Rows per ft.	Size in. x in.
400'	620'			3/32

(8) CONSTRUCTION:

Was a surface sanitary seal provided? Yes [X] No [ ] To what depth 50 ft.
Were any strata sealed against pollution? Yes [ ] No [X] If yes, note depth of strata
From ft. to ft.
From ft. to ft.
Method of sealing Concrete

(9) WATER LEVELS:

Depth at which water was first found, if known ft.
Standing level before perforating, if known ft.
Standing level after perforating and developing 270' ft.

(10) WELL TESTS:

Was pump test made? Yes [X] No [ ] If yes, by whom? McCalla Bros.
Yield: 1500 gal./min. with 86' ft. drawdown after 65½ hrs.
Temperature of water Was a chemical analysis made? Yes [X] No [ ]
Was electric log made of well? Yes [X] No [ ] If yes, attach copy

(11) WELL LOG:

Total depth 673' ft. Depth of completed well 630' ft.
Formation: Describe by color, character, size of material, and structure

ft. to	ft.	
0'-50'		Conductor
50'-80'		Coarse sand, fine gravel
80'-109'		Sand
109'-115'		Gray clay, fine gravel
115'-125'		Brown clay, coarse sand
125'-132'		Sticky brown clay &sand
132'-135'		Coarse sand
135'-173'		Sticky brown clay, sand, gravel
173'-175'		Sand & little clay
175'-180'		Sand & gravel, with clay streaks
180'-183'		Sticky clay & coarse sand
183'-190'		Sticky clay,fine sand & silt
190'-192'		Loose clay, fine & coarse sand
192'-200'		Sticky brown clay,& sand
200'-215'		Coarse sand,loose clay,& gravel
215'-225'		Sticky brown clay,sand& gravel
225'-239'		Coarse sand & loose clay
239'-250'		Sticky clay, sand, & gravel
250'-258'		Coarse sand & loose clay
258'-308'		Coarse sand & gravel
308'-346'		Sticky clay & coarse sand
346'-353'		Sand & small fragmented gravel
353'-547'		Coarse sand, sticky clay, gravel
547'-560'		Coarse sand,gravel, white quartz
560'-590'		Coarse sand & gravel, little cla
590'-673'		Coarse sand, little or no clay gravel very firm

Work started 3-10 19 87 Completed 5-8 19 87

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME McCalla Bros.
(Person, firm, or corporation) (Typed or printed)
Address 802 Nevada Street, Redlands, Ca.
[SIGNED] [signature]
(Well Driller)
License No. C-57196824 Dated July 10, 1987

SKETCH LOCATION OF WELL ON REVERSE SIDE

DWR 188 (REV. 9-68)

87139-790 8-72 30M TRIP ⓘ OSP

[redacted]

Well 2A

0-50'	Conductor
50-80'	Coarse sand and fine gravel
80-109'	Sand no clays
109-115'	Gray clay (loose) and fine gravel
115-125'	Brown clay (loose) coarse sand 70% fine gravel
125-132'	Sticky brown clay and sand
132-135'	Sand (coarse) very loose clay (4')
135-148'	Sticky brown clay sand and gravel (rough drilling)
148-173'	Sticky brown clay some sand and fine gravel, firm spots
173-175'	Sand little clay
175-180'	Sand and gravel with clay streaks
180-183'	Sticky brown clay and coarse sand
183-190'	Very sticky clay and fine sand and silt, some gravel.
190-192'	Loose clay, fine and coarse sand
192-200'	Very sticky brown clay and sand, some small gravel
200-215'	Coarse sand and loose clay, some gravel
215-225'	Sticky brown clay, sand, and gravel
225-239'	Coarse sand and loose clay
239-250'	Sticky clay sand and gravel (fragmented)
250-258'	Coarse sand and loose clay
258-280'	Coarse sand and fine gravel , little clay
280-283'	Coarse sand and gravel, increase in sticky clay
283-308'	Coarse sand and gravel, very loose clay
308-338'	Sticky clay and coarse sand
338-341'	Very sticky clay, some sand and gravel
341-346'	Sticky clay and coarse sand
346-353'	Sand and small fragmented gravel, little clay
353-370'	Coarse sand, very uniform and clay, some gravel.
370-393'	Increase in clay, very sticky
393-409'	Very sticky clay, some sand and gravel (40%)
409-435'	Sticky sand and clay
435-445'	Sticky loose sand, clay, and gravel
445-470'	Loose clay and coarse sand (80%)
470-473'	Sticky clay, sand, and gravel
473-481'	Coarse sand and gravel, loose clay
481-485'	Very tight sticky clay and coarse sand
485-494'	Clay and coarse sand (clay is loose and sticky)
494-545'	Coarse sand fragmented gravel, some clay
545-547'	Coarse sand, gravel, (fragged) sticky clay
547-560'	Coarse sand gravel little loose clay, a lot of very fragged white quartz
560-566'	Coarse sand and gravel, little clay, very rough drilling very tight.
566-578'	Sticky clay coarse sand and fragmented gravel
578-583'	Loose sticky clay coarse sand and gravel
583-587'	Coarse sand, some gravel (fine) loose sticky clay
587-590'	Coarse sand, spotty gravels, tight sticky clay
590-608'	Coarse uniform sand and loose clay (20%) fine fragmented gravels
608-648'	Coarse uniform sand, sticky clay little gravel
648-673'	Coarse sand (uniform) little or no clay, very firm

RECEIVED
JUN 30 1987

[redacted]

ORIGINAL
File with DWR

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES

WATER WELL DRILLERS REPORT

Do Not Fill In
No. ~~105799~~
State Well No.
Other Well No.

Local Permit # 03098701

(1) OWNER:

Name [redacted]
Address [redacted]
Yucaipa, California 92399

(2) LOCATION OF WELL:

County San Bernardino Owner's number, if any 2A
Township, Range, and Section 2S, 2W, Section 4
Distance from cities, roads, railroads, etc. 1,000 FT. N. of Ave. E., 600' E. of 14th St.

(3) TYPE OF WORK (check):

New Well ☒ Deepening ☐ Reconditioning ☐ Destroying ☐
If destruction, describe material and procedure in Item 11.

(4) PROPOSED USE (check):

Domestic ☐ Industrial ☐ Municipal ☒
Irrigation ☐ Test Well ☐ Other ☐

(5) EQUIPMENT:

Rotary ☒
Cable ☐
Other ☐

(6) CASING INSTALLED:

STEEL: X OTHER:
SINGLE ☐ DOUBLE ☐

From ft.	To ft.	Diam.	Gage or Wall
0	630	16"	5/16

If gravel packed: Yes

Diameter of Bore	From ft.	To ft.
26"	50	630

Size of shoe or well ring:
Size of gravel: 4 x 7 mix
Describe joint

(7) PERFORATIONS OR SCREEN:

Type of perforation or name of screen

From ft.	To ft.	Perf. per row	Rows per ft.	Size in. x in.
400'	620'			3/32

(8) CONSTRUCTION:

Was a surface sanitary seal provided? Yes ☒ No ☐ To what depth 50 ft.
Were any strata sealed against pollution? Yes ☐ No ☒ If yes, note depth of strata
From ft. to ft.
From ft. to ft.
Method of sealing Concrete

(9) WATER LEVELS:

Depth at which water was first found, if known ft.
Standing level before perforating, if known ft.
Standing level after perforating and developing 270' ft.

(10) WELL TESTS:

Was pump test made? Yes ☒ No ☐ If yes, by whom? McCalla Bros.
Yield: 1500 gal./min. with 81' ft. drawdown after 65½ hrs.
Temperature of water Was a chemical analysis made? Yes ☒ No ☐
Electric log made of well? Yes ☒ No ☐ If yes, attach copy

(11) WELL LOG:

Total depth 673' ft. Depth of completed well 630' ft.
Formation: Describe by color, character, size of material, and structure

ft.	to ft.	
0'	50'	Conductor
50'	80'	Coarse sand, fine gravel
80'	109'	Sand
109'	115'	Gray clay, fine gravel
115'	125'	Brown clay, coarse sand
125'	132'	Sticky brown clay &sand
132'	135'	Coarse sand
135'	173'	Sticky brown clay, sand, gravel
173'	175'	Sand & little clay
175'	180'	Sand & gravel, with clay streaks
180'	183'	Sticky clay & coarse sand
183'	190'	Sticky clay, fine sand & silt
190'	192'	Loose clay, fine & coarse sand
192'	200'	Sticky brown clay, & sand
200'	215'	Coarse sand, loose clay, & gravel
215'	225'	Sticky brown clay, sand & gravel
225'	239'	Coarse sand & loose clay
239'	250'	Sticky clay, sand, & gravel
250'	258'	Coarse sand & loose clay
258'	308'	Coarse sand & gravel
308'	346'	Sticky clay & coarse sand
346'	353'	Sand & small fragmented gravel
353'	547'	Coarse sand, sticky clay, gravel
547'	560'	Coarse sand, gravel, white quartz
560'	590'	Coarse sand & gravel, little cla
590'	673'	Coarse sand, little or no clay & gravel very firm

Work started 3-10 19 87 Completed 5-8 19 87

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME McCalla Bros.
(Person, firm, or corporation) (Typed or printed)
Address 802 Nevada Street, Redlands, Ca.
[SIGNED] [signature]
(Well Driller)
License No. C-57196824 Dated July 10, 1987

SKETCH LOCATION OF WELL ON REVERSE SIDE

DWR 188 (REV. 9-68) 18954

2A

57139-780 8-72 30M TRIP ⓘT OSP

[redacted]

Well 2A

0-50'	Conductor
50-80'	Coarse sand and fine gravel
80-109'	Sand no clays
109-115'	Gray clay (loose) and fine gravel
115-125'	Brown clay (loose) coarse sand 70% fine gravel
125-132'	Sticky brown clay and sand
132-135'	Sand (coarse) very loose clay (4')
135-148'	Sticky brown clay sand and gravel (rough drilling)
148-173'	Sticky brown clay some sand and fine gravel, firm spots
173-175'	Sand little clay
175-180'	Sand and gravel with clay streaks
180-183'	Sticky brown clay and coarse sand
183-190'	Very sticky clay and fine sand and silt, some gravel.
190-192'	Loose clay, fine and coarse sand
192-200'	Very sticky brown clay and sand, some small gravel
200-215'	Coarse sand and loose clay, some gravel
215-225'	Sticky brown clay, sand, and gravel
225-239'	Coarse sand and loose clay
239-250'	Sticky clay sand and gravel (fragmented)
250-258'	Coarse sand and loose clay
258-280'	Coarse sand and fine gravel , little clay
280-283'	Coarse sand and gravel, increase in sticky clay
283-308'	Coarse sand and gravel, very loose clay
308-338'	Sticky clay and coarse sand
338-341'	Very sticky clay, some sand and gravel
341-346'	Sticky clay and coarse sand
346-353'	Sand and small fragmented gravel, little clay
353-370'	Coarse sand, very uniform and clay, some gravel.
370-393'	Increase in clay, very sticky
393-409'	Very sticky clay, some sand and gravel (40%)
409-435'	Sticky sand and clay
435-445'	Sticky loose sand, clay, and gravel
445-470'	Loose clay and coarse sand (80%)
470-473'	Sticky clay, sand, and gravel
473-481'	Coarse sand and gravel, loose clay
481-485'	Very tight sticky clay and coarse sand
485-494'	Clay and coarse sand (clay is loose and sticky)
494-545'	Coarse sand fragmented gravel, some clay
545-547'	Coarse sand, gravel, (fragged) sticky clay
547-560'	Coarse sand gravel little loose clay, a lot of very fragged white quartz
560-566'	Coarse sand and gravel, little clay, very rough drilling very tight.
566-578'	Sticky clay coarse sand and fragmented gravel
578-583'	Loose sticky clay coarse sand and gravel
583-587'	Coarse sand, some gravel (fine) loose sticky clay
587-590'	Coarse sand, spotty gravels, tight sticky clay
590-608'	Coarse uniform sand and loose clay (20%) fine fragmented gravels
608-648'	Coarse uniform sand, sticky clay little gravel
648-673'	Coarse sand (uniform) little or no clay, very firm

RECEIVED
JUN 23 1987

2A

[redacted]

County of San Bernardino — Environmental Public Works Agency
ENVIRONMENTAL HEALTH SERVICES DEPARTMENT
385 North Arrowhead Avenue · San Bernardino, CA 924[illegible] 160

WELL PERMIT

Do Not Fill In
Permit No. 03098701
Expiration
FF
FA
SN

PLEASE PRINT:

1. OWNER: Name [redacted]
Mailing Address [redacted]
City YUCAIPA CA Zip 92399
Phone No. 790-1901

2. DATE OF WORK *(approximate)*:
Start _____ Complete _____

3. WELL DRILLER *(Check One)*:
☐ Owner ☒ Contractor _____ *Name*

4. WELL USE *(check)*:
☒ Community ☐ Industrial
☐ Individual ☐ Test
☐ Agricultural ☐ Other
☐ Dairy ☐ Horizontal

5. TYPE OF WORK *(check)*:
☑ New ☐ Reconstruction ☐ Destruction

Items 6 through 10 to be estimated for new wells, and exact for all other wells.

6. ANNULAR SEAL: Depth 50 ft.
Furnished by: ☐ Owner ☑ Contractor
☐ Driven Conductor Dia. _____ in., Wall (Gage) _____
☑ Sealing Material Concrete, Thickness _____ in.

7. DEPTH OF WELL *(feet)*:
Proposed 650 Existing _____
DIAMETER OF BORE *(in.)*: 24 to 26

8. CASING INSTALLED:
☑ Steel ☐ Plastic ☐ Other

From (ft.)	To (ft.)	Dia. (in.)	Wall (Gage)
0	650	16"	1/4

GRAVEL PACK: ☑ Yes ☐ No
From 50' to 650 ft.

9. PERFORATIONS *(if applicable)*:
From 400 to 650 ft.

10. SEALED ZONES *(if applicable)*:
From ? to _____ ft.

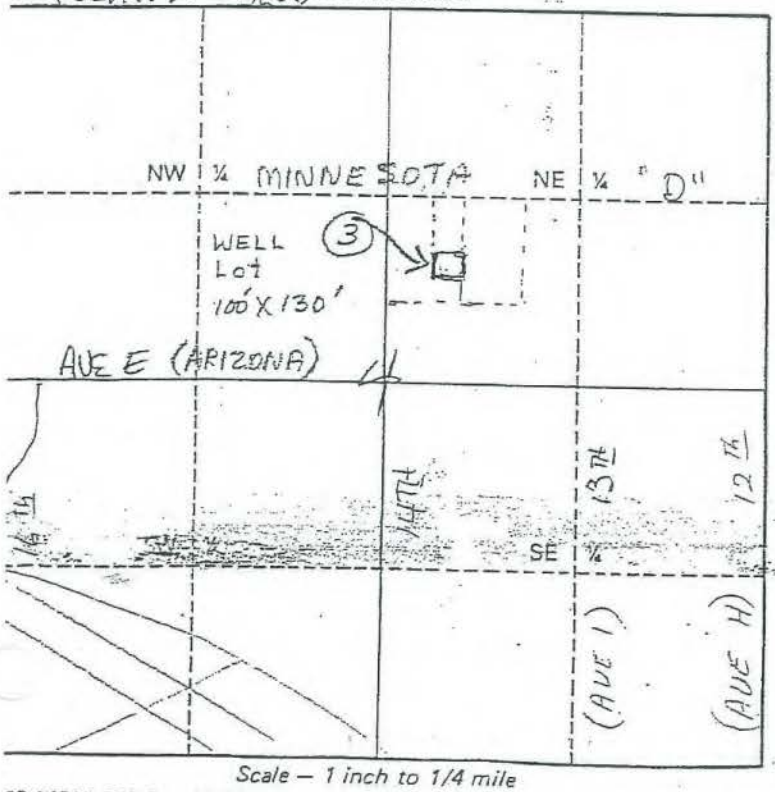
11. GENERAL LOCATION MAP: PG 30-6E
DUNLAP RANCH SUBDV
(a) Sketch location of well, name(s) and location of road(s) on section map.

(b) Township 2S N/S Range 2W E/W
Section 4

(c) Assessor's Parcel No. 301-091-03

(d) Solid or liquid waste disposal site within two miles?
☐ Yes ☐ No
Location: _____

YUCAIPA BLVD SECTION MAP



Scale — 1 inch to 1/4 mile

Do Not Fill In

Fee Stamp	Date Stamp
DATE 030987 2	
AMOUNT 170.00	
RECEIPT NO. 030987 2	
BY: McCulla Bros #5309	
PAID	

03-14785-631 Rev. 11/82

Continue on Reverse Side
NO MAP VIOL

2A

ENVIRONMENTAL HEALTH SERVICES DEPARTMENT
385 North Arrowhead Avenue · San Bernardino, CA 92415-0

WELL PERMIT

Do Not Fill In
Permit No. 03028701
Expiration MAR. 2, 1988
FF
FA
SN

PLEASE PRINT:

1. OWNER: Name [redacted]
Mailing Address [redacted]
WELL #2
City YUCAIPA CA. Zip 92399
Phone No. 714-790-1901

2. DATE OF WORK *(approximate)*:
Start 2 MAR 87 Complete 2 APRIL 87

3. WELL DRILLER *(Check One)*:
☐ Owner ☐ Contractor NOT KNOWN
Name

4. WELL USE *(check)*:
☑ Community ☐ Industrial
☐ Individual ☐ Test
☐ Agricultural ☐ Other
☐ Dairy ☐ Horizontal

5. TYPE OF WORK *(check)*:
☐ New ☐ Reconstruction ☒ Destruction

Items 6 through 10 to be estimated for new wells, and exact for all other wells.

6. ANNULAR SEAL: Depth _____ ft.
Furnished by: ☑ Owner ☐ Contractor
☐ Driven Conductor Dia. 10 in., Wall (Gage) _____
☐ Sealing Material N/A, Thickness N/A in.

7. DEPTH OF WELL *(feet)*:
Proposed _____ Existing 472'
DIAMETER OF BORE *(in.)*: 10'

8. CASING INSTALLED:
☐ Steel ☐ Plastic ☐ Other

From (ft.)	To (ft.)	Dia. (in.)	Wall (Gage)
0	472'	10"	

GRAVEL PACK: ☐ Yes ☑ No
From N/A to N/A ft.

9. PERFORATIONS *(if applicable)*:
From N/A to N/A ft.

10. SEALED ZONES *(if applicable)*:
From N/A to N/A ft.

11. GENERAL LOCATION MAP:

(a) Sketch location of well, name(s) and location of road(s) on section map.

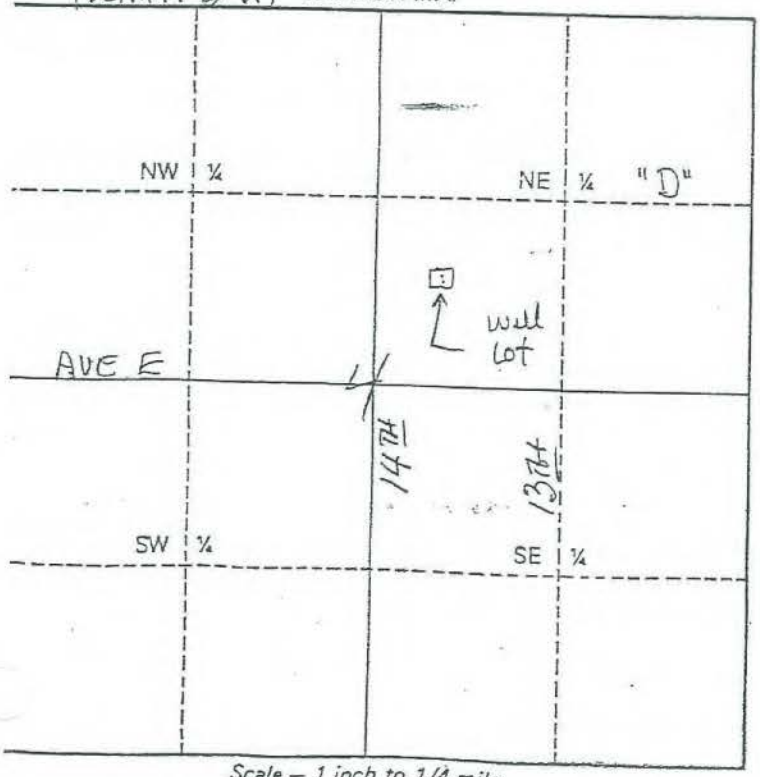
(b) Township 2S N/S Range 2W E/W
Section 4

(c) Assessor's Parcel No. 301-091-03

(d) Solid or liquid waste disposal site within two miles?
☐ Yes ☑ No

Location: _____

YUCAIPA BLVD SECTION MAP



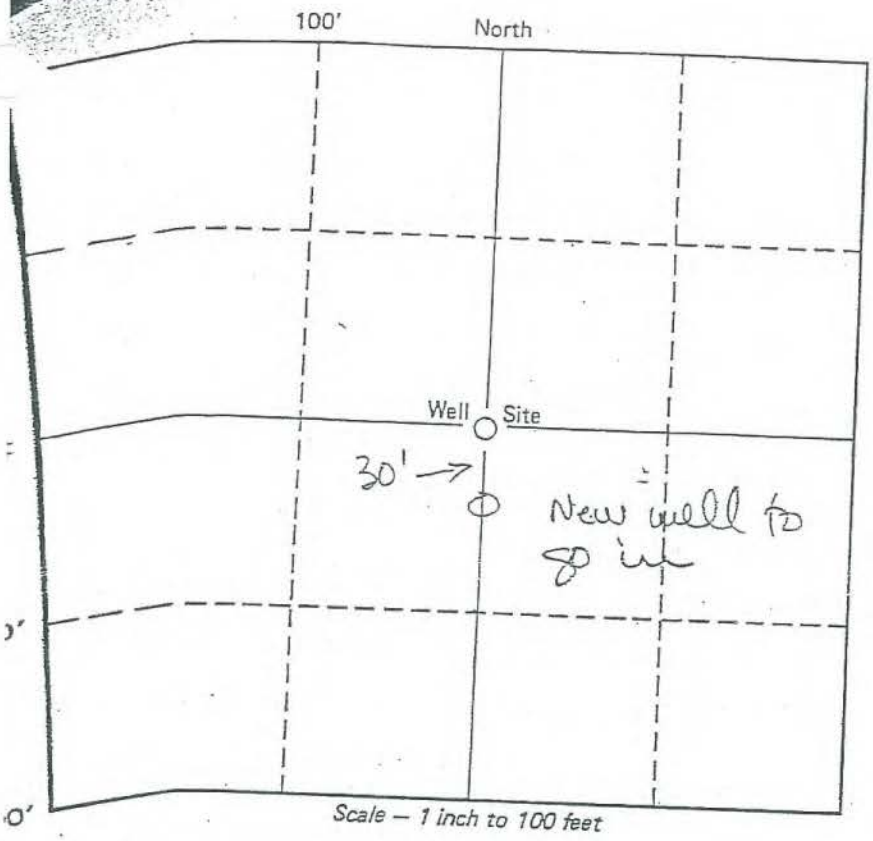
Scale – 1 inch to 1/4 mile

Do Not Fill In
Fee Stamp
Date Stamp
Fee Exempt
Rec'd 3/2/87

03-14785-631 Rev. 11/82

Continue on Reverse Side

2A



12. PLOT PLAN:

(a) In perspective to the well site, sketch and label the following items: well lot property lines, other wells *(include abandoned wells)*, sewage disposal systems *(sewers, septic tanks, leaching fields, seepage pits, cesspools)*, lakes and ponds, water courses and animals or fowl kept.

(b) Indicate the distance in *feet*, of any of the following which are within 200 ft. of the well site:

Other wells	
Sewers	
Septic tanks	
Leaching fields	
Seepage pits	
Cesspools	
Lakes and ponds	
Water courses	
Animals or fowl kept	

I have read this application and agree to comply with all laws regulating the type of work being performed. The California Labor Code requires Workers' Compensation Insurance as a prerequisite to permit issuance unless the applicant signs the following certificate:

☐ I certify that in the performance of the work for which this permit is issued, I shall not employ any person in any manner so as to become subject to the Workers' Compensation laws of California.

Owner's Signature Louis F. Burns Date 2 MAR 87

☐ Contractor's Signature _____ Date _____ Reg. No. _____

DISPOSITION OF PERMIT

(Do Not Fill In)

☑ Approved subject to the following:

A. Notify the Department, STUART LONG 387-4666, twenty-four (24) hours in advance to make an inspection of the following operations:

☐ Prior to sealing of the annular space or filling of the conductor casing.

☐ Verify the depth of the conductor (outer) casing prior to further drilling and installation of the inner casing.

☐ After installation of the surface protective slab and pumping equipment.

☑ During destruction of wells, prior to pouring the sealing material.

B. Submit to the Department within thirty (30) days after completion of work, a copy of:

☑ Water Well Driller's Report ☐ Bacteriological Analysis ☐ Inorganic Chemical Analysis

C. Other _____

☐ DENIED _____



0 - destroyed .10"

12. PLOT PLAN:

(a) In perspective to the well site, sketch and label the following items: well lot property lines, other wells *(include abandoned wells)*, sewage disposal systems *(sewers, septic tanks, leaching fields, seepage pits, cesspools)*, lakes and ponds, water courses and animals or fowl kept.

(b) Indicate the distance in *feet*, of any of the following which are within 200 ft. of the well site:

Other wells	50' - Abandoned per Bill
Sewers	
Septic tanks	
Leaching fields	
Seepage pits	
Cesspools	
Lakes and ponds	
Water courses	
Animals or fowl kept	

ENVIRONMENTAL HEALTH SERVICES MAR 6 1987 CHECKED

13. I have read this application and agree to comply with all laws regulating the type of work being performed. The California Labor Code requires Workers' Compensation Insurance as a prerequisite to permit issuance unless the applicant signs the following certificate:

☑ I certify that in the performance of the work for which this permit is issued, I shall not employ any person in any manner so as to become subject to the Workers' Compensation laws of California.

Owner's Signature _____ Date _____

☐ Contractor's Signature Bill Provence Date 3/3/87 Reg. No. _____

DISPOSITION OF PERMIT

(Do Not Fill In)

☒ Approved subject to the following:

A. Notify the Department, Stuart Long (714) 387-4666, twenty-four (24) hours in advance to make an inspection of the following operations:

☒ Prior to sealing of the annular space or filling of the conductor casing.

☐ Verify the depth of the conductor (outer) casing prior to further drilling and installation of the inner casing.

☒ After installation of the surface protective slab and pumping equipment.

☐ During destruction of wells, prior to pouring the sealing material.

B. Submit to the Department within thirty (30) days after completion of work, a copy of:

☒ Water Well Driller's Report. ☐ Bacteriological Analysis ☐ Inorganic Chemical Analysis

C. Other _____

DENIED _____

[redacted]

Hy 1.	22'	235-240 very rough.	
DC.	27' 10"	258-270 rough.	
DC	21' 11"		
	71' 9"		
DC	27' 3"	10. 350' 0"	24 630' 1"
	44' 0"	21' 7"	21' 1"
DC	17' 1"	11. 371' 7"	651' 3"
	116' 1"	21' 7"	21' 6"
DC	17' 3"	12. 393' 2"	25 673' 2"
	133' 4"	21' 8"	
	21' 7"	13. 414' 10"	oil #2
1.	154' 11"	21' 7"	
	21' 8"	14. 436' 5"	static 273
2	176' 7"	21' 7"	
	21' 7"	15. 458' 0"	
3.	198' 2"	21' 8"	
	21' 7"	16. 479' 8"	
4.	219' 7"	21' 8"	
	21' 7"	17. 501' 4"	
5.	241' 4"	21' 7"	
	22' 5"	18. 522' 11"	
6.	263' 7"	21' 6"	
	21' 7"	19. 544' 5"	
7.	285' 4"	21' 5"	
	21' 6"	20. 565' 10"	
8.	306' 10"	21' 7"	
	21' 7"	21. 586' 5"	
9	328' 5"	21' 7"	
	21' 7"	22. 608' 0"	
10	350' 0	22' 1"	

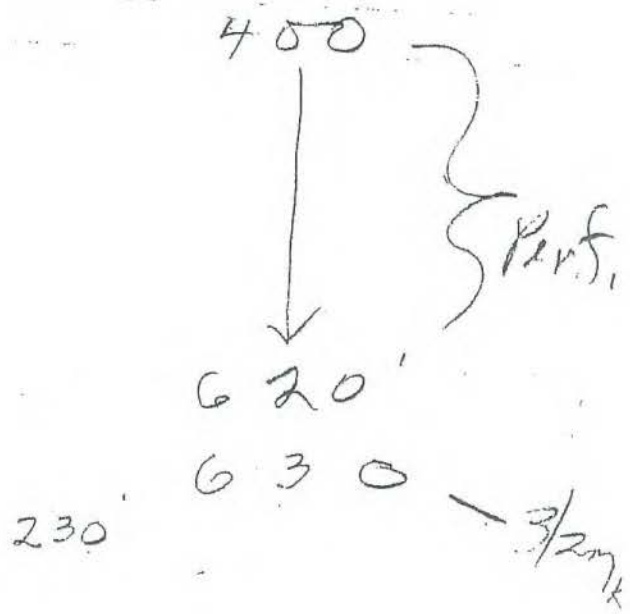
[redacted]

Well # 2A
25/2W-9G3

0-50'	conductor
50'-80'	coarse sand and fine gravel
80'-109'	sand no clays.
109'-115'	gray clay (loose) & fine gravel
115-125	brown clay (loose) coarse sand 70% fine gr
125-132'	sticky brown clay & sand
132-135'	sand (coarse) very loose clay 4'
135-148	sticky brown clay sand & gravel (Rough drillin
148-173	sticky brown clay some sand & fine gravel 1 firm spots
173-175	sand & little clay
175-180	sand & gravel with clay streaks.
180-183	sticky brown clay & coarse sand.
183-190	very sticky clay & fine sand & silt some gravel.
190-192	loose clays fine & coarse sand.
192-200	very sticky brown clay & sand some angel grains
200-215	coarse sand & loose clay some gravel.
215-225	sticky brown clay & sand & gravel.
225-239	coarse sand & loose clay.
239-250	sticky clay sand & gravel. (fragmented)
250-258	coarse sand & loose clay
258-280	coarse sand & fine gravel little clay
280-283	coarse sand & gravel increase in sticky clay.
283-308	coarse sand & gravel very loose clay.
308-338	sticky clay & coarse sand
338-341	very sticky clay some sand & gravel.
341-346	sticky clay & coarse sand.
346-353	sand & small fragmented gravel, little clay
353-370	coarse sand very uniform & clay. some gravel.
370-393	increase in clay very sticky
393-400	very sticky clay coarse sand & gravel (40%) till

Redlands Regular Meeting of 01-18-2022

[illegible]-445	sticky loose clay sand & gravel
445-470	loose clay & loose sand (80%)
470-473	sticky clay sand & gravel
473-481	coarse sand & gravel loose clay (~~[illegible]~~)
481-485	very tight sticky clay & coarse sand.
485-494	clay & coarse sand. (Clay is loose & sticky)
494-545	coarse sand fragmented gravel some clay
545-547	coarse sand gravel (jagged) sticky clay
547-560	coarse sand gravel little loose clay. a lot of very jagged white quartz
560-566	coarse sand fine gravel little clay very tough drilling very tight
566-573	sticky clay coarse sand and fragmented gravel.
573-583	loose sticky clay coarse sand & gravel.
583-[illegible]87	coarse sand some gravel (fine) loose sticky clay.
[illegible]87-590	coarse sand spotty gravels tight sticky clay
590-608	coarse uniform sand and loose clay (20%) fine fragmented gravels
608-648	coarse uniform sand sticky clay little gravel
[illegible]3-673	coarse sand uniform little of no clay very firm.



Redlands Regular Meeting of 01-18-2022

FORM 115

INVESTIGATION

South Coastal Basin

DIVISION OF WATER RESOURCES
DEPARTMENT OF PUBLIC WORKS
STATE OF CALIFORNIA

2S/2W-3E1

SHEET 1

NUMBER F-132j-

WELL LOG

LOCAL DESIGNATION Owner #6

LOCATION 40 ~~50'~~ S. of Ave. D, ST on ℄ of 11th St., proj. S., Lot #40, Dunlap Sub. #2, Yucaipa.

Loc.#18216F

OWNER [redacted]

DATE COMPLETED ~~1930~~ 1927

DIAMETER OF CASING 20"

DRILLED BY Clark McEwen S.B.V.W.C.D.

SOURCE OF INFORMATION Redlands-Yucaipa Land Co.

INSPECTED WHILE DRILLING SEE FILE NO.

SURFACE ELEVATION 2160 D.W.R. Map

SKETCH

DEPTH	ELEVATION OF BOTTOM OF STRATUM	MATERIAL	THICKNESS FEET	% VOIDS	ABSOLUTE VOIDS FEET	TOTAL VOIDS FEET
1-122		Dry sand	122			
122-130		Dirty gravel	8			
130-137		Clay	7			
152		Gravel	15			
236		Sandy clay	84			
240		Dirty gravel	4			
252		Fair gravel	12			
328		Sandy clay	74			
340		Gravel - extra good	12			
378		Clay and silt	38			
388		Gravel	10			
395		Dirty gravel	7			
440		Clay and gravel	45			
456		Gravel	16			
466		Clay	10			
472		Fair gravel	6			
478		Clay	6			
500		Gravel	22			
505		Clay	5			
544		Gravel	39			
590		Rocks and muddy gravel	50			
599		Clay	9			
		Perf 135-578				
		Pumps 90" - drawdown 90'				
		PERF. WITH 1/2" KNIFE 6 HOLES TO A ROUND				

MICROFILMED

FOR FIELD COPIES USE ALTERNATE LINES

LOG OBTAINED BY DATE

SOUTHERN CALIFORNIA EDISON COMPANY

APRIL 9, 1979

[redacted]

YUCAIPA, CA 92399

SUBJECT: HYDRAULIC TEST RESULTS - WELL 6
ACCT: 4-26-31-618-3080
LOTH & AVE "D"
DATE OF TEST:FEBRUARY 28,1979

IN ACCORDANCE WITH YOUR REQUEST, A TEST WAS MADE ON YOUR TURBINE WELL PUMP ON THE DATE LISTED ABOVE. IF YOU HAVE ANY QUESTIONS REGARDING THE TEST RESULTS WHICH FOLLOW, PLEASE CONTACT L. E. WILSON, 793-2712.

EQUIPMENT

PUMP: L&B NO: 26896
MOTOR: US 125.0 HP NO: 499075
METER: P229-204

TEST RESULTS

DISCHARGE PRESSURE,PSI	53.5
STANDING WATER LEVEL,FT	321.7
DRAWDOWN,FT	23.8
DISCHARGE HEAD,FT	123.6
PUMPING WATER LEVEL,FT	345.5
TOTAL HEAD,FT	469.1
CAPACITY,GPM	557.
GPM PER FT DRAWDOWN	23.4
ACRE FT PUMPED IN 24 HRS	2.466
KW INPUT TO MOTOR	106.3
HP INPUT TO MOTOR	142.5
MOTOR LOAD(%)	103.8
MEASURED SPEED OF PUMP,RPM	1775.0
KWH PER ACRE FT	1035.
OVERALL PLANT EFFICIENCY(%)	46.4
CUSTOMER'S METER,GPM	553

W. S. FRANKEN
DISTRICT MANAGER

QUADRUPLICATE
RETAIN THIS COPY

WATER WELL DRILLERS REPORT

(Sections 7076, 7077, 7078, Water Code)

8

STATE OF CALIFORNIA

Do Not Fill In
No. 100589
State Well No. 2S/2W-5K1
Other Well No.

(1) OWNER:

Name [redacted]
Address [redacted]
Yucaipa, California

(2) LOCATION OF WELL:

County San Bernardino Owner's number, if any— 10
R. F. D. or Street No. Ave. E near the corner of 17th St.

(3) TYPE OF WORK (*check*):

New well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in Item 11.

(4) PROPOSED USE (*check*):

Domestic ☐ Industrial ☐ Municipal ☒
Irrigation ☐ Test Well ☐ Other ☐

(5) EQUIPMENT:

Rotary ☐
Cable ☒
Dug Well ☐

(6) CASING INSTALLED:

SINGLE ☒ DOUBLE ☐
From 0 ft. to 690 ft. 16 Diam. 5/16 ~~Gage~~ or Wall

If gravel packed

Diameter of Bore	from ft.	to ft.

Type and size of shoe or well ring 16"x14"x1/4" Size of gravel:
Describe joint All joints butt welded

(7) PERFORATIONS:

Type of perforator used Mills
Size of perforations 3/8 in., length, by 2 in.

From ft. to	ft.	Perf. per row	Rows per ft.
330	670	7	1 row per ft.

(8) CONSTRUCTION:

Was a surface sanitary seal provided? ☒ Yes ☐ No To what depth 50 ft.
Were any strata sealed against pollution? ☐ Yes ☒ No If yes, note depth of strata

From ft.	to ft.

Method of Sealing By Owners

(9) WATER LEVELS:

Depth at which water was first found	169 ft.
Standing level before perforating	169 ft.
Standing level after perforating	169 ft.

(10) WELL TESTS:

Was a pump test made? ☒ Yes ☐ No If yes, by whom? Owners
Yield: gal./min. with ft. draw down after hrs.
Temperature of water Was a chemical analysis made? ☐ Yes ☐ No
Was electric log made of well? ☐ Yes ☐ No

(11) WELL LOG:

Total depth 690 ft. Depth of completed well 690 ft.

Formation: *Describe by color, character, size of material, and structure.*

0	4	Black adobe
4	7	White caleche
7	55	Brown clay
55	133	Brown sandy clay and gravel
133	151	Sand and gravel
151	165	Brown sandy clay
165	175	Gravel
175	242	Brown sandy clay with gravel streaks
242	248	Brown sandy clay
248	282	Brown clay with gravel streaks
282	330	Clay and embedded gravel
330	335	Loose sand and gravel
335	360	50% cemented gravel & 50% loose gravel with clay streaks
360	548	Clean coarse sand and gravel with streaks of cemented gravel
548	570	Brown clay with large gravel embedded
570	600	Brown gravel- clay-and conglomerate
600	618	Loose coarse sand-gravel and boulders
618	622	Tight clay-gravel and boulders
622	667	Clean coarse sand-gravel and boulders
667	690	Brown tight clay-gravel and boulders

Work started Jan. 16 19 64 Completed Mar. 31 19 64

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME KIRKLAND WELL SERVICE
(Person, firm, or corporation) (*Typed or printed*)
Address 32291 Dunlap Blvd.
Yucaipa, California

[SIGNED] K. Kirkland
Well Driller

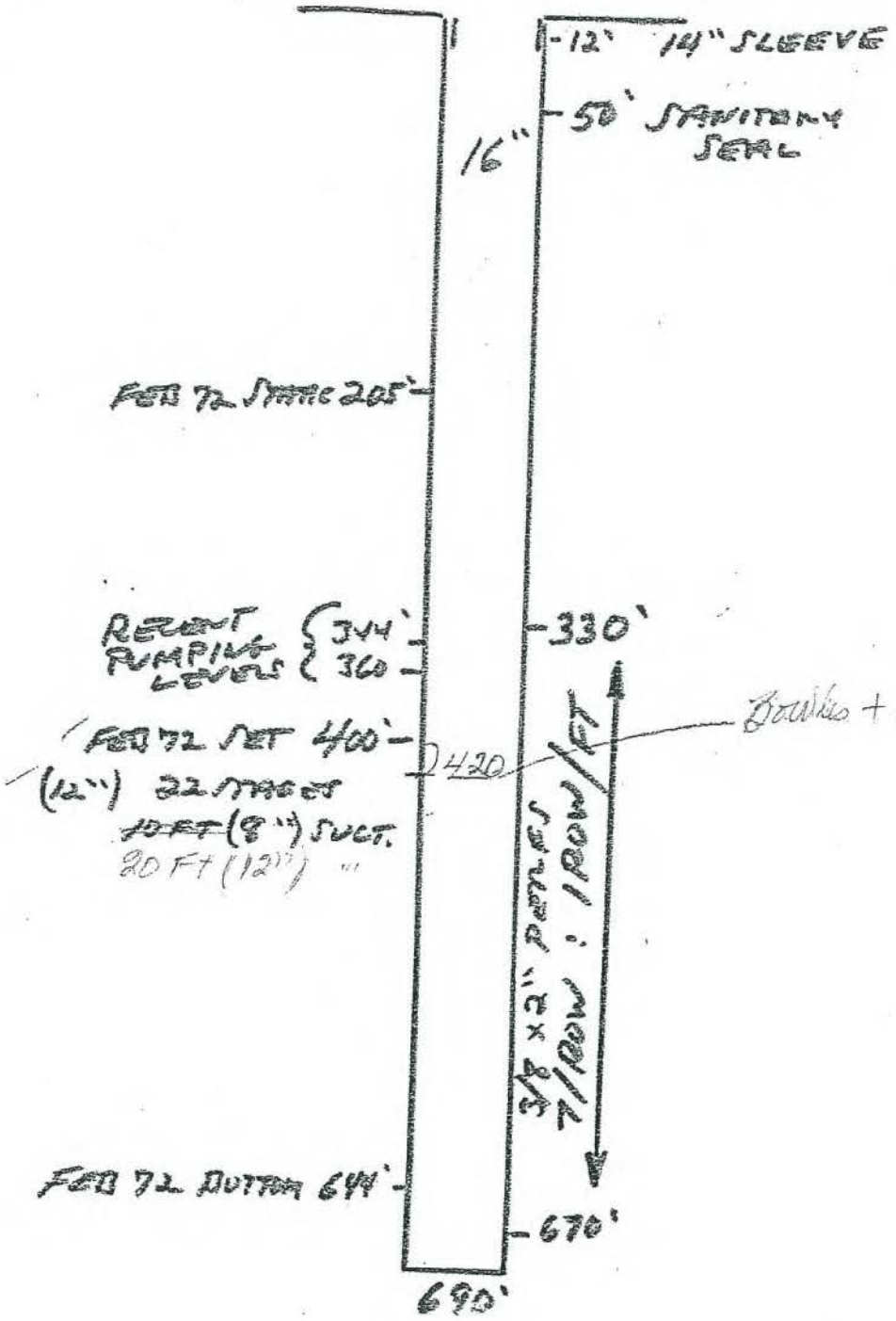
License No. 168847 Dated April 5, 19 64

2102 7-59 600 QUIN △ SPO

29621

#10 Well

This is Harold's Note.
Can't find bill that
it was done
Bernice



TRIPLICATE
Owner's Copy

Page 1 of 1

Owner's Well No. 11

Date Work Began 4/23/97 Ended 7/3/97

Local Permit Agency san bernardino environmental health

Permit No. 04219701 Permit Date 4/21/97

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet
No. 469733

DWR USE ONLY — DO NOT FILL IN
STATE WELL NO./STATION NO.
LATITUDE LONGITUDE
APN/TRS/OTHER

GEOLOGIC LOG

ORIENTATION (✓) X VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)

DEPTH TO FIRST WATER 347 (Ft.) BELOW SURFACE

DEPTH FROM SURFACE Ft.	to Ft.	DESCRIPTION *Describe material, grain size, color, etc.*
0	50	SAND & CLAY
50	180	course sand & clay
180	210	COARSE SAND & CLAY
210	350	CLAY
350	940	COARSE GRAVEL, SAND & SOME CLAY
940	960	SAND, GRAVEL & SMALL ROCKS
960	1720	CLAY

RECEIVED
DEC - 3 1997
[redacted]

TOTAL DEPTH OF BORING 1720 (Feet)
TOTAL DEPTH OF COMPLETED WELL 1710 (Feet)

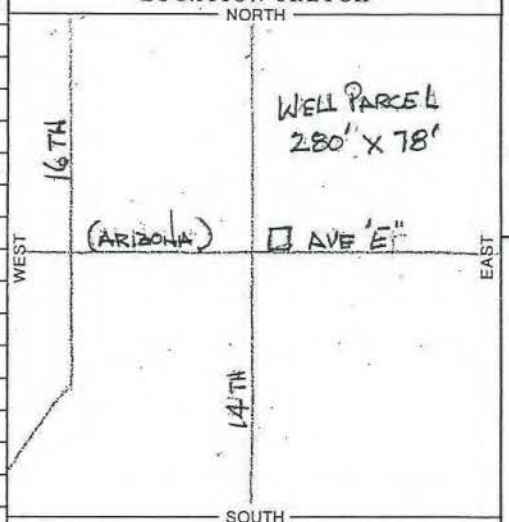
WELL OWNER

Name [redacted]
Mailing Address [redacted]
YUCAIPA CA 92399
CITY STATE ZIP

WELL LOCATION

Address
City YUCAIPA
County SAN BERNARDINO
APN Book ___ Page ___ Parcel ___
Township 2S Range 2W Section 4
Latitude ___ NORTH Longitude ___ WEST
DEG. MIN. SEC. DEG. MIN. SEC.

LOCATION SKETCH



Illustrate or Describe Distance of Well from Landmarks such as Roads, Buildings, Fences, Rivers, etc.
PLEASE BE ACCURATE & COMPLETE.

ACTIVITY (✓)

X NEW WELL
MODIFICATION/REPAIR
___ Deepen
___ Other (Specify)
___ DESTROY *(Describe Procedures and Materials Under "GEOLOGIC LOG")*

PLANNED USE(S) (✓)

___ MONITORING
WATER SUPPLY
___ Domestic
X Public
___ Irrigation
___ Industrial
___ "TEST WELL"
___ CATHODIC PROTECTION
___ OTHER (Specify)

DRILLING METHOD REVERSE ROTARY FLUID WATER

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH OF STATIC WATER LEVEL 347 (Ft.) & DATE MEASURED 6/18/97
ESTIMATED YIELD 2000 (GPM) & TEST TYPE PUMP
TEST LENGTH 51 (Hrs.) TOTAL DRAWDOWN 76 (Ft.)
* *May not be representative of a well's long-term yield.*

CASING(S)

DEPTH FROM SURFACE Ft.	to Ft.	BORE-HOLE DIA. (Inches)	TYPE (✓) BLANK	SCREEN	CONDUCTOR	FILL PIPE	MATERIAL/GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)
0	50	36			X		STEEL	30	3/8	
0	705	26	X				STEEL	16	5/16	.090
705	1205	26		X			STEEL	16	5/16	.090
1205	1210	24	X				STEEL	16x12	5/16	
1210	1690	24		X			STEEL	12	5/16	.090
1690	1710	24	X				STEEL	12	5/16	

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft.	to Ft.	TYPE CEMENT (✓)	BENTONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
0	300	X			
300	1710				4x10

ATTACHMENTS (✓)

___ Geologic Log
___ Well Construction Diagram
___ Geophysical Log(s)
___ Soil/Water Chemical Analyses
___ Other ___

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME LAYNE CHRISTENSEN COMPANY
(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

11001 ETIWANDA AVE. FONTANA CA 92337
ADDRESS CITY STATE ZIP

Signed Rolando Ett
WELL DRILLER/AUTHORIZED REPRESENTATIVE

11-26-97
DATE SIGNED

510011
C-57 LICENSE NUMBER

25/2W - 464

TRIPLICATE
Owner's Copy
Page 1 of 1
Owner's Well No. 11

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet
No. 469733

Date Work Began 4/23/97 Ended 7/3/97
Local Permit Agency san bernardino environmental health
Permit No. 04219701 Permit Date 4/21/97

DWR USE ONLY — DO NOT FILL IN
STATE WELL NO./STATION NO.
LATITUDE LONGITUDE
APN/TRS/OTHER

GEOLOGIC LOG

ORIENTATION (✓) X VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)
DEPTH TO FIRST WATER 347 (Ft.) BELOW SURFACE

DEPTH FROM SURFACE Ft.	to Ft.	DESCRIPTION *Describe material, grain size, color, etc.*
0	50	SAND & CLAY
50	180	course sand & clay
180	210	COARSE SAND & CLAY
210	350	CLAY
350	940	COARSE GRAVEL, SAND & SOME CLAY
940	960	SAND, GRAVEL & SMALL ROCKS
960	1720	CLAY

RECEIVED
DEC - 3 1997
[redacted]

TOTAL DEPTH OF BORING 1720 (Feet)
TOTAL DEPTH OF COMPLETED WELL 1710 (Feet)

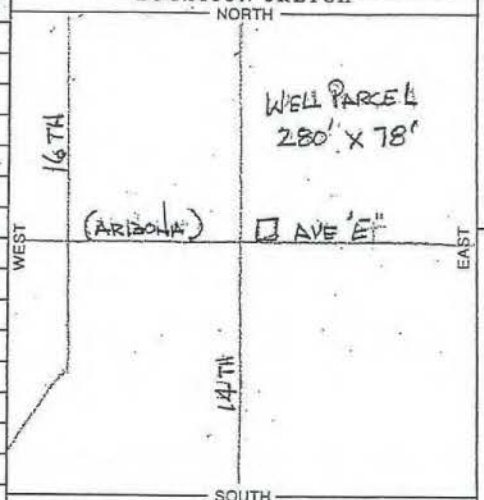
WELL OWNER

Name [redacted]
Mailing Address [redacted]
YUCAIPA CA 92399
CITY STATE ZIP

WELL LOCATION

Address
City YUCAIPA
County SAN BERNARDINO
APN Book Page Parcel
Township 25 Range 2W Section 4
Latitude DEG. MIN. SEC. NORTH Longitude DEG. MIN. SEC. WEST

LOCATION SKETCH



Illustrate or Describe Distance of Well from Landmarks such as Roads, Buildings, Fences, Rivers, etc. PLEASE BE ACCURATE & COMPLETE.

ACTIVITY (✓)
X NEW WELL
MODIFICATION/REPAIR
___ Deepen
___ Other (Specify)
___ DESTROY *(Describe Procedures and Material Under "GEOLOGIC LOG")*

PLANNED USE(S) (✓)
___ MONITORING
WATER SUPPLY
___ Domestic
X Public
___ Irrigation
___ Industrial
___ "TEST WELL"
___ CATHODIC PROTECTION
___ OTHER (Specify)

DRILLING METHOD REVERSE ROTARY FLUID WATER

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH OF STATIC WATER LEVEL 347 (Ft.) & DATE MEASURED 6/18/97
ESTIMATED YIELD 2000* (GPM) & TEST TYPE PUMP
TEST LENGTH 51 (Hrs.) TOTAL DRAWDOWN 76 (Ft.)
** May not be representative of a well's long-term yield.*

CASING(S)

DEPTH FROM SURFACE Ft.	to Ft.	BORE-HOLE DIA. (Inches)	TYPE (✓) BLANK	SCREEN	CONDUCTOR	FILL PIPE	MATERIAL/ GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)
0	50	36			X		STEEL	30	3/8	
0	705	26	X				STEEL	16	5/16	
705	1205	26		X			STEEL	16	5/16	.090 .090
1205	1210	24	X				STEEL	16x12	5/16	
1210	1690	24		X			STEEL	12	5/16	.090
1690	1710	24	X				STEEL	12	5/16	

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft.	to Ft.	TYPE CEMENT (✓)	BENTONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
0	300	X			
300	1710				4x10

ATTACHMENTS (✓)
___ Geologic Log
___ Well Construction Diagram
___ Geophysical Log(s)
___ Soil/Water Chemical Analyses
___ Other
ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.
NAME LAYNE CHRISTENSEN COMPANY (PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)
ADDRESS 11001 ETIWANDA AVE. CITY FONTANA STATE CA ZIP 92337
Signed Rolanda Eck WELL DRILLER/AUTHORIZED REPRESENTATIVE
DATE SIGNED 11-26-97
C-57 LICENSE NUMBER 510011

DWR 188 REV. 7-90 18955 IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM WELL NO-11

DUPLICATE
Driller's Copy

Page 1 of 2
Owner's Well No. 12
Date Work Began 9/25/98 Ended 11/23/98
Local Permit Agency San Bernardino County dept. of Health
Permit No. 19980080117 Permit Date

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet
No. 537229

DWR USE ONLY — DO NOT FILL IN
STATE WELL NO./STATION NO.
LATITUDE LONGITUDE
APN/TRS/OTHER

GEOLOGIC LOG

ORIENTATION (∠) -X- VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)
DEPTH TO FIRST WATER 321 (Ft.) BELOW SURFACE

DEPTH FROM SURFACE Ft.	to Ft.	DESCRIPTION *Describe material, grain size, color, etc.*
0	40	Top Soil, sand & gravel
40	60	sand & gravel
60	110	sand & gravel w/clay
110	130	Black & brown sand w/gravel & clay
130	140	sand
140	160	sand & gravel
160	170	sand & clay
170	200	sand, gravel & clay
200	230	fine sand & clay
230	240	fine sand,clay & little gravel
240	280	fine sand & little gravel
280	330	sand, gravel, little clay
330	360	Black sand & little gravel
360	400	consolidated sand
400	440	sand & gravel
440	450	sand
450	470	cemented sand
470	530	sand & some gravel
530	540	sand
540	570	consolidated sand
570	610	sand, gravel & clay
610	650	sand & gravel
650	680	sand & gravel
680	750	sand & gravel
750	770	sand
770	800	sand & gravel
800	810	consolidated sand
810	830	cemented sand w/ rock
830	850	sand & gravel
850	860	sand, gravel & clay

TOTAL DEPTH OF BORING 1120 (Feet)
TOTAL DEPTH OF COMPLETED WELL 1100 (Feet)

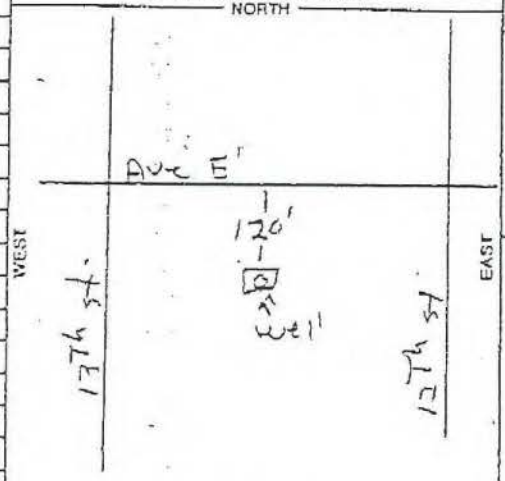
WELL OWNER

Name [redacted]
Mailing Address [redacted]
City Yucaipa Ca. 92399 STATE ZIP

WELL LOCATION

Address xxxxxxx
City Yucaipa
County San Bernardino
APN Book 31 Page 71 Parcel 301-112-07
or Township 2S Range 2W Section 4
or Latitude ___ DEG. ___ MIN. ___ SEC. NORTH Longitude ___ DEG. ___ MIN. ___ SEC. WE

LOCATION SKETCH



Illustrate or Describe Distance of Well from Landmarks such as Roads, Buildings, Fences, Rivers, etc.
PLEASE BE ACCURATE & COMPLETE.

ACTIVITY (∠)

X NEW WELL
MODIFICATION/REPAIR
___ Deepen
___ Other (Specify)
___ DESTROY (Describe Procedures and Material Under "GEOLOGIC LO
PLANNED USE(S) (∠)
___ MONITORING
WATER SUPPLY
___ Domestic
X Public
___ Irrigation
___ Industrial
___ "TEST WELL"
___ CATHODIC PROTE TION
___ OTHER (Specify)

DRILLING METHOD Reverse FLUID water

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH OF STATIC WATER LEVEL 321 (Ft.) & DATE MEASURED 10/8/98
ESTIMATED YIELD* 2500 (GPM) & TEST TYPE pump
TEST LENGTH 59 (Hrs.) TOTAL DRAWDOWN 60 (Ft.)
* *May not be representative of a well's long-term yield.*

CASING(S)

DEPTH FROM SURFACE Ft.	to Ft.	BORE-HOLE DIA. (Inches)	TYPE (∠) BLANK	SCREEN	CONDUCTOR	FILL PIPE	MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)
0	35	36	X		X		A53GB	30	3/8	
35	390	26	X				A53GB	16	5/16	
390	430	26		X			A53GB	16	5/16	std.flo.050
430	470	26		X			A53GB	16	5/16	full flo.050
470	620	26		X			A53GB	16	5/16	std.flo.050
620	740	26		X			A53GB	16	5/16	full flo.050

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft.	to Ft.	TYPE CEMENT (∠)	BENTONITE (∠)	FILL (∠)	FILTER PACK (TYPE/SIZE)
0	35	X			
0	300	X			
301	1100				6x14kel-p

ATTACHMENTS (∠)

___ Geologic Log
___ Well Construction Diagram
___ Geophysical Log(s)
___ Soil/Water Chemical Analyses
___ Other
ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief

NAME Layne Christensen Company
(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)
ADDRESS 11001 Etiwanda Ave., Fontana, Ca. 92337
CITY STATE ZIP

Signed Robert A. Ellett
WELL DRILLER/AUTHORIZED REPRESENTATIVE
11-26-98
DATE SIGNED
510011
C-57 LICENSE NUMBER

18956

DUPLICATE
Driller's Copy

Page 2 of 2
Owner's Well No. 12
Date Work Began 8/25/98, Ended 11/23/98
Local Permit Agency San Bernardino County Dept. of Health
Permit No. 19980801117 Permit Date

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet
No. 537230

DWR USE ONLY — DO NOT FILL IN
STATE WELL NO./STATION NO.
LATITUDE LONGITUDE
APN/TRS/OTHER

GEOLOGIC LOG

ORIENTATION (✓) X VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)
DEPTH TO FIRST WATER 321 (Ft.) BELOW SURFACE

DEPTH FROM SURFACE Ft.	to Ft.	DESCRIPTION *Describe material, grain size, color, etc.*
860	910	sand & gravel
910	950	sand, gravel & clay
950	960	gravel & sand
960	970	coarse sand & rocks
970	1050	gravel & sand
1050	1060	gravel, sand & granite fractured layer
1060	1090	granite, mostly crushed
1090	1120	granite, fractured

TOTAL DEPTH OF BORING 1120 (Feet)
TOTAL DEPTH OF COMPLETED WELL 1100 (Feet)

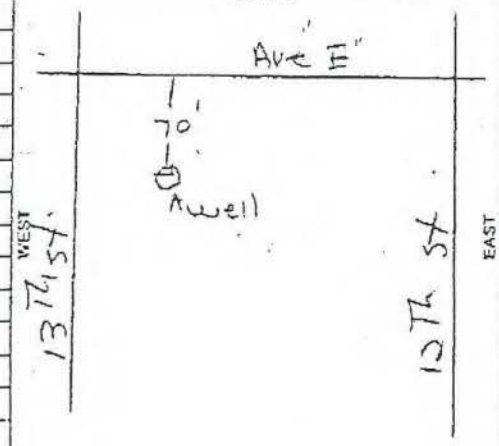
WELL OWNER

Name [redacted]
Mailing Address [redacted]
City Yucaipa State Ca Zip 92399

WELL LOCATION

Address
City Yucaipa
County San Bernardino
APN Book 31 Page 71 Parcel 301-112-07
or Township 2S Range 2W Section 4
or Latitude ___ DEG. ___ MIN. ___ SEC. NORTH Longitude ___ DEG. ___ MIN. ___ SEC. WE

LOCATION SKETCH



Illustrate or Describe Distance of Well from Landmarks such as Roads, Buildings, Fences, Rivers, etc. PLEASE BE ACCURATE & COMPLETE.

ACTIVITY (✓)
X NEW WELL
MODIFICATION/REPAIR
___ Deepen
___ Other (Specify)
___ DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")

PLANNED USE (✓)
___ MONITORING
WATER SUPPLY
___ Domestic
X Public
___ Irrigation
___ Industrial
___ "TEST WELL"
___ CATHODIC PROTECTION
___ OTHER (Specify)

DRILLING METHOD Reverse FLUID water

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH OF STATIC WATER LEVEL 321 (Ft.) & DATE MEASURED 10/8/98
ESTIMATED YIELD* 2500 (GPM) & TEST TYPE pump
TEST LENGTH 59 (Hrs.) TOTAL DRAWDOWN 50 (Ft.)
* *May not be representative of a well's long-term yield.*

CASING(S)

DEPTH FROM SURFACE Ft.	to Ft.	BORE-HOLE DIA. (Inches)	TYPE (✓) BLANK	SCREEN	CONDUCTOR	FILL PIPE	MATERIAL/GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)
740	1090	26		X			A53GB	16	5/16	std.flo.050
1090	1100	26	X				A53GB	16	5/16	fullflo.050

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft.	to Ft.	TYPE CEMENT (✓)	BENTONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)

ATTACHMENTS (✓)

___ Geologic Log
___ Well Construction Diagram
___ Geophysical Log(s)
___ Soil/Water Chemical Analyses
___ Other
ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belie

NAME Layne Christensen Company (PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)
ADDRESS 11001 Etiwanda Ave., Fontana, Ca. 92337 CITY STATE ZIP
Signed [signature] (WELL DRILLER/AUTHORIZED REPRESENTATIVE)
510011 LICENSE NUMBER

San Bernardino County Department of Public Health
DIVISION OF ENVIRONMENTAL HEALTH SERVICES
385 North Arrowhead Avenue, San Bernardino, CA 92415-0160

387-4646 Sco
4666 Mike
Fund

WELL PERMIT

(Please Print)

RECEIVED
AUG 3 3 1998

#12

DO NOT FILL IN
Permit Number 19980801 17
Expiration 8-25-99
FF
FA
SN

DO NOT FILL IN
Date 8-25-98
Amount $ 370.00
Receipt Number 14039
Paid By Layne Christensen Co.
Check #2712109

1. OWNER: Name [redacted]
Mailing Address [redacted]
City Yucaipa, ca. 92399 Zip 92399
Site Address
City Yucaipa Zip 92399
Telephone Number (909) 796-1901

2. WELL DRILLER: Layne Christensen Co.
Business Name
Sept 1998
Start Date
Completion Date

3. WELL USE (check):
☐ Community ☐ Horizontal ☐ Test
☐ Individual ☐ Monitoring ☐ Dairy
☐ Agricultural ☒ Public Water Supply ☐ Other

4. TYPE OF WORK (check):
☒ New ☐ Reconstruction ☐ Destruction

Items 6 through 10 to be estimated for new wells, exact for all other wel

5. ANNULAR SEAL: Seal Depth 300'
Furnished by: ☐ Owner ☒ Contractor
☒ Conductor Dia. 30'X35 in., Wall (Gage)
☐ Sealing Material Concrete, Thickness 5"

6. DEPTH OF WELL (feet):
Proposed 1100' Existing
DIAMETER OF BORE (in.): 26"

7. CASING INSTALLED:
☒ Steel ☐ Plastic ☐ Other

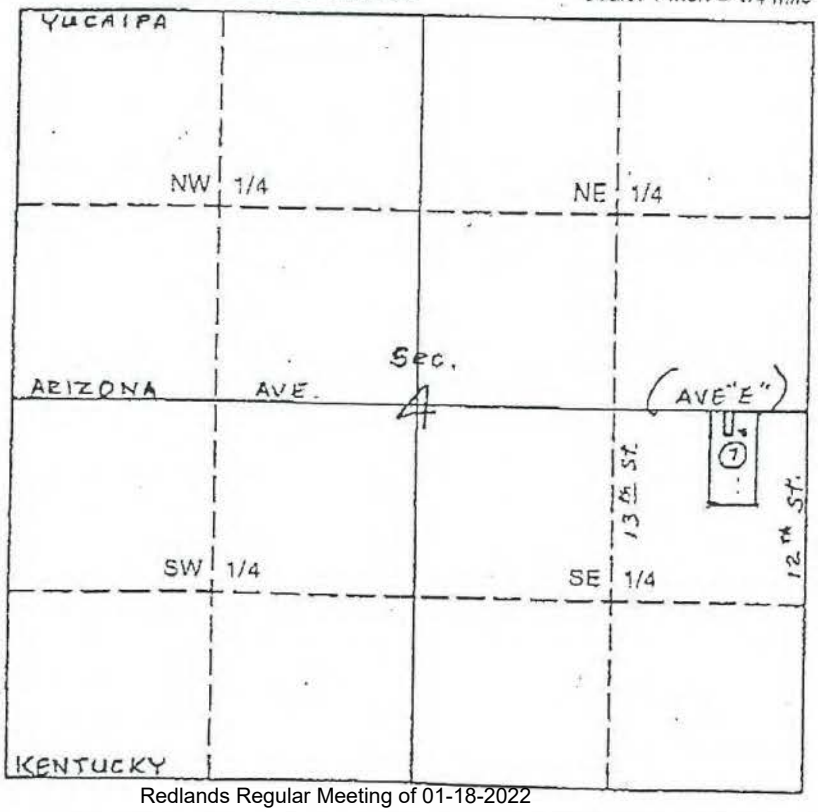
From (ft.)	To (ft.)	Dia. (in.)	Wall (Gage
0	1100	16	5/16

Gravel Pack: ☒ Yes ☐ No
From 300' to 1100' ft.

8. PERFORATIONS (if applicable):
From 390' to 1090' ft. 40' LEN

9. SEALED ZONES (if applicable):
From 0 to 300' ft.

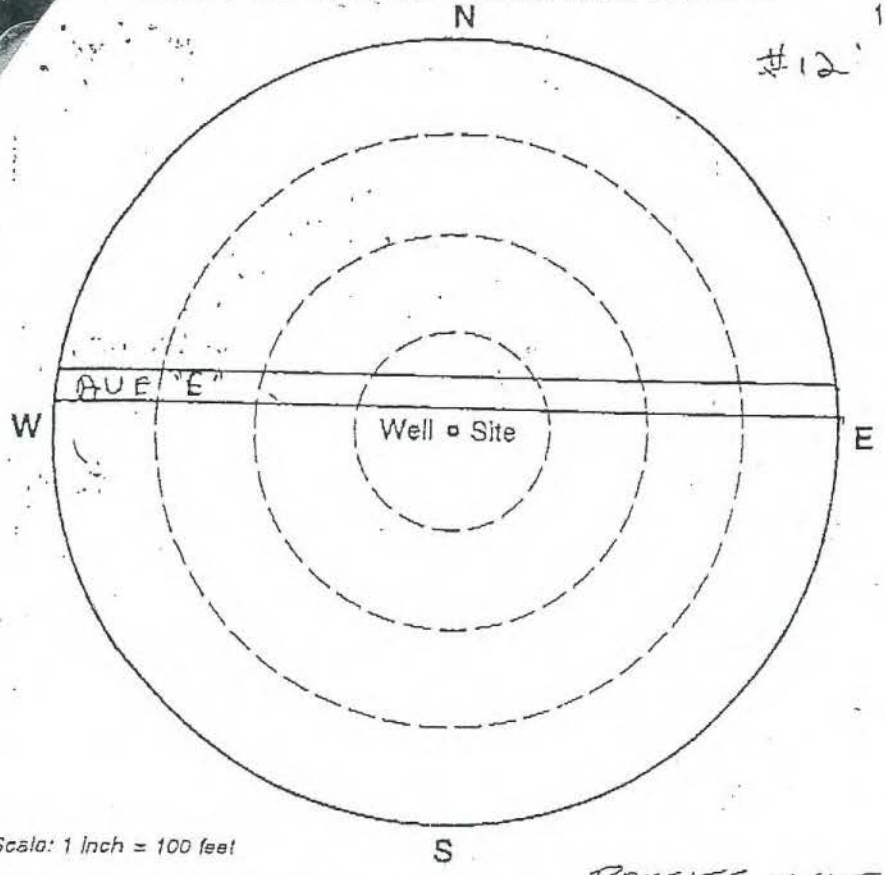
SECTION MAP - DO NOT FILL IN Scale: 1 inch = 1/4 mile



10. LOCATION INFORMATION: 30-E6
649-D4
(a) Township:
Tier 2S N/S Range 2W E/W Section 4
(b) Assessor's Parcel No. ~~301-112-06 + portions~~ 301-112-07
(c) Latitude and Longitude
Book 31 Page 71
Lat: ____ °, ____ ', ____ " N/S
Long: ____ °, ____ ', ____ " E/W
(d) Solid or Liquid Disposal Site within Two Miles
☐ Yes ☐ No
Location

DO NOT FILL IN
Seal
Cap
Check Valve
Electricals
Slab
Tag
Building & Safety Notified

11. PLOT PLAN: 1998080117



Scale: 1 inch = 100 feet

(a) In perspective to the well site, sketch and label the following items: well lot property lines, other wells *(include abandoned wells)*, sewage disposal systems *(sewers, septic tanks, leaching fields, seepage pits, cesspools)*, lakes and ponds, watercourses and animals or fowl kept.

(b) Indicate the distance, in feet, of any of the following which are within 200 ft. of the well site:

Other _____
Sewers _____
Septic tanks _____
Leaching fields _____
Seepage pits _____
Cesspools _____
Lakes and ponds _____
Watercourses _____
Animals or fowl kept _____

(c) ☐ None of the above are within 200 feet of the well si

PRESITE OK BY M. FARRELL 8.25.98

12. I have read this application and agree to comply with all laws regulating the type of work being performed.

C-57 Contractor's Signature Robert A. Ellis Date 8-21-98

County Registration No. 84 California License No. 510011

DISPOSITON OF PERMIT

(For Department Use Only)

☐ Sent to Water Agency for review.

☐ Water Agency conditions or recommendations attached.

☐ Denied _____

☒ Approved subject to the following:

A. ☒ Notify the Department, Safe Drinking Water Section (909) 387-4666, twenty-four (24) hours in advanc to make an inspection of the following operations:

- ☒ Prior to sealing of the annular space or filling of the conductor casing.
- ☒ After installation of the surface protective slab and pumping equipment.
- ☐ During destruction of wells, prior to pouring the sealing material.

B. ☒ Submit to the Department, within thirty (30) days after completion of work, a copy of:

- ☒ Water Well Driller's Report
- ☒ Bacterial Analysis
- ☒ Inorganic Chemical Analysis
- ☒ Radiological Analysis
- ☒ General Mineral
- ☒ Organic Chemical Analysis
- ☒ General Physical

Comments _____

25/2W-4L

WTWC Well 14

*The free Adobe Reader may be used to view and complete this form. However, software must be purchased to complete, save, and reuse a saved form.

File Original with DWR

State of California

Well Completion Report

Refer to Instruction Pamphlet

No. e054636

Page 1 of 1

Owner's Well Number 14

Date Work Began 11/27/2006 Date Work Ended 1/29/2007

Local Permit Agency San Bernardino Department of Environmental Health

Permit Number 2006111150 Permit Date 11/29/06

DWR Use Only – Do Not Fill In

State Well Number/Site Number

Latitude N Longitude W

APN/TRS/Other

Geologic Log

Orientation ◉ Vertical ○ Horizontal ○ Angle Specify

Drilling Method Reverse Circulation Rotary Drilling Fluid Bentonite mud

Depth from Surface Feet	to Feet	Description Describe material, grain size, color, etc
0	40	Top soil, sand & gravel.
40	70	Sand and gravel.
70	130	Sand, gravel and some clay.
130	150	Sand and clay.
150	195	Sand, clay and gravel.
195	230	Fine sand and clay.
230	275	Fine sand, clay and gravel.
275	309	Fine sand, and gravel.
309	340	Black sand and gravel.
340	390	Consolidated sand.
390	425	Sand and gravel.
425	450	Sand, gravel and some clay.
450	480	Sand.
480	515	Cemented sand.
515	540	Sand and gravel.
540	575	Sand, gravel and clay.
575	605	Consolidated sand.
605	640	Sand and gravel.
640	685	Sand, gravel and some clay.
685	715	Sand and gravel.
715	760	Sand.
760	795	Sand and gravel.
795	813	Consolidated sand.
813	845	Sand and gravel.
845	881	Cemented sand and rock.
881	910	Coarse sand, gravel, and clay.
910	964	Coarse sand, rocks.
964	1,030	Gravel, coarse sand.
1030	1,090	Gravel, sand, rocks.
1090	1,120	Granite, mostly crushed.

Total Depth of Boring 1120 Feet

Total Depth of Completed Well 1100 Feet

Well Owner

Name [redacted]

Mailing Address [redacted]

City Yucaipa State CA Zip 92399

Well Location

Address 32419 Avenue E

City Yucaipa County San Bernardino

Latitude Deg. Min. Sec. N Longitude Deg. Min. Sec. W

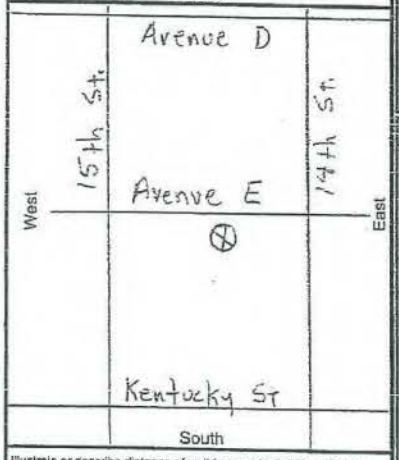
Datum Decimal Lat. Decimal Long.

APN Book 0301 Page 132 Parcel 85

Township 2 S Range 2 W Section 4

Location Sketch

(Sketch must be drawn by hand after form is printed.)



Illustrate or describe distance of well from roads, buildings, fences, rivers, etc. and attach a map. Use additional paper if necessary. Please be accurate and complete.

Activity

◉ New Well
○ Modification/Repair
○ Deepen
○ Other
○ Destroy
Describe procedures and materials under "GEOLOGIC LOG"

Planned Uses

◉ Water Supply
☑ Domestic ☑ Public
☐ Irrigation ☐ Industrial
○ Cathodic Protection
○ Dewatering
○ Heat Exchange
○ Injection
○ Monitoring
○ Remediation
○ Sparging
○ Test Well
○ Vapor Extraction
○ Other

Water Level and Yield of Completed Well

Depth to first water 320 (Feet below surface)

Depth to Static Water Level 320 (Feet) Date Measured 01/29/2007

Estimated Yield * 1,506 (GPM) Test Type Constant Rate

Test Length 16.0 (Hours) Total Drawdown 66 (Feet)

*May not be representative of a well's long term yield.

Casings

Depth from Surface Feet	to Feet	Borehole Diameter (Inches)	Type	Material	Wall Thickness (Inches)	Outside Diameter (Inches)	Screen Type	Slot Size if Any (Inches)
0	50	42	Conductor	Low Carbon Steel	.3125	30		
0	410	26	Blank	Low Carbon Steel	.3125	16		
410	1,090	26	Screen	Low Carbon Steel	.3125	16	Louver	0.050
1,090	1,100	26	Blank	Low Carbon Steel	.3125	16		

Annular Material

Depth from Surface Feet	to Feet	Fill	Description
0	50	Cement	10.5 sack
0	300	Cement	10.5 sack
300	1,100	Filter Pack	Tacna 8x20

Attachments

☐ Geologic Log
☐ Well Construction Diagram
☐ Geophysical Log(s)
☐ Soil/Water Chemical Analyses
☐ Other

Attach additional information, if it exists.

Certification Statement

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief

Name Layne Christensen Company (Person, Firm or Corporation)

11001 Etiwanda Avenue (Address) Fontana (City) CA (State) 92337 (Zip)

Signed [signature] (C-57 Licensed Water Well Contractor) 5-8-2007 (Date Signed) 510011 (C-57 License Number)

DWR 188 REV. 1/2006

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

23191

WELL No. 14

San Bernardino County Department of Public Health
DIVISION OF ENVIRONMENTAL HEALTH SERVICES
385 North Arrowhead Avenue - 2nd Floor, San Bernardino, CA 92415-0160

WP 3371
SR 15216

DO NOT FILL IN
Permit Number 2006111150
Expiration 05-29-07
SN

WELL PERMIT
(Please Print)

K Reeds Prestige
Prestige D.K ~~if to/op Dif~~
Owner's Well No. 14

DO NOT FILL IN
Date 11-29-06
Amount $ 493.00
Receipt Number 59738
Paid by LAYNE CHRISTENSEN

1. OWNER: Name [redacted]
Mailing Address [redacted]
City Yucaipa Zip 92399
Site Address 32419 Ave E
City Yucaipa Zip 92399
Telephone Number (909) 790-1901

2. WELL DRILLER: Layne Christensen Company (Business Name)
11-27-2006 (Start Date) 2-27-2006 (Completion Date)

3. WELL USE (check):
☐ Agricultural ☐ Horizontal ☐ Test
☐ Cathodic ☐ Monitoring/Observation ☐ Dairy
☐ Ind/Domestic ☒ Community/PWS/City ☐ Other

4. TYPE OF WORK (check):
☒ New ☐ Reconstruction ☐ Destruction

Items 6 through 9 to be estimated for new wells, exact for all other wells

5. ANNULAR SEAL: Seal Depth 50 ft.
Furnished by: ☐ Owner ☒ Contractor
☐ Driven Conductor Dia. 30 in., Wall (Gage) .375
☐ Sealing Material 10.5sack, Thickness 6 in.

6. DEPTH OF WELL (feet):
Proposed 1100 Existing
DIAMETER OF BORE (in.): 26

7. CASING INSTALLED:
☒ Steel ☐ Plastic ☐ Other

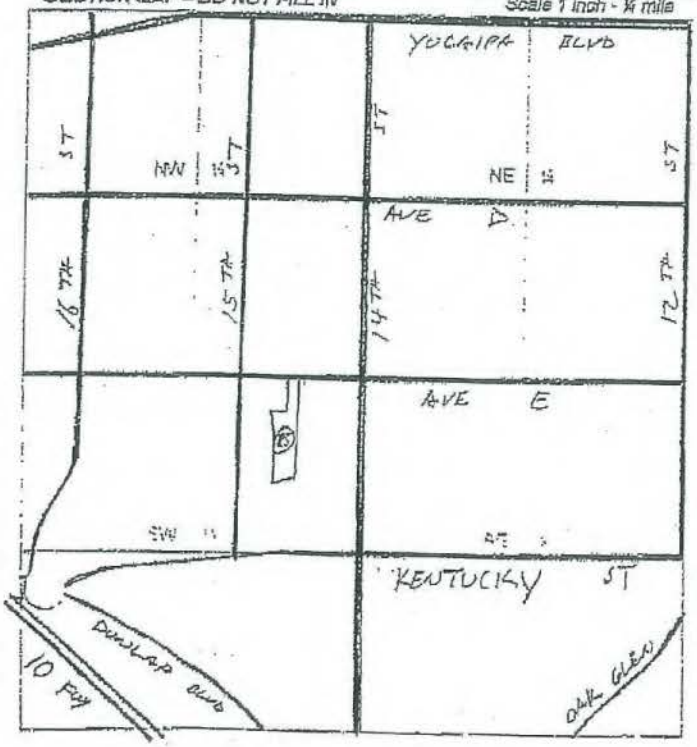
From (ft.)	To (ft.)	Dia. (in.)	Wall (Gage)
0	400	16	.312

Gravel Pack: ☒ Yes ☐ No
From 300 to 1100 ft.

8. PERFORATIONS (if applicable):
From 400 to 1100 ft.

9. SEALED ZONES (if applicable):
From to ft.

SECTION MAP – DO NOT FILL IN Scale 1 inch = ¼ mile



10. LOCATION INFORMATION
(a) Assessor's Parcel No. 0301132850000
(b) Consulting Firm & Project Number:
(c) Latitude and Longitude (If Known)
Lat: ° ' " N/S
Long: ° ' " E/W
(d) Township:
Tier 2 N/S Range 2 E/W Section 4
Map Info 76th 649 C4

DO NOT FILL IN
Seal
Cap
Check Valve
Electricals
Slab
Tag
Building & Safety Notified

[redacted]

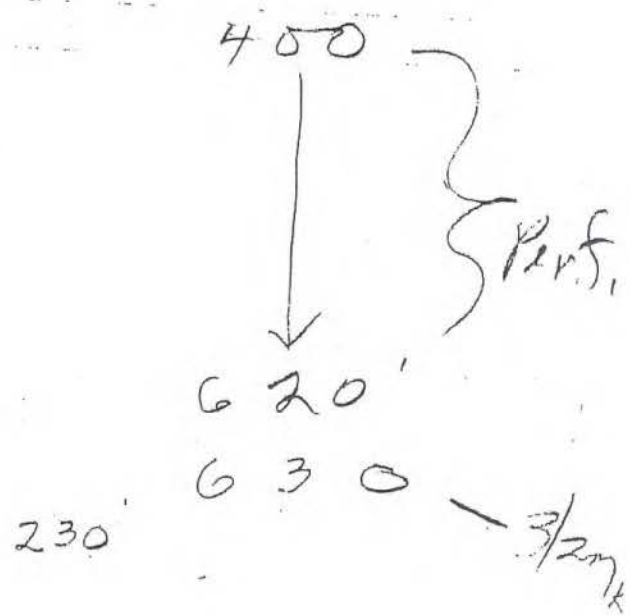
Fly	22'	235-240 very rough	
DC	27' 10"	258-270 rough	
DC	21' 11"		
	71' 9"		
DC	27' 3"	10. 350' 0"	24 630' 1"
	44' 0"	21' 7"	21' ±
DC	17' 1"	11. 371' 7"	651' 3"
	116' 1"	21' 7"	21' 6"
DC	17' 3"	12. 393' 2"	25 673' 2"
	133' 4"	21' 8"	
D	21' 7"	13. 414' 10"	oil #2
1.	154' 11"	21' 7"	
	21' 8"	14. 436' 5"	static 273
2	176' 7"	21' 7"	
	21' 7"	15. 458' 0"	
3.	198' 2"	21' 8"	
	21' 7"	16. 479' 8"	
4.	219' 7"	21' 8"	
	21' 7"	17. 501' 4"	
5.	241' 4"	21' 7"	
	22' 5"	18. 522' 11"	
6.	263' 7"	21' 6"	
	21' 7"	19. 544' 5"	
7.	285' 4"	21' 5"	
	21' 6"	20. 565' 10"	
8.	306' 10"	21' 7"	
	21' 7"	21. 586' 5"	
9	328' 5"	21' 7"	
	21' 7"	22. 608' 0"	
10	350' 0	22' 1"	

[redacted]

0-50	conductor
50'-80'	coarse sand and fine gravel
80'-109'	sand no clays.
109'-115'	gray clay (loose) & fine gravel
115'-125	brown clay (loose) coarse sand 70% fine gvl
125'-132'	sticky brown clay & sand
132-135	sand (coarse) very loose clay 4'
135-148	sticky brown clay sand & gravel (rough drilling
148-173	sticky brown clay some sand & fine gravel, firm spots
173-175	sand & little clay
175-180	sand & gravel with clay streaks.
180-183	sticky brown clay & coarse sand.
183-190	very sticky clay & fine sand & till some gravel.
190-192	loose clays fine & coarse sand.
192-200	very sticky brown clay & sand some small gravel
200-215	coarse sand & loose clay some gravel.
215-225	sticky brown clay & sand & gravel.
225-239	coarse sand & loose clay
239-250	sticky clay sand & gravel (fragmented)
250-258	coarse sand & loose clay
258-280	coarse sand & fine gravel little clay
280-283	coarse sand & gravel increase in sticky clay.
283-308	coarse sand & gravel very loose clay.
308-338	sticky clay & coarse sand
338-341	very sticky clay some sand & gravel.
341-346	sticky clay & coarse sand.
346-353	sand & small fragmented gravel, little clay
353-370	coarse sand very uniform & clay. some gravel.
370-393	increase in clay very sticky
392-400	very sticky clay some sand & gravel (40%) till

Redlands Regular Meeting of 01-18-2022

[illegible]-445	sticky loose clay sand & gravel
445-470	loose clay & coarse sand (80%)
470-473	sticky clay sand & gravel
473-481	coarse sand & gravel loose clay (water)
481-485	very tight sticky clay & coarse sand.
485-494	clay & coarse sand. (Clay is loose & sticky)
494-545	coarse sand fragmented gravel some clay
545-547	coarse sand gravel (jagged) sticky clay
547-560	coarse sand gravel little loose clay. a lot of very jagged white quartz
560-566	coarse sand & gravel little clay very rough drilling very tight
566-573	sticky clay coarse sand and fragmented gravel.
573-583	loose sticky clay coarse sand & gravel.
583-587	coarse sand some gravel (fine) loose sticky clay
587-590	coarse sand spotty gravels tight sticky clay
590-608	coarse uniform sand and loose clay (20%) fine fragmented gravels
608-648	coarse uniform sand sticky clay little gravel
648-673	coarse sand uniform little of no clay very firm.



Redlands Regular Meeting of 01-18-2022

TLX: 62933889
TWX: 510-601-5891

Water Well Redevelopers, Inc.

1365-B DYNAMICS STREET
ANAHEIM, CALIFORNIA 92806

(714) 996-1462
(714) 779-2425

VIDEOLOG FIELD REPORT

OWNER [redacted]
[redacted]
Los Angeles, Ca. 90004

WELL LOCATION 1/2 mile West of Oak Glen Rd., on Davies Ranch Rd., San Bernardino, Ca.

WELL NO. 6 TECHNICIAN BC UNIT NO. 1 DATE 4-1-88

WELL HISTORY

Casing: 6" - - 0' to 142'+ Perforations: 25' to 142'+

(Per VIDEOLOG)

Drilled 1979 By Jack Jones Type C-Tool Perf. Type Drilled Holes

Pump: Type DWT Column 4" x 130' Bowls 4" x 8' Depth of Intake 138'

Remarks

VIDEOLOG INFORMATION

SWL 56' TWD 142' Water Visibility GOOD Date 4-1-88

Camera COLOR Tape Format VHS Speed SP Make TDK

Videolog X Revideo ____ Reruns ____ PC Log to Dickinson / Hackers Pump Tape to Dickinson

REMARKS

No camera centering device was used during survey, due to (minimum size) 6" casing diameter. No drag was noted while descending.

8" steel casing is visible from 0' to 5', where a straight reduction to 6" PVC casing exists.

The highly reflective white PVC produces glare and requires viewing from behind the saturated ring of light in front of the camera.

Possible roots entering through perforations at 85'.

Organic material can be seen entering through perforations, when disturbed by the camera, see 74', 86' and 100' to 200'. (Also note excessive material being drawn into well bore while camera more rapidly ascends).

Dark stains can be seen on casing adjacent to where bowls setting 130' to 135'.

The casing appears clean and drilled perforations open throughout the survey (i.e., 5' to 141

Casing, reduction, joints and perforations all appear clean and in normal condition.

The entrance of organics along with specific capacity loss would indicate a coagulation of the surrounding formation.

well #2 YVWD #2.

DUPLICATE
Retain this copy

WATER WELL DRILLERS REPORT

(Sections 7079, 7080, 7081, 7082, Water Code)

THE RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES

Do Not Fill In

No 32912

State Well No.

Other Well No.

2S/2W-11B1

(1) OWNER: Valley

Name [redacted]

Addres

(2) LOCATION OF WELL:

County San Bernardino Owner's number, if any 2

Township, Range, and Section NW ¼ of NE ¼ T 2S R 2W Sec. 11

Distance from cities, roads, railroads, etc. Ave. F between 5th & 6th Streets- Yucaipa

(3) TYPE OF WORK *(check):*

New Well ☒ Deepening ☐ Reconditioning ☐ Destroying ☐

If destruction, describe material and procedure in Item 11.

(4) PROPOSED USE *(check):*

Domestic ☒ Industrial ☒ Municipal ☒
Irrigation ☐ Test Well ☐ Other ☐

(5) EQUIPMENT:

Rotary ☐
Cable ☒
Other ☐

(6) CASING INSTALLED:

STEEL: OTHER:

SINGLE ☒ DOUBLE ☐

From ft.	To ft.	Diam.	Gage or Wall	Diameter of Bore	From ft.	To ft.
0	614	16"	¼"			
	638	16"	5/16"			

If gravel packed

Size of shoe or well ring: 16x12x1" Bit Steel Shoe Swivel:

Describe joint All joints butt weld

(7) PERFORATIONS OR SCREEN:

Type of perforation or name of screen Mills

From ft.	To ft.	Perf. per row	Rows per ft.	Size in. x in.
350	563	8	1	2½ x 7/16"
613	625	8	1	2½ x 7/16"

(8) CONSTRUCTION:

Was a surface sanitary seal provided? Yes ☒ No ☐ To what depth 40 ft.

Were any strata sealed against pollution? Yes ☐ No ☒ If yes, note depth of strata

From ft. to ft.

From ft. to ft.

Method of sealing Concrete grout installed between casing and formation

(9) WATER LEVELS:

Depth at which water was first found, if known 308 ft.

Standing level before perforating, if known 308 ft.

Standing level after perforating and developing 308 ft.

(10) WELL TESTS: Will be made by Owner

Pump test made? Yes ☐ No ☐ If yes, by whom?

gal./min. with ft. drawdown after hrs.

Temperature of water Was a chemical analysis made? Yes ☐ No ☐

Was electric log made of well? Yes ☐ No ☐ If yes, attach copy

(11) WELL LOG:

Total depth 638 ft. Depth of completed well 638 ft.

Formation: *Describe by color, character, size of material, and structure*

ft. to	ft.	
0	128	Brown clay with sand and gravel
128	190	Loose gravel, some brown clay
190	284	Brown clay, gravel and boulders
284	386	Gravel and boulders, some brown clay
386	414	Light brown clay with gravel embedded
414	430	Loose rough gravel
430	475	Hard tight gravel with trace of gray clay
475	512	Brown and gray clay with gravel embedded
512	563	Rough gravel some g clay
563	613	Tough brown clay
613	619	Gravel, some brown clay
619	638	Tough brown clay

Bob Thompson

Work started Jan. 14 67, Completed Mar. 21, 1967

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME KIRKLAND WELL SERVICE
(Person, firm, or corporation) (Typed or printed)

Address 32291 Dunlap Blvd.
Yucaipa, Calif.

[SIGNED] K. Kirkland
(Well Driller)

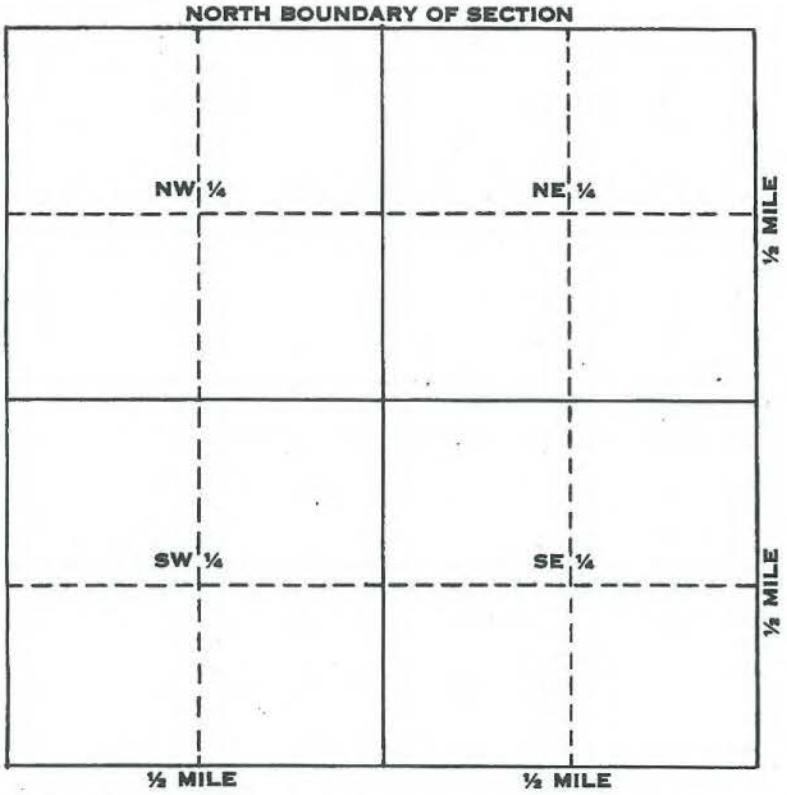
License No. 168847 Dated Mar. 22, 19 67

SKETCH LOCATION OF WELL ON REVERSE SIDE

DWR 188 (REV. 9-65)

56291-950 10-65 50M TRIP ① △ OSP

WELL LOCATION SKETCH

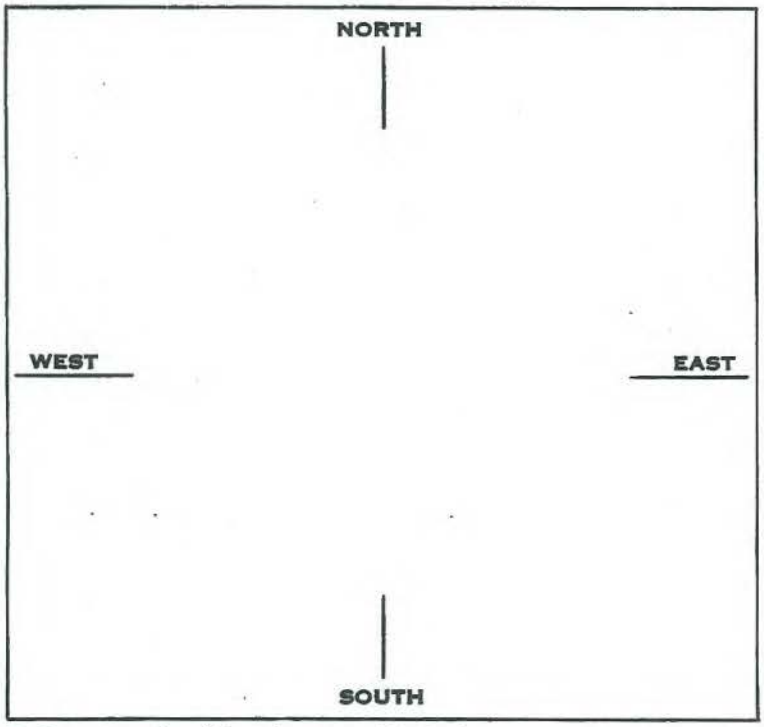


Township 2S N/S

Range 2W E

Section No. 11

A. Location of well in sectionized areas.
Sketch roads, railroads, streams, or other features as necessary.



B. Location of well in areas not sectionized.
Sketch roads, railroads, streams, or other features as necessary.
Indicate distances.

#2

YUCAIPA WATER COMPANY NO. 1
LOG OF WELL NO. 2
S.R. No. 36-01850

LOCATION: Avenue F, between Fifth and Sixth Streets
NW¼ of NE¼, Sect. 11, T2S, R2W, SBB&M

DRILLED BY: Unknown YEAR: 1921

Depth From	Depth To	Material
0	155'	Clay & Gravel
155'	172'	Gravel No cuts
172'	202'	Clay & Gravel
202'	240'	Gravel
240'	260'	Boulders 512 cuts between 225' & 280'
260'	289'	Gravel
289'	300'	Clay & Gravel
300'	315'	Gravel 152 cuts
315'	360'	Clay & Gravel
360'	378'	Gravel 144 cuts
378'	398'	Clay & Gravel
398'	464'	Gravel 320 cuts between 398' & 438' top of Starter

Cuts are about 1/2" wide x 4" long, and are made 8 per foot.

Standard Rig

Note: It [illegible] Spring of 1992 and [illegible]

15/2W-30N1

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC HEALTH

No. 5

WELL DATA

(1) Place and Owner [redacted]

(2) Source of Information: Data on File

Collected by [redacted] Date: 15 June 62

(3) Number or Name	#5
Date drilled	Jan. 24, 1946
(4) Location: Neighborhood	Residential
Size of lot	
Distance to: Sewer	No sewers in area
Sewage disposal	Cesspool or septic tank
Abandoned well	
Nearest property line	
(5) Housing: Type	Metal
Condition	Good
Pit depth *(if any)*	None
Floor *(material)*	Concrete
Drainage	Yes
(6) Well Depth	508'
(7) Casing: Depth	465'
Diameter	16" to 465' depth
Kind	Steel-10 ga Double
Height above floor	4"
Distance to highest perforations	
Surface sealed *(yes or no)*	Yes
Gravel pack *(yes or no)*	No
Second casing depth	
Second casing diameter	
Annular seal *(depth)*	
(8) Impervious Strata: Thickness	
Penetrated: Depth to	
(9) Water Levels: Surface	251.9
Depth to: Static	
When Pumping	
(10) Pump: Make	Layne & Bowler
Type	D.W. Turbine
Capacity, g.p.m.	750'
Lubrication	Oil
Power	N Gas
Auxiliary power	No
Control	
Discharge location	Above Ground
Discharge to	Mains
(11) Frequency of Use	Cont.
(12) Flood Hazard	No
(13) Remarks and Defects (Use other side if necessary)	

(14) Show well log on other side.

COPY

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC HEALTH

(REV. 1-1-51)
FORM SE-1402

1S/2W-36N1

Well 5
Rec. #36 01853

WELL RECORD

[redacted]

Company _____

Location Cedar Avenue between 3rd & 4th Streets Elev 2560'

SW 1/4 SW 1/4 Township 1S Range 2W Section 36

PIT

Date drilled January 1946 By Eula Wells Roberts
Depth 508' Diameter _____ Packed _____

CASING

Diameter 16" Length 465' Gauge 10 ga. - double
" _____ " _____ " _____
Perforated interval _____

COLUMN

Diameter 10" Length 310' Gauge _____
" 8" " 40' " _____

Tube diameter _____ Shaft diameter _____

BOWLS

Date installed March 26, 1963 By Turley Pump Co.
Make Peerless Model 10 MA Serial no. R58283
Size 10" Stages 14 Length _____ Suction 10'

DESIGN PERFORMANCE

GPM	700	RPM	1760	TDH	550	HP	120
GPM	675	RPM	1760	TDH	555	HP	
GPM	600	RPM	1760	TDH	594	HP	

ENGINE

Date installed February 1958 By Wilson Engine Service
Type Nat. Gas Make Climax Model K67 Serial no. 53576
Cu. in. 1616 B & S 7 x 7" HP 125 RPM 880

GEAR

Date installed February 1958 By Ray Roberts
Make U.S. Model 1.2 Serial no. 1138599 HP 150
Shaft Spicer WL 71 Universals _____

Notes: March 1963 - All new shaft bearings, strainer spiders, head shaft & tension section.

SBVMWD FORM JK-10C

1S/2W-36N1

REDEVELOPING
VIDEOLOGGING
PHOTOLOGGING

Water Well Redevelopers, Inc.

5583 PEBBLE BEACH LANE
YORBA LINDA, CALIFORNIA 92686

TELEPHONE
(714) 996-1462
(714) 779-2425



VIDEOLOG FIELD REPORT

OWNER [redacted]

WELL LOCATION Approximately
34586 Cedar St.
Yucaipa, Calif.

WELL NO. 5

DATE OF VIDEOLOG 12-5-83 BY B.J.C.

WELL HISTORY

Casing: 16" -- 0' to 508'

Perforations: 190' to 199', 220' to 227', 236' to 245', 254' to 355', 366' to 400'& 422' to 470'.

Drilled 1946 By Flula Wells

Type C-Tool Perf's Mills Knife.

Depth of Pump Setting: Column 350' Bowls 10' Suction 10'

Remarks All out for service.

'RING SURVEY

Standing Water Level 174'

Depths Televised 0' to Present Bottom.

Total Well Depth 490'

Water Conditions Good

VIDEO

VTR Beta SETTING 1 TAPE: On File ____ Customer ____ Dealer X None ____

POLAROID SUPPLEMENTS None.

REMARKS

Camera centering guide set at 14"O.D. during survey. No drag noted while camera descended.

Sample mills knife cuts are visible at 2'.

Casing and perforations appear clean and in normal condition from 174' (static) to 400'. Some perforation plugging and or restriction can be seen from 400'± to 470', end of casing.

Open hole from 470' to 490'(bottom).

Perforations on joint 328' and 433'.

Lost airline visible at 475' and 481'.

Originators of SONAR-JET®
"WELL CLEANING WITH SOUND"

Downhole Inspection
"TELEVISION AND STEREO"

San Bernardino Valley Municipal Water District
1350 SOUTH "E" STREET - P. O. BOX 5906 - SAN BERNARDINO, CALIFORNIA 92412 - (714) 824-2200
(714) 889-0433

RECEIVED

September 9, 1976

[redacted]

Dear Sir:

On behalf of the SBVMWD I would like to thank you for your assistance this summer with our vertical control project.

All of our surveys were run to determine the mean sea elevation of the measuring point for each well. All of our work was done within third order limits.

The following are the wells surveyed and their elevation:

Well No. 4	2346.36 ft.
Well No. 5	2561.98 ft.
Well No. 7	2711.00 ft.
Well No. 8	2364.18 ft.
Well No. 11	2387.92 ft.
Well No. 12	2379.15 ft.
Well No. 13	3180.95 ft.
Well No. 14	3341.77 ft.
Well No. 24	2434.71 ft.
Well No. 33	3127.80 ft.

Thank you again.

Sincerely,

Robert Martin
Water Resources Aide

RM:as

Directors and Officers
FRED OLDFIELD, JR. LE ROY HOLMES WILLIAM R. LEONARD LLOYD D. YOUNG [illegible] JACK A. [illegible]

1S/2W-36R1 No. 7

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC HEALTH

WELL DATA

(1) Place and Owner [redacted]

(2) Source of Information Data on File

Collected by [redacted] Date 15 June 62

(3) Number or Name	#7
Date drilled	October 18, 1950
(4) Location: Neighborhood	
Size of lot	
Distance to: Sewer	No sewer in area
Sewage disposal	Cesspool or septic tank
Abandoned well	
Nearest property line	
(5) Housing: Type	
Condition	
Pit depth *(if any)*	
Floor *(material)*	
Drainage	
(6) Well Depth	695'
(7) Casing: Depth	665'
Diameter	14"
Kind	1/4" Steel
Height above floor	4"
Distance to highest perforations	
Surface sealed *(yes or no)*	Yes
Gravel pack *(yes or no)*	Yes
Second casing depth	
Second casing diameter	
Annular seal *(depth)*	
(8) Impervious Strata Penetrated: Thickness	
Depth to	
(9) Water Levels: Depth to Surface	383.7
Static	
When Pumping	
(10) Pump: Make	Layne & Bowler
Type	Turbine-L.S.
Capacity, g.p.m.	450
Lubrication	Oil
Power	N Gas
Auxiliary power	No
Control	
Discharge location	Above ground
Discharge to	Mains
(11) Frequency of Use	Cont.
(12) Flood Hazard	No
(13) Remarks and Defects (Use other side if necessary)	

(14) Show well log on other side.

COPY

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC HEALTH

18765 3-50 2M ① SPO

(REV. 1-1-51)
FORM SE-1402

[redacted]

1S/2W-36J #7

LOG OF WELL NO. 7
S.R. No. 36-01855

LOCATION: Cedar and Adams Streets
SE¼ of SE¼, Sect. 36, T1S, R2W, SBB&M

DRILLED BY: E. J. Brockman, Drilling Contractor DATE: Oct. 18, 1950
R. 1, Box 150, Colton, Calif.

Depth From	Depth To	Material
0	18'	Decomposed granite boulders
18'	120'	Sand and rock
120'	184'	Sand and clay with some rock
184'	195'	Clay and rock
195'	223'	Red clay
223'	298'	Sandy clay
298'	315'	Sand and gravel
315'	328'	Sandy clay
328'	340'	Sand and gravel
340'	395'	Sandy clay
395'	415'	Rock and clay
415'	460'	Sandy clay
460'	475'	Rock and clay
475'	514'	Sand
514'	520'	Sandy clay
520'	530'	Cemented gravel
530'	540'	Sandy clay
540'	545'	Sand
545'	552'	Granite ledge
552'	568'	Sandy clay
568'	580'	Sand
580'	584'	Sandy clay
584'	589'	Sand
589'	594'	Clay and rock
594'	605'	Sandy clay
605'	625'	Cemented gravel
625'	635'	Clay and rock
635'	660'	Soft sand clay
660'	688'	Clay and rock
688'	695'	Rock

Hole was reamed to 20" diameter to a depth of 665' and 14" x ¼" wall casing installed to 665'.

1S/2W-36R1

Well 7

WELL RECORD

[redacted]

Company _____

Location Cedar & Adams # 36 01867

SE 1/4 SE 1/4 Township 1 S Range 2 W Section 36

PIT

Date drilled Oct. 1950 By E.S. Brockman

Depth 695' Diameter 30" Packed 665'

CASING

Diameter 14 Length 665 Gauge 1/4"

" " "

Perforated interval _____

COLUMN

Diameter 6 Length 500 Gauge STD

" " "

Tube diameter 2½ Shaft diameter 1½

BOWLS

Date installed 3-25-57 By Roberts

Make Layne & Bowler Model ELL - M Serial no. _____

Size 12 Stages 12 Length _____ Suction 10' of 6"

DESIGN PERFORMANCE

3/25/57

GPM	450	RPM	1650	TDH	423	HP	79
GPM		RPM		TDH		HP	
GPM		RPM		TDH		HP	

ENGINE

Date installed _____ By _____

Type _____ Make Waukesha Model Wak R-25A Serial no. 1018788

Cu. in. 1197 B & S 6 1/4 X 6½ HP 96 RPM 900

GEAR

Date installed _____ By _____

Make US Model 1.2 Serial no. 1101571 HP 110

Shaft Delte WI. 61 Universals _____

Notes: 1 CK 189 S Gas Engine Starter - Serial - 1016352

SBVMWD FORM JK-10C

15/2W-36R1

695' 14"
DEPTH DIAM. DRILLED

USE

LOG AVAILABLE Yes

LOCATION 80' n/o Cedar, 40' w/o Adams

San Bernardino Valley Water Conservation District
REDLANDS, CALIFORNIA

WELL RECORDS

WELL NO.

LOCATION NO. Yuc. W. Co. No. 1.47
36-01855

OWNER [redacted] - Well No. 20 (old) (new) No. 7

EQUIPMENT

DESCRIPTION OF M. P. Top of casing

ELEV. M. P.

ELEV. G. S. 2710

LEVELS BY

DATE	OBSERVER	DEPTH TO WATER	ELEVATION OF WATER	REMARKS
1950				
11-03	Hicks	316.7	2393.3	To top casing
1951				
3-03	Serber	317.1	2392.9	
4-04	Hicks	317.2	2392.8	To top casing
5-15	Serber	319.7	2390.3	
1952				
4-11	Hicks	325.7	2384.3	New bench plug-outlet pipe
4-11	Edison Co.	325	2385	1.65' above pump base
1953				
3-17	Serber	328.6	2381.4	
1955				
3-28	USGS	334.8	2375.2	
8-9	Edison Co.	367.2	2342.8	
8-9	"	497.7	2212.3	Pumping 434 GPM
9-17	USGS	480±	2230	
1957				
4-2	Dibble	346.6	2363.4	2" pipe East side
1958				
4-28	Foster	466.6	2243.4	Pumping
1960				
3-9	Hanstad	383.7	2326.3	Idle
1961				
4-24	Stafford	440.6	2269.4	Pumping
1963				
3-20	SBCFCD	383.7	2322.3	
1967			2328	

[redacted]

25/2W-20 1 #8

LOG OF WELL NO. 8
S.R. No. 36-01856

NOT #8

LOCATION: Hill Ranch
NW¼ of SW¼, sect. 25, T1S, R2W, SBB&M
DRILLED BY: E. J. Brockman YEAR: March 3, 1951 completed
R. 1, Box 150
Colton, Calif.

Depth From	Depth To	Material
0	4'	Top Soil
4'	50'	Sand and rock
50'	85'	Sandy clay
85'	105'	Sand and small gravel
105'	178'	Sandy clay
178'	222'	Sand and coarse gravel
222'	260'	Hard clay
260'	274'	Sand and small gravel
274'	300'	Sandy clay
300'	306'	Sand
306'	340'	Clay and rock
340'	354'	Rock and Sand
354'	415'	Sandy clay
415'	425'	Sand
425'	478'	Sand with streaks of clay
478'	506'	Hard clay

Hole was reamed to 16" to 363' and 10" x 3/16" casing installed. 10" casing was perforated with 3/16" x 4" slots 4 to the round every foot.

Hole was reamed to 10" from 363' to 506' and 6" x 1/8" casing installed. 6" casing was perforated all the way with 3/16" x 4" slots 4 to the round, one round every foot.

Hole was gravel packed with 3/8" gravel all the way.

Static water level 115'

Well on the pump test pumped the following capacities:

from 143' - 162 GPM
" 166' - 279 GPM
" 178' - 342 GPM

Rotary Rig

2S/2W-2P1 Well 8

WELL RECORD

Rec. #36 01997

[redacted]

Company

Location 8th Street South of Washington Drive Elevation = 2360'

NE 1/4 NE 1/4 Township 2 S Range 2 W Section 3

PIT

Date drilled 1959 By

Depth 750' Diameter Packed 500'

CASING

Diameter 16" Length 500' Gauge 10 ga.

" " "

Perforated interval

COLUMN

Diameter 8" Length 400 Gauge STD

" " "

Tube diameter Shaft diameter

BOWLS

Date installed March 18, 1963 By Turley Pump Company

Make Model 10 LA Serial no. R 58225

Size 10" Stages 11 Length Suction 10'

DESIGN PERFORMANCE

GPM 450	RPM 1760	TDH 400	HP 55
GPM	RPM	TDH	HP
GPM	RPM	TDH	HP

ENGINE

Date installed 3-63 (from #3 well) By

Type Elect. Make U.S. Model HU Serial no. 1251837

Cu. in. B & S HP 60 RPM 1800

GEAR

Date installed By

Make Model Serial no. HP

Shaft Universals

Notes: Pump test July 25, 1966

Pump Head Jacuzzi - Pump as shown

[redacted]

LOG OF WILDWOOD CANYON WELL
S.R. No. 36-01864

2S/1W-8E1

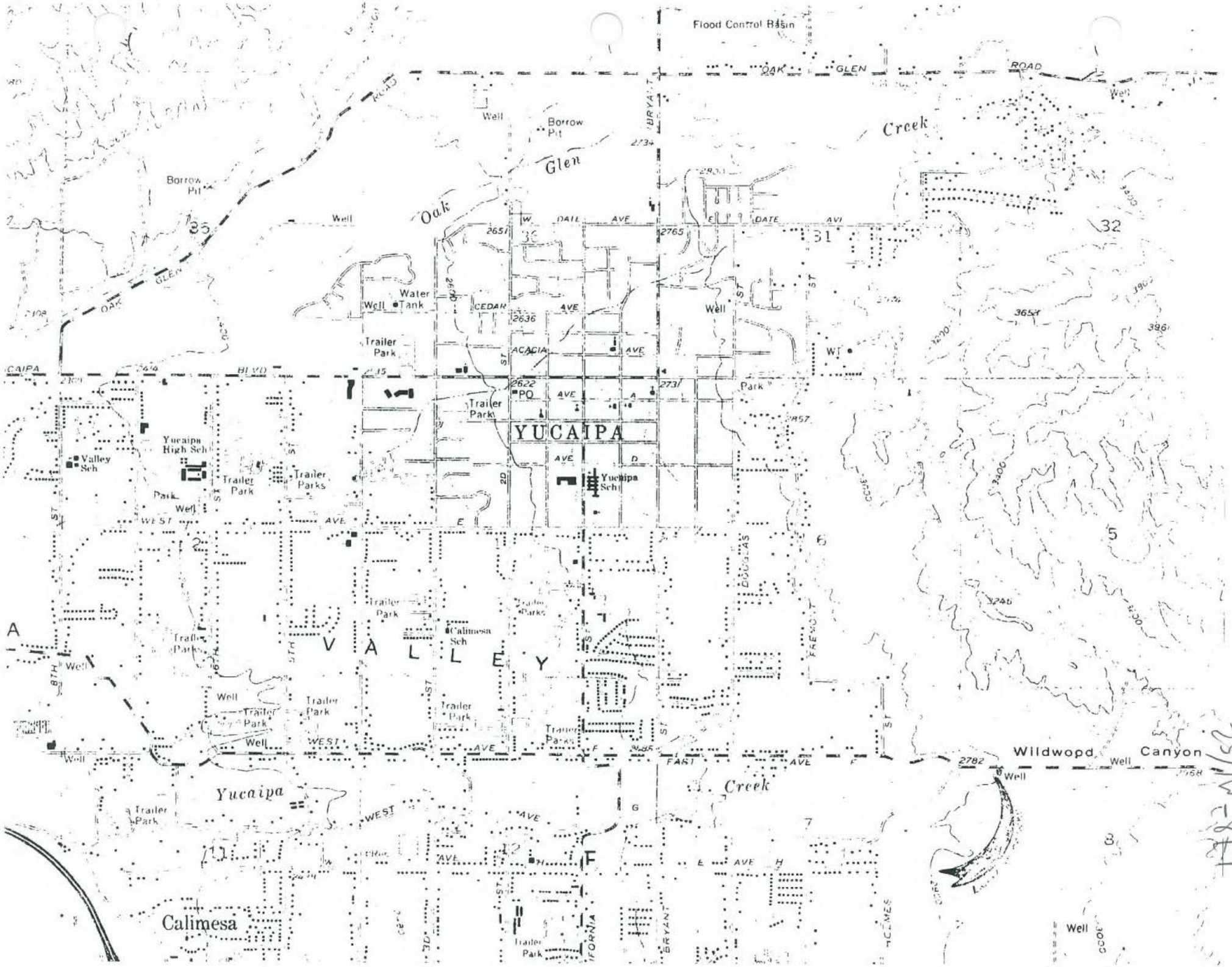
Well -15

LOCATION: Wildwood Canyon
NW¼ of NW¼, Sect. 8, T2S, R1W, SBB&M

DRILLED BY: Unknown YEAR: Unknown

Depth From	Depth To	Material
0	85'	Gravel size of a pea to 6" mixed with sand & some clay to cement slightly not enough water to attract attention above 80'.
85'	90'	Sand & clay mixed not cemented but loose.
90'	129'	Gravel size of a pea to 6" with sand and no clay.
129'	145'	Decomposed granite or soft schist becoming harder as well went down.

All 100 perforations between 50' and 129' below surface perforation 8" to 18" long and average width 5/8 of an inch.


Flood Control Basin
OAK GLEN ROAD
Well
Borrow Pit
Glen Oak Creek
BRYANT ST
W DATE AVE
E DATE AVE
CEDAR AVE
ACACIA AVE
CAIPA BLVD
Water Well
Tank
Trailer Park
PO
YUCAIPA
Yucaipa High Sch
Valley Sch
Yucaipa Sch
Park Well
WEST AVE
EAST AVE
Trailer Parks
Calimesa Sch
DOUGLAS ST
FREMONT ST
Wildwood Canyon
Creek
Yucaipa
Calimesa
Trailer Park
Well
2651
2765
2636
2622
2731
3654
3240
2782
31
32
5
6
7
8
11
12

2S/1W-8E1

Well Wildwood #15

WELL RECORD

[redacted]

Company _____

Location Wildwood Canyon 36 01864

NW 1/4 NW 1/4 Township 2 S Range 1 W Section 8

PIT

Date drilled Unknown By Unknown

Depth 145 Diameter _____ Packed _____

CASING

Diameter 12 Length 145 Gauge 1/4

" _____ " _____ " _____

Perforated interval 50 - 129

COLUMN

Diameter 5 Length 120 Gauge STD

" _____ " _____ " _____

Tube diameter 1½ Shaft diameter 1

BOWLS

Date installed _____ By _____

Make Wintroath Model 8-75 Serial no. _____

Size 8 Stages 5 Length _____ Suction 10 ft.

DESIGN PERFORMANCE

GPM _____ RPM _____ TDH _____ HP _____

GPM _____ RPM _____ TDH _____ HP _____

GPM _____ RPM _____ TDH _____ HP _____

ENGINE

Date installed _____ By _____

Type Elec. Make GE Model 12 F 56715 Serial no. XCS 6721749

Cu. in. _____ B & S _____ HP 7½ RPM _____

GEAR

Date installed _____ By _____

Make _____ Model _____ Serial no. _____ HP _____

Shaft _____ Universals _____

Notes: _____

SBVMWD FORM JK-10C

well 15-1
Test well

TRIPLICATE
Owner's Copy

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES

WATER WELL DRILLERS REPORT

Do not fill in
No. 182243

e of Intent No.
al Permit No. or Date 07208924

State Well No.
Other Well No.

(1) OWNER: Name [redacted]
Address [redacted]
City [redacted] Zip [redacted]

(2) LOCATION OF WELL (See instructions):
County San Bernardino Owner's Well Number
Well address if different from above Wildwood Canyon
Township 2 S Range 1 W Section 8
Distance from cities, roads, railroads, fences, etc.
Assessors Parcel #322-212-05

(3) TYPE OF WORK:
New Well ☒ Deepening ☐
Reconstruction ☐
Reconditioning ☐
Horizontal Well ☐
Destruction ☐ (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:
Domestic ☐
Irrigation ☐
Industrial ☐
Test Well ☒
Stock ☐
Municipal ☐
Other ☐

WELL LOCATION SKETCH

(5) EQUIPMENT:
Rotary ☒ Reverse ☐
Cable ☐ Air ☐
Other ☐ Bucket ☐

(6) GRAVEL PACK:
Yes ☒ No ☐ Size Pea Gravel
Diameter of bore 12 ¼
Packed from 0 to 315 ft.

(7) CASING INSTALLED:
Steel ☒ Plastic ☐ Concrete ☐

From ft.	To ft.	Dia. in.	Gage or Wall
0	315	6	1/8

(8) PERFORATIONS:
Type of perforation or size of screen

From ft.	To ft.	Slot size
80	295	.090

(9) WELL SEAL:
Was surface sanitary seal provided? Yes ☐ No ☒ If yes, to depth ft.
Were strata sealed against pollution? Yes ☐ No ☐ Interval ft.
Method of sealing

(10) WATER LEVELS:
Depth of first water, if known 62 ft.
Standing level after well completion ft.

(11) WELL TESTS:
Was well test made? Yes ☐ No ☒ If yes, by whom?
Type of test Pump ☐ Bailer ☐ Air lift ☒
Depth to water at start of test ft. At end of test ft
harge gal/min after hours Water temperature
Chemical analysis made? Yes ☐ No ☒ If yes, by whom?
Was electric log made? Yes ☒ No ☐ If yes, attach copy to this report

(12) WELL LOG: Total depth 315 ft. Depth of completed well 315 ft.

from ft.	to ft.	Formation (Describe by color, character, size or material)
0	102	Fine sand short streak of clay.
102	149	Medium & coarse sand, gravel mix.
149	315	Blue Granite (Decompose).

Work started 6-14 19 89 Completed 6-23 19 89

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
SIGNED (Well Driller)
NAME SoCal Pump & Well Service, Inc. (Person, firm, or corporation) (Typed or printed)
Address 585 W. Valley Blvd
City Bloomington, California Zip 92316
License No. 510836 Date of this report Nov 1, 1989

R 188 (REV. 7-76) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

This is our well # Dave Pafund

1S/1W-33M7

Well BAUMANN 1/6

WELL RECORD

SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT

Company _____

Location S of Potato Canyon Rd. Lot 7 - So Mtn Sub. 36 01866

SE 1/4 SE 1/4 Township 1 S Range 1 W Section 27

PIT

Date drilled _____ By _____

Depth 115 Diameter _____ Packed _____

CASING

Diameter 8 Length 115 Gauge 12

" _____ " _____ " _____

Perforated interval _____

COLUMN

Diameter 3 Length 90 Gauge STD

" _____ " _____ " _____

Tube diameter 1 1/4 Shaft diameter 3/4

BOWLS

Date installed _____ By _____

Make Peerless Model 6 L.A. Serial no. _____

Size 6 Stages 12 Length _____ Suction 10

DESIGN PERFORMANCE

GPM _____ RPM _____ TDH _____ HP _____

GPM _____ RPM _____ TDH _____ HP _____

GPM _____ RPM _____ TDH _____ HP _____

ENGINE

Date installed _____ By _____

Type _____ Make Waukesha 4 cyl Model ICK 136C Serial no. 768040

Cu. in. 61 B & S 2½x3 1/8 HP 10.6 RPM KR 1950

GEAR

Date installed _____ By _____

Make Johnson Model HA - 2.3 Serial no. 17348 HP 15

Shaft Spicer Universals _____

Notes: _____

SBVMWD FORM JK-10C

1S/1W-33M1

TRIPLICATE
Owner's Copy

Well 16

Page 1 of 1

Owner's Well No. 16

Date Work Began 4/23/01 , Ended 4/27/01

Local Permit Agency San Bernardino County Health Services

Permit No. 2001040204 Permit Date 4/13/01

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet

No. 584982

DWR USE ONLY — DO NOT FILL IN
STATE WELL NO./STATION NO.
LATITUDE LONGITUDE
APN/TRS/OTHER

GEOLOGIC LOG

ORIENTATION (✓) X VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)

DEPTH TO FIRST WATER ___ (Ft.) BELOW SURFACE

DEPTH FROM SURFACE Ft.	to Ft.	DESCRIPTION *Describe material, grain size, color, etc.*
0	50	Installed sanitary seal on existing well, bored 6" around existing 16" casing and filled with 6 sack concrete and pea gravel by trammie pipe Depth of Sanitary seal 50'

TOTAL DEPTH OF BORING ___ (Feet)

TOTAL DEPTH OF COMPLETED WELL ___ (Feet)

WELL OWNER

Name [redacted]

Mailing Address [redacted]

CITY [redacted] STATE ZIP

WELL LOCATION

Address Canyon Drive 3/4 mile east of Oak Glen

City Yucaipa

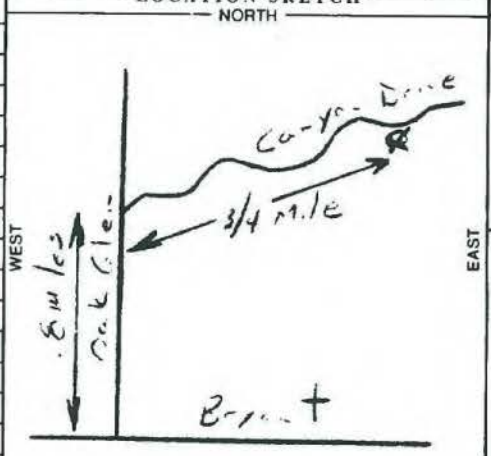
County San Bernardino

APN Book 0321 Page 251 Parcel 14

Township 1S Range 1 Section 33

Latitude ___ DEG. ___ MIN. ___ SEC. NORTH Longitude ___ DEG. ___ MIN. ___ SEC. WEST

LOCATION SKETCH



Illustrate or Describe Distance of Well from Landmarks such as Roads, Buildings, Fences, Rivers, etc.
PLEASE BE ACCURATE & COMPLETE.

ACTIVITY (✓)

___ NEW WELL

MODIFICATION/REPAIR

___ Deepen

X Other (Specify) **Sanitary Seal**

___ DESTROY *(Describe Procedures and Materials Under "GEOLOGIC LOG")*

PLANNED USE(S) (✓)

___ MONITORING

WATER SUPPLY

___ Domestic

X Public*

___ Irrigation

___ Industrial

___ "TEST WELL"

___ CATHODIC PROTECTION

___ OTHER (Specify)

DRILLING METHOD ___ FLUID ___

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH OF STATIC WATER LEVEL ___ (Ft.) & DATE MEASURED ___

ESTIMATED YIELD* ___ (GPM) & TEST TYPE ___

TEST LENGTH ___ (Hrs.) TOTAL DRAWDOWN ___ (Ft.)

** May not be representative of a well's long-term yield.*

CASING(S)

DEPTH FROM SURFACE Ft.	to Ft.	BORE-HOLE DIA. (Inches)	TYPE (✓) BLANK	SCREEN	CONDUCTOR	FILL PIPE	MATERIAL/GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft.	to Ft.	TYPE: CEMENT (✓)	BENTONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
0	50	X			N/A

ATTACHMENTS (✓)

___ Geologic Log

___ Well Construction Diagram

___ Geophysical Log(s)

___ Soil/Water Chemical Analyses

___ Other ___

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME Tri County Pump Company
(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

ADDRESS 241 South Arrowhead Ave. CITY San Bernardino STATE CA ZIP 92408

Signed [signature] (WELL DRILLER/AUTHORIZED REPRESENTATIVE)

DATE SIGNED 5/9/01

C-57 LICENSE NUMBER 744742

DWR 188 REV. 7-90

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

Well 17

TRIPLICATE
Owner's Copy

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
WATER WELL DRILLERS REPORT

2S/1W-21

Do not fill in
No. 15689

Notice of Intent No.
Permit No. or Date
State Well No. 02S/07W-02Q02
Other Well No.

(1) OWNER: Name [redacted]
Address [redacted]
City [redacted] Zip [redacted]

(2) LOCATION OF WELL (See instructions):
County San Bernadino Owner's Well Number W-62
Well address if different from above
Township Range Section
Distance from cities, roads, railroads, fences, etc.

WELL LOCATION SKETCH

(3) TYPE OF WORK:
New Well [X] Deepening [ ]
Reconstruction [ ]
Reconditioning [ ]
Horizontal Well [ ]
Destruction [ ] (Describe destruction materials and procedures in Item 11)

(4) PROPOSED USE:
Domestic [ ]
Irrigation [ ]
Industrial [ ]
Test Well [ ]
Stock [ ]
Municipal [ ]
Other [ ]

(5) EQUIPMENT:
Rotary [ ] Reverse [ ]
Cable [ ] Air [X]
Other [ ] Bucket [ ]

(6) GRAVEL PACK:
Yes [ ] No [ ] Size
Diameter of bore
Packed from ft. to ft.

(7) CASING INSTALLED:
Steel [ ] Plastic [X] Concrete [ ]

From ft.	To ft.	Dia.	Gage or wall

(8) PERFORATIONS:
Type of perforation or size of screen

From	To	Slot

(9) WELL SEAL:
Was surface sanitary seal provided? Yes [X] No [ ] If yes, to depth ft.
Were strata sealed against pollution? Yes [ ] No [X] Interval ft.
Method of sealing Steel & Cement

(10) WATER LEVELS:
Depth of first water, if known 80 ft.
Standing level after well completion 65 ft.

(11) WELL TESTS:
Was well test made? Yes [X] No [ ] If yes, by whom?
Type of test Pump [ ] Bailer [ ] Air lift [X]
Depth to water at start of test ft. At end of test ft.
Discharge 100 gal/min after hours Water temperature
Chemical analysis made? Yes [ ] No [X] If yes, by whom?
Was electric log made? Yes [ ] No [X] If yes, attach copy to this report

(12) WELL LOG: Total depth 180 ft. Depth of completed well 180 ft.

from ft.	to ft.	Formation (Describe by color, character, size or material)
0	10	Brown DG & Firm
10	20	Brown DG & Firm
20	40	firmeDG brown
40	80	Gravel brown DG mix
80	100	rusty brown gravel water
100	140	brown DG firm
140	150	black sand stone or rock
150	160	brown green DG
160	180	Harder DG brown
180		STOP

Work started 4-7 19 87 Completed 4-9 19 87

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

SIGNED (Well Driller)

NAME Ron Engeldinger (Person, firm, or corporation) (Typed or printed)
Address P.O. Box 250
City Hemet, Ca. Zip 92343
License No. 294625 Date of this report 4-16-87

WR 188 (REV. 7-76) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM 43816 950 7-76 50M QUAD (J)T OSP

NOT VALID FOR PUBLIC USE
WELL CODE SEC. 13752

Was 50 ft sanitary seal pumps test

Well 17 [redacted] 2S/1W-24

hen 62

TRIPLICATE
Owner's Copy

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES

WATER WELL DRILLERS REPORT

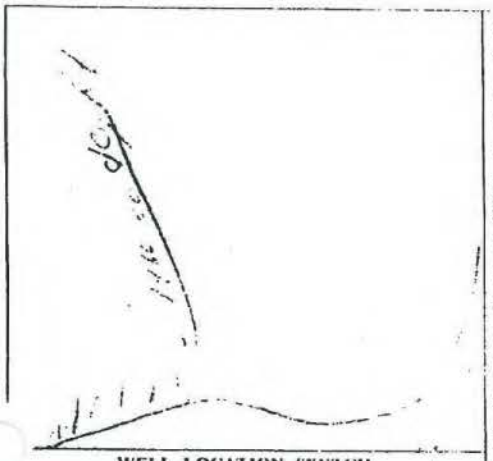
Do not fill
No. 15689

Notice of Intent No. [redacted]
Permit No. or Date [redacted]

State Well No. [redacted]
Other Well No. [redacted]

(1) OWNER: Name [redacted]
Address [redacted]
City [redacted] Zip [redacted]

(2) LOCATION OF WELL (See instructions):
County San Bernadino Owner's Well Number [redacted]
Well address if different from above [redacted]
Township [redacted] Range [redacted] Section [redacted]
Distance from cities, roads, railroads, fences, etc. [redacted]



WELL LOCATION SKETCH

(3) TYPE OF WORK:
New Well [X] Deepening [ ]
Reconstruction [ ]
Reconditioning [ ]
Horizontal Well [ ]
Destruction [ ] (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:
Domestic [ ]
Irrigation [ ]
Industrial [ ]
Test Well [ ]
Stock [ ]
Municipal [ ]
Other [ ]

(5) EQUIPMENT:
Rotary [ ] Reverse [ ]
Cable [ ] Air [X]
Other [ ] Bucket [ ]

(6) GRAVEL PACK:
Yes [ ] No [ ] Size [ ]
Diameter of bore [ ]
Packed from [ ] to [ ] ft.

(7) CASING INSTALLED:
Steel [ ] Plastic [X] Concrete [ ]

(8) PERFORATIONS:
Type of perforation or size of screen:

From ft.	To ft.	Dia. in.	Gage or Wall	From ft.	To ft.	Slot size
	180	8"				

(9) WELL SEAL:
Was surface sanitary seal provided? Yes [X] No [ ] If yes, to depth [ ] ft.
Were strata sealed against pollution? Yes [ ] No [X] Interval [ ] ft.
Method of sealing Steel & Cement

(10) WATER LEVELS:
Depth of first water, if known 80 ft.
Standing level after well completion 65 ft.

(11) WELL TESTS:
Was well test made? Yes [X] No [ ] If yes, by whom? [ ]
Type of test Pump [X] Bailer [ ] Air lift [X]
Depth to water at start of test [ ] ft. At end of test [ ] ft.
Discharge 100 gal/min after [ ] hours Water temperature [ ]
Chemical analysis made? Yes [ ] No [X] If yes, by whom? [ ]
Electric log made? Yes [ ] No [X] If yes, attach copy to this report

(12) WELL LOG: Total depth 180 ft. Depth of completed well 180 ft.

from ft.	to ft.	Formation (Describe by color, character, size or material)
0	10	Brown DG & Firm
10	20	Brown DG & Firm
20	40	firmeDG brown
40	80	Gravel brown DG mix
80	100	rusty brown/gravel water
100	140	brown DG firm
140	150	black/sand stone or rock
150	160	brown/green DG
160	180	Harder DG brown
180		STOP

USE 752

Work started 4-7 19 87 Completed 4-9 19 87

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

SIGNED: [ ] (Well Driller)

NAME: Ron Engeldinger (Person, firm, or corporation) (Typed or printed)

Address P.O. Box 250

City Hemet, Ca. Zip 92343

License No. 294625 Date of this report 4-16-87

DWR 188 (REV. 7-76) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM 43816-950 7-76 50M QUAD (1) T OSP

1S/2W-25G1

ORIGINAL
File with DWR

Page 1 of 1

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet

Owner's Well No. [redacted] WELL #19 No. 766676

Date Work Began 9/28/99 Ended 10/12/99

Local Permit Agency San Bernardino County EHS Div

Permit No 1999100830 Permit Date 10/22/99

DWR USE ONLY -- DO NOT FILL IN
STATE WELL NO./STATION NO
LATITUDE LONGITUDE
APN/TRS/OTHER

GEOLOGIC LOG

ORIENTATION (✓) ___ VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)
DRILLING METHOD ___ FLUID ___

DEPTH FROM SURFACE FT.	TO FT.	DESCRIPTION (Describe material, grain size, color, etc.)
		Excavated down 6 feet, graveled well up to 50 feet and pumped in a 50 feet 10 sack sand slurry mix.

TOTAL DEPTH OF BORING ___ (Feet)
TOTAL DEPTH OF COMPLETED WELL ___ (Feet)

WELL OWNER

Name [redacted]
Mailing Address [redacted]
Yucaipa CA 92399
CITY STATE ZIP

WELL LOCATION

Address Fir/Goldstein
City Yucaipa
County San Bernardino
APN Book ___ Page ___ Parcel 303-391-78
Township 1S Range 2W Section 25
Latitude ___ DEG ___ MIN ___ SEC. NORTH Longitude ___ DEG ___ MIN ___ SEC. WEST

LOCATION SKETCH

NORTH
FIR
WEST
EAST
SAGE WOOD
SOUTH

Illustrate or describe distance of well from streets, buildings, fences, rivers, etc. and attach a map. Use additional paper if necessary. PLEASE BE ACCURATE & COMPLETE.

ACTIVITY (✓)

___ NEW WELL
MODIFICATION/REPAIR
___ Deepen
___ Other (Specify)
X DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")

PLANNED USES (✓)
WATER SUPPLY
___ Domestic ___ Public
___ Irrigation ___ Industrial
___ MONITORING
___ TEST WELL
___ CATHODIC PROTECTION
___ HEAT EXCHANGE
___ DIRECT PUSH
___ INJECTION
___ VAPOR EXTRACTION
___ SPARGING
___ REMEDIATION
___ OTHER (SPECIFY)

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER ___ (Ft.) BELOW SURFACE
DEPTH OF STATIC WATER LEVEL ___ (Ft.) & DATE MEASURED ___
ESTIMATED YIELD * ___ (GPM) & TEST TYPE ___
TEST LENGTH ___ (Hrs.) TOTAL DRAWDOWN ___ (Ft.)
* May not be representative of a well's long-term yield.

CASING (S)

DEPTH FROM SURFACE Ft.	TO Ft.	BORE-HOLE DIA. (Inches)	TYPE (✓) BLANK	SCREEN	CEMENTED JACKETED	NEAT PIPE	MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft.	TO Ft.	TYPE: CEMENT (✓)	BENTONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)

ATTACHMENTS (✓)

___ Geologic Log
___ Well Construction Diagram
___ Geophysical Log(s)
___ Soil/Water Chemical Analyses
___ Other ___

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I (We) undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME SoCal Pump & Well Drilling, Inc.
(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

ADDRESS P.O. Box 5488 CITY Riverside STATE CA ZIP 92517

Signed ___ (WELL DRILLER/AUTHORIZED REPRESENTATIVE) DATE SIGNED 12-7-00

C-57 LICENSE NUMBER 510836

1S/2W-25G1

Well 19
36-01105

WELL RECORD
SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT

Company _____

Location 1200 W. Bryant 800 No. Oak Glen ELEV 1770

NW 1/4 SE 1/4 Township 1S Range 1W Section 25

PIT

Date drilled _____ By _____

Depth 365 Diameter _____ Packed _____

CASING

Diameter 16 Length 365 Gauge _____

" _____ " _____ " _____

Perforated interval _____

COLUMN

Diameter _____ Length 300 Gauge _____

" _____ " _____ " _____

Tube diameter _____ Shaft diameter _____

BOWLS

Date installed _____ By Coe

Make Pomona Model Water tube Serial no. _____

Size _____ Stages _____ Length _____ Suction _____

DESIGN PERFORMANCE

GPM _____	RPM _____	TDH _____	HP _____
GPM _____	RPM _____	TDH _____	HP _____
GPM _____	RPM _____	TDH _____	HP _____

ENGINE

Date installed _____ By _____

Type Elect Make G.E. Model 12F3262 Serial no. 5777487

Cu. in. _____ B & S _____ HP 30 RPM 1770

GEAR

Date installed _____ By _____

Make _____ Model _____ Serial no. _____ HP _____

Shaft _____ Universals _____

Notes: Motor Rewind 64

SBVMWD FORM JK-10C

1S/2W-25G1

Well 1G
36-01165

MONTHLY PRODUCTION RECORD

SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT

Company _____

Month of _____ 5655

DATE	WATER METER	GPD	GPM	GAS METER	Cu. Ft.	OIL	MIN. DOWN
64 J				3879		—	6.5
F				4041			14.0
M				4092		22.73	8.5
A				4116			13.0
M				4137		8.36	8.0
J				4160			12.5
J				4196		39.51	19.0
A				4251			14.5
S				4294		89.87	18
O				4341			20
N				4404		10.30	9
D				4428			3-1/2
	200 GPM						
							201.5
65 J				4444		3.59	3
F				4453			5.5
M				4468		4.37	4.5
A				4482			4.0
M				4494		82.64	12.0
J				4520			14
J				4558		87.95	17.5
A				4608			
S				4676		86.70	17
O				4676			14
N				4715		9.52	8.5
D				4733			8.5
	200 GPM est.						
	1,242,000 GAL. 3.81 AF.						
TOT.							

REMARKS _____

SBVMWD FORM JK-101

WW #20

FROM: DEPT WATER RESOURCES FAX NO.: 9185474894 08-06-97 11:12A P.02

DUPLICATE
ginal, Duplicate and Triplicate with the
ONAL WATER POLLUTION
TROL BOARD No. 7
(appropriate number)

WATER WELL DRILLERS REPORT

(Sections 7076, 7077, 7078, Water Code)

STATE OF CALIFORNIA

Do Not Fill In
No 59344
State Well No. 1S/2W-25 R01
Other Well No.

OWNER:
Name [redacted]
Address

(2) LOCATION OF WELL:
County San Bernardino Owner's number if any
R. F. D. or Street No.
South 150 feet of SE¼, section 25, T1S Range 2W, NW corner of Bryant and Oak Glen, Yucaipa, Calif.

(3) TYPE OF WORK (check):
New well X Deepening ☐ Reconditioning ☐ Abandon ☐
If abandonment, describe materials and procedure in Item 11.

(4) PROPOSED USE (check):
Domestic ☐ Industrial ☐ Municipal X
Irrigation ☐ Test Well ☐ Other ☐

(5) EQUIPMENT:
Rotary X
Cable ☐
Dug Well ☐

(6) CASING INSTALLED:
SINGLE X DOUBLE ☐

From	To	Diam.	Gage Wall
	590	12 3/4"	¼
585/8"	to	12 3/4"	

ing guides

If gravel packed

Diameter of Bore	From	To
18 5/8"	0	590

Type and size of shoe or well ring
Describe joints welded joint
collars
pea
of mile

(7) PERFORATIONS:
Type of perforator used mill cut
Size of perforations 120 mesh, length by 14 rows in.

From	To	Diameter of Bore	Perforations per ft.
8190	590	120 mesh	14

XXXX XXXXXXX

(8) CONSTRUCTION:
Was a surface sanitary seal provided? X Yes ☐ No To what depth? 150 ft.
Were gravel strata sealed against pollution? ☐ Yes ☐ No If yes, give depth of strata
From ft. to ft.
Method of Sealing Rotary mud slurry

(9) WATER LEVELS:
Depth at which water was first found ft.
Static level before perforating ft.
Static level after perforating 400 ft. ft.

WELL TESTS:
Was test made? X Yes ☐ No If yes, by whom? C.V. Pump
Yield 830 gal./min. with 340 ft. drawdown after 24 hrs.
Temperature of water Was a chemical analysis made? ☐ Yes X No

(11) WELL LOG:
Total depth 590 ft. Depth of completed well 590 ft.
Formation. Describe by color, character, size of material, and structure.

From	To	Formation
0	58	coarse sand & gravel
58	70	coarse sand & gravel
70	104	coarse sand w streaks of heavy gravel
104	140	coarse sand w/gravel
140	190	sand & gravel
190	220	coarse sand
220	240	coarse sand
240	255	sand & gravel
255	280	sand w/ some clay
280	290	sand & gravel
290	300	sand & rock
300	320	sand & gravel
320	340	rocks & sand
340	375	sand & rock
375	395	sand & gravel, free
395	410	sand
410	440	hard sand & rock
440	480	hard sand & rock
480	500	coarse sand
500	555	coarse sand
555	578	coarse sand
578	590	coarse sand
590		Hard rock

CONFIDENTIAL - NOT FOR PUBLIC RELEASE

MICROFILMED

Work started 6/8 ,62 Completed July 20 ,6

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
NAME Coachella Valley Pump & Supply, I
(Person, firm or corporation) (Type or print)
Address P.O. Box 1274
Indio, Calif.
(SIGNED) (Well Driller)
License No. 161541 Dated , 19

DWR 188 (REV 5-

DUPLICATE
ginal, Duplicate and Triplicate with the
ONAL WATER POLLUTION
TROL BOARD No. 7
ppropriate number)

WATER WELL DRILLERS REPORT

(Sections 7076, 7077, 7078, Water Code)

WELL WAS #'O R01, R02 & R03

STATE OF CALIFORNIA

AS OF 8-7-97 - 015/02W-25R02S

Do Not Fill In

No 59344

State Well No. 1S/2W-25 R01

Other Well No.

OWNER:

Name [redacted]

Address

(2) LOCATION OF WELL:

County San Bernardino Owner's number, if any—

R. F. D. or Street No.

South 133 acers of SE¼, section 25, T1S Range 2W, NW corner of Bryant and Oak Glen, Yucaipa, Calif.

(3) TYPE OF WORK (check):

New well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐

If abandonment, describe material and procedure in Item 11.

(4) PROPOSED USE (check):

Domestic ☐ Industrial ☐ Municipal ☒

Irrigation ☒ Test Well ☐ Other ☐

(5) EQUIPMENT:

Rotary ☒

Cable ☐

Dug Well ☐

(6) CASING INSTALLED:

SINGLE ☒ DOUBLE ☐

ft. to	ft.	Diam.	Gage or Wall
590	12	3/4"	¼
85/8" to 12 5/4"			
ing guides			

Type and size of shoe or well ring

Describe joint welded slip joint collars

If gravel packed

Diameter of Bore	from ft.	to ft.
18 5/8"	0	590

Size of gravel #3 pea Holtville

(7) PERFORATIONS:

Type of perforator used mill cut

Size of perforations 120 mesh, length, by 14 rows in.

From ft.	to ft.	Perf. per row	Rows per ft.
190	590	120 mesh	14

(8) CONSTRUCTION:

Was a surface sanitary seal provided? ☒ Yes ☐ No To what depth 150 ft.

Were any strata sealed against pollution? ☐ Yes ☐ No If yes, note depth of strata

From ft. to ft.

Method of Sealing Rotary mud slurry

(9) WATER LEVELS:

ft which water was first found ft.

g level before perforating ft.

g level after perforating 400 ft. ft.

WELL TESTS:

ump test made? ☒ Yes ☐ No If yes, by whom? C.V. Pump

Yield: 850 gal./min. with 340 ft. draw down after 24 hrs.

Temperature of water Was a chemical analysis made? ☐ Yes ☒ No

Was electric log made of well? ☐ Yes ☒ No

(11) WELL LOG:

Total depth 590 ft. Depth of completed well 590 ft.

Formation: *Describe by color, character, size of material, and structure.*

ft. to	ft.	
0	58	coarse sand & gravel
58	70	coarse sand & gravel
70	104	coarse sand w streaks of heavy gravel
104	149	coarse sand w/gravel
149	190	sand & gravel
190	220	coarse sand
220	240	coarse sand
240	255	sand & gravel
255	280	sand w/ some clay
280	290	sand & gravel
290	300	sand & rock
300	320	sand & gravel
320	340	rocks & sand
340	375	sand & rock
375	395	sand & gravel, free
395	410	sand
410	440	hard sand & rock
440	480	hard sand & rock
480	500	coarse sand
500	555	coarse sand
555	578	coarse sand
578	590	coarse sand
590		Hard rock

No test yield

CONFIDENTIAL - NOT FOR PUBLIC RELEASE

AUG 11 1997

MICROFILME

Work started 6/8 19 62. Completed July 20 62

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Coachella Valley Pump & Supply, Inc.

(Person, firm, or association) (Typed or printed)

Address P.O. Box 1274

Indio, Calif.

[SIGNED] [signature]

Well Driller

License No. 161541 Dated , 19

57025 6-57 50M QUIN △ SPO

DWR 188 (REV. 3-54)

#20

COACHELLA VALLEY PUMP & SUPPLY, Inc.

JOHNSTON PUMP DISTRIBUTORS
COMPLETE PUMPING EQUIPMENT
DOMESTIC AND IRRIGATION

Licensed Contractors
Telephone EXpress 9-2192
P. O. BOX 1274 ☆ INDIO, CALIF. 92201

SPRINKLER IRRIGATION SYSTEMS
WATER WELL DRILLING
FABRICATED STEEL PIPE

May 30, 1968

San Bernardino Valley Municipal Water District
L.D. Hook, Water Superintendent
P.O. Box 458
Yucaipa, California 92399

Dear Mr. Hook:

I cannot find a copy of the report that was sent to the State on their forms, but below is the needed information as we have in our records. This information is the same as that reported.

Drilled for: E.J. Culligan
Started: June8, 1962
finished: July 20, 1962
Legal description: South 133 acres of SE¼, Sec. 25; T1S; R2W; NW corner of Bryant and Oak Glen, Yucaipa, Calif.

Well Log:

0'	to	58'	Coarse sand & gravel
58'		70'	coarse sand & gravel
70		104	coarse sand w/streaks of heavy gravel
104		149	coarse sand w/gravel
149		190	sand & gravel
190		240	coarse sand
240		255	sand & gravel
255		280	sand w/some clay
280		290	sand & gravel
290		300	sand & rock
300		320	sand & gravel
320		340	rocks & sand
340		375	sand & rock
375		395	sand & gravel
395		410	sand
410		480	hard sand & rock
480		590	coarse sand
590		597	hard rock

Casing record:

0'	590'	12 3/4" OD X ¼" wall casing
190'	590'	perforations, mill cut, 120 mesh, 14 rows

Water standing level: 400'

diameter of drilled hole: 18 5/8"

Size of gravel: small pea

Sealed to 150'

Yours truly,

State of California
DEPARTMENT OF WATER RESOURCES
Southern District

FACSIMILE TRANSMISSION COVER SHEET

DATE: 8/6/97

TO: Ron McCool
NAME OF RECIPIENT

YVWD
ORGANIZATION

909 7976381
FAX NUMBER OF RECIPIENT

PHONE NUMBER OF RECIPIENT

FROM: Gary Gilbreath
NAME OF SENDER

818 543-4600 Ext 222
PHONE

Data Section Fax # 818 543-4604
SECTION OR UNIT

770 Fairmont Ave. Glendale, Ca. 91203

1 PAGES TO FOLLOW

APPROVAL

SUBJECT: per our conversation

COMMENTS:

IF ALL PAGES SHOWN ARE NOT RECEIVED, PLEASE CALL:
ATSS 8-667-4600 OR PUBLIC 818-543-4600

SOUTHERN DISTRICT FACSIMILE MACHINE PHONE NUMBERS ARE:
ATSS 8-667-4604 OR PUBLIC 818-543-4604

THE RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES

State Well No. 01S / 02W- 25R01, S B&M

WELL INDEX

Location No.
Serial or Ventura No.
Local or Riv. No.
Bulletin 39-J No.
Other No. Log No 59344

County 36
Areal Designation ~~Y-01 F6~~
Areal Code No. 8 Y-01. F6

Well Condition 4
Ref. Pt. Elev. 2762.0 ft.
Effective Date
Ground Elev. 2760.0 ft.

Data Available		Filed Under
Log	2	5050
Water Analyses	-	
Water Levels	-	
Prod. Records	-	

Well Use 3

Original Well Depth 0590 ft.
Well Soundings
Casing: Dia. 12 3/4 in., Length 0590 ft.
Perf. 190' to 590'

Aquifer(s)
Record: Begins 6/8/62, Ends

State of California
The Resources Agency
DEPARTMENT OF WATER RESOURCES

State Well No. 01S / 02W 25R 02S B&M

WELL INDEX

Location No.
Serial or Ventura No.
Local or Riv. No.
Bulletin 39-J No.
Other No. Yucaipa V.C.W.D Nr 20

County S. Bernardino (36)
Areal Designation
Areal Code No. Y 01 F6

Well Condition
Ref. Pt. Elev. 2740' ft.
Effective date
Ground Elev. ft.

Data Available	Filed Under
Log	
Water Analyses	
Water Levels	
Prod. Records	

Well Use
Well Type

Original Well Depth 576 ft.
Well Soundings
Casing Dia. 12 in., Length ft.
Perf.

Aquifer(s)
Record: Begins , Ends

DWR 1058 (Rev. 6/70)

AUG 1 1 1997

Well 20

WELL RECORD

Rec. #36 02321

SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT

Company _____

Location 400' No. of Oak Glen Road - 1000' W. of Bryant Street

SE 1/4 SE 1/4 Township 1S Range 2W Section 25

PIT

Date drilled 1962 By _____

Depth 576' Diameter 12" Packed No

CASING

Diameter 12" Length 576' Gauge 1/4

" _____ " _____ " _____

Perforated interval _____

COLUMN

Diameter 8" Length 460' Gauge _____

" 6" " 50' " _____

Tube diameter 2½" Shaft diameter 1½"

BOWLS

Date installed April 1966 By Turley Pump Co.

Make Peerless Model 8 LB Serial no. 250120

Size 8" Stages 22 Length _____ Suction Strainer

DESIGN PERFORMANCE

GPM 275	RPM 1760	TDH 620	HP 60
GPM _____	RPM _____	TDH _____	HP _____
GPM _____	RPM _____	TDH _____	HP _____

ENGINE

Date installed 11-65 By Turley Pump Co.

Type Elect. Make U.S. Model _____ Serial no. 3831181

Cu. in. _____ B & S _____ HP 60 RPM 1760

GEAR

Date installed _____ By _____

Make _____ Model _____ Serial no. _____ HP _____

Shaft _____ Universals _____

Notes: 540' Air Line

SBVMWD FORM JK-10C

2S/2W - 11B2

QUINTUPLICATE
RETAIN THIS COPY

WATER WELL DRILLERS REPORT
(Sections 7076, 7077, 7078, Water Code)

THE RESOURCES AGENCY OF CALIFORNIA

Do Not Fill In 24
No 122021

State Well No.
Other Well No.

(1) OWNER:
District
Name [redacted]
Address [redacted]

(2) LOCATION OF WELL:
County San Bernardino Owner's number, if any [redacted]
R. F. D. or Street No. 100 ft. of east of 5th St. - 1000 feet north of Ave. F - Yucaipa

(3) TYPE OF WORK (check):
New well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in Item 11.

(4) PROPOSED USE (check):
Domestic ☐ Industrial ☐ Municipal ☒
Irrigation ☐ Test Well ☐ Other ☐

(5) EQUIPMENT:
Rotary ☐
Cable ☒
Dug Well ☐

(6) CASING INSTALLED:
SINGLE ☒ DOUBLE ☐

From	ft. to	ft.	Diam.	Gauge or Wall
0	566	16	1/4	"
566	590	16	5/16"	"
"	"	"	"	"
"	"	"	"	"
"	"	"	"	"
"	"	"	"	"

Type and size of shoe or well ring 16"x12"x1" Bit steel
Describe joint All joints butt weld

If gravel packed

Diameter of Bore	from ft.	to ft.
	"	"
	"	"
	"	"
	"	"

(7) PERFORATIONS:
Type of perforator used Mills
Size of perforations 2 1/2 in., length, by 7/16 in.
From 320 ft. to 585 ft. 8 Perf. per row 1 Rows per ft.

(8) CONSTRUCTION:
Was a surface sanitary seal provided? ☒ Yes ☐ No To what depth 20 ft.
Were any strata sealed against pollution? ☐ Yes ☒ No If yes, note depth of strata
From ft. to ft.
" Ring of concrete between
Method of Sealing casing and formation

(9) WATER LEVELS:
Depth at which water was first found 310 ft.
Standing level before perforating 306 ft.
Standing level after perforating 305 ft.

(10) WELL TESTS:
Was a pump test made? ☐ Yes ☒ No If yes, by whom?
Yield: gal./min. with ft. draw down after hrs.
Temperature of water Was a chemical analysis made? ☐ Yes ☐ No
Was electric log made of well? ☐ Yes ☐ No

(11) WELL LOG:
Total depth 590 ft. Depth of completed well 590 ft.
Formation: *Describe by color, character, size of material, and structure.*

0	ft. to	245	ft. Hard brown gravelly clay 2192.4
245	"	328	" Gray tight sand & gravel
	"		" some clay
328	"	430	" Rough gray gravel & boulders,
	"		" some clay
430	"	456	" Brown clay with gravel
	"		" embedded
456	"	532	" Rough gravel with few clay
	"		" streaks
532	"	540	" Brown clay withstreaks of
	"		" gravel 1897.4
540	"	563	" Gray and brown soft decomposed
	"		" granite
563	"	590	" Hard gray decomposed granite 1847
590	"		" Hard blue granite

Work started Nov. 2 1965 Completed Dec. 27 1965

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME KIRKLAND WELL SERVICE
(Person, firm, or corporation) *(Typed or printed)*
Address 32291 Dunlap Blvd.
Yucaipa, Calif.
[SIGNED] K. Kirkland
Well Driller
License No. 169847 Dated Jan. 3 1966

87649 5-62 25M QUIN ① △ SPO

DWR 188 (REV. 3-54)

File Original, Duplicate and Triplicate with the REGIONAL WATER POLLUTION CONTROL BOARD No. . . . . (insert appropriate number)

WATER WELL DRILLER'S REPORT

(Sections 7056, 7057, 7058, Water Code)

THE RESOURCES AGENCY OF CALIFORNIA

25/2W-11B2

No. 122022

State Well No. 01N/2W-11 B

Other Well No. Dan Hey

(1) OWNER:

Name [redacted]

Address [redacted]

(2) LOCATION OF WELL:

County San Bernardino Owner's number, if any— 24

R. F. D. or Street No. 100 ft. of 5th St.-1000 ft North of F St. Yucaipa.

Address of well if different from above

(3) TYPE OF WORK (check):

New well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐

If abandonment, describe material and procedure in Item 11.

(4) PROPOSED USE (check):

Domestic ☐ Industrial ☐ Municipal ☒

Irrigation ☐ Test Well ☐ Other ☐

(5) EQUIPMENT:

Rotary ☐

Cable ☒

Dug Well ☐

(6) CASING INSTALLED:

SINGLE ☒ DOUBLE ☐

					Gage or Wall
From	0 ft.	to	566 ft.	16" Diam.	1/4
"	566 "	"	590 "	" "	5/16
"	"	"	"	" "	"
"	"	"	"	" "	"
"	"	"	"	" "	"
"	"	"	"	" "	"

If gravel packed

Diameter of Bore	from ft.	to ft.
	"	"
	"	"
	"	"
	"	"
	"	"

Type and size of shoe or well ring Bit. Steel-16" Straight

Describe joint All joints butt weld

(7) PERFORATIONS:

Type of perforator used Mills

Size of perforations 2 1/2 in., length, by 7/16 in.

From 320 ft. to 585 ft. 8 Perf. per row 1 Rows per ft.

" " " " " " " " " " " "

" " " " " " " " " " " "

" " " " " " " " " " " "

(8) CONSTRUCTION:

Was a surface sanitary seal provided? ☒ Yes ☐ No To what depth 20 ft.

Were any strata sealed against pollution? ☐ Yes ☒ No If yes, note depth of strata

From ft. to ft.

" " "

Method of Sealing Ring of concrete between casing and formation

(9) WATER LEVELS:

Depth at which water was first found 310 ft.

Standing level before perforating 306 ft.

" level after perforating 305 ft.

(10) WELL TESTS:

Was a pump test made? ☐ Yes ☒ No If yes, by whom?

Yield: gal./min. with ft. draw down after hrs.

Temperature of water Was a chemical analysis made? ☐ Yes ☐ No

Was electric log made of well? ☐ Yes ☐ No

(11) WELL LOG:

Total depth 590 ft. Depth of completed well 590 ft.

Formation: Describe by color, character, size of material, and structure.

0	ft. to	245	ft. Hard brown gravelly clay.
245	"	328	" Gray tight sand and gravel some clay.
328	"	430	" Rough gray, gravel and boulders, some clay.
430	"	456	" Brown clay with gravel embedded.
456	"	532	" Rough gravel with few clay streaks.
532	"	540	" Brown clay with streaks of gravel.
540	"	563	" Gray and brown, soft decomposed granite.
563	"	590	" Hard gray decomposed granite.
	"	590	" Hard blue granite.

Work started Nov. 2 19 65 Completed Dec. 27 1965

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Kirkland Well Service (Person, firm, or corporation) (Typed or printed)

Address 32291 Dunlap Blvd. Yucaipa, Calif.

[SIGNED] K. Kirkland (Well Driller)

License No. 16-5311 Dated Jan. 12, 1966

2S/2W-11B2

Well 24
JG-02322

WELL RECORD

SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT

Company _____

Location 200 ft. E of 5th St. 900 ft No. of Ave. F. ELEV 2440

NW 1/4 NE 1/4 Township 2S Range 2 W Section 11

PIT

Date drilled Dec. 1965 By Kirkland
Depth 590 Diameter 16 ~~Cable Tool~~ Packed No

CASING

Diameter 16 Length 590 Gauge 1/4
" " "
Perforated interval 320 to 585 2½ by 7/16

COLUMN

Diameter 8 Length 400 Gauge std
" " "

Tube diameter 3 Shaft diameter 1-11/16

BOWLS

Date installed June 66 By Roberts
Make Johnston Model 14BC imp F Serial no. JY-2354
Size 14 Stages 12 Length _____ Suction ~~10 ft pipe~~ strainer only

DESIGN PERFORMANCE

GPM 850	RPM 1188	TDH 560	HP 150
ACT GPM 750	RPM 1188	TDH _____	HP _____
GPM _____	RPM _____	TDH _____	HP _____

ENGINE

Date installed June 66 By Roberts
Type Elec Make _____ Model _____ Serial no. _____
Cu. in. _____ B&S _____ HP 150 RPM 1160

GEAR

Date installed _____ By _____
Make _____ Model _____ Serial no. _____ HP _____
Shaft _____ Universals _____

Notes: ~~400 ft airline, plastic~~
P-61 Pump control valve installed. Warric automation to the 2nd. St. reservoir. Well has 10 min. blow off time for heavy sand condition experienced for first 5-10 min.

SBVMWD FORM JK-10C

RETAIN THIS COPY

2S 1W 8F01S

(Sections 7076, 7077, 7078, Water Code)

Wildwood Canyon #27

No. 109205

THE RESOURCES AGENCY OF CALIFORNIA

State Well No. .....

Other Well No. #5 Ass. 2005

(1) OWNER:

Name [redacted]

Address

(2) LOCATION OF WELL:

County San Bernardino Owner's number, if any—

R. F. D. or Street No.

Near City of San Bernardino (Wildwood Canyon)

(3) TYPE OF WORK (check):

New well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐

If abandonment, describe material and procedure in Item 11.

(4) PROPOSED USE (check):

Domestic ☒ Industrial ☐ Municipal ☐

Irrigation ☐ Test Well ☐ Other ☐

(5) EQUIPMENT:

Rotary ☒

Cable ☐

Dug Well ☐

(6) CASING INSTALLED:

SINGLE ☐ DOUBLE ☐

From ft.	to ft.	Diam.	Gage or Wall
0	314	6 5/8 x 7/16	

Type and size of shoe or well ring

Describe joint Welded

If gravel packed

Diameter of Bore	from ft.	to ft.
12 1/4	0	314

Size of gravel: 3/16 x 1

(7) PERFORATIONS:

Type of perforator used Mill

Size of perforations 3/16 in., length, by 1/2 in.

From ft.	to ft.	Perf. per row	Rows per ft.
164	314	4	2

(8) CONSTRUCTION:

Was a surface sanitary seal provided? ☒ Yes ☐ No To what depth 40 ft.

Were any strata sealed against pollution? ☐ Yes ☐ No If yes, note depth of strata

From ft.	to ft.

Method of Sealing Cement

(9) WATER LEVELS:

Depth at which water was first found ft.

Standing level before perforating ft.

Standing level after perforating ft.

(10) WELL TESTS:

Was a pump test made? ☐ Yes ☒ No If yes, by whom?

Yield: gal./min. with ft. draw down after hrs.

Temperature of water Was a chemical analysis made? ☐ Yes ☒ No

Was electric log made? ☐ Yes ☒ No

(11) WELL LOG:

Total depth 314 ft. Depth of completed well 314

Formation: Describe by color, character, size of material, and structure.

ft. to	ft.	
0	15	TOP SOIL
15	75	SAND & CLAY
75	95	CLAY
95	110	SAND
110	130	SAND & GRAVEL
130	161	SAND & ROCK
161	175	SAND
175	185	SAND & ROCK
185	210	ROCK & CLAY
210	250	ROCK
250	300	SAND & ROCK
300	314	DECOMPOSED GRANITE

314

140

164

Perf

95-

PERF

Work started 19 , Completed

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the my knowledge and belief.

NAME R. L. Titus (Person, firm, or corporation) (Typed or printed)

Address 145 E. 1st St. Mail 11 37

San Bernardino, Calif.

[SIGNED] R. L. Titus (Well Driller)

License No. 15026 Dated Feb. 2, 19..

MONITORING WELL NEXT TO WELL 27 (Well 27A monitoring well) 25/2W-8F2

not well 27

TRIPLICATE
Owner's Copy

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES

WATER WELL DRILLERS REPORT

Do not fill in

No. 182242

Notice of Intent No.
al Permit No. or Date 07208923

State Well No.
Other Well No.

(1) OWNER: Name [redacted]
Address [redacted]
City [redacted] Zip 92399

(2) LOCATION OF WELL (See instructions):
County San Bernardino Owner's Well Number
Well address if different from above Wildwood Canyon
Township 2 S Range 1 W Section 8
Distance from cities, roads, railroads, fences, etc.
Assessors Parcel #322-212-30

(3) TYPE OF WORK:
New Well ☒ Deepening ☐
Reconstruction ☐
Reconditioning ☐
Horizontal Well ☐
Destruction ☐ (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:
Domestic ☐
Irrigation ☐
Industrial ☐
Test Well ☒
Stock ☐
Municipal ☐
Other ☐

WELL LOCATION SKETCH

(5) EQUIPMENT:
Rotary ☒ Reverse ☐
Cable ☐ Air ☐
Other ☐ Bucket ☐

(6) GRAVEL PACK:
Yes ☒ No ☐ Size Pea Gravel
Diameter of bore 12¼
Packed from 20 to 207 ft.

(7) CASING INSTALLED:
Steel ☐ Plastic ☒ Concrete ☐

(8) PERFORATIONS:
Type of perforation or size of screen

From ft.	To ft.	Dia. in.	Gage or Wall	From ft.	To ft.	Slot size
0	207	4"	Sch40	160	207	.032

(9) WELL SEAL:
Was surface sanitary seal provided? Yes ☒ No ☐ If yes, to depth 20 ft.
Were strata sealed against pollution? Yes ☐ No ☐ Interval ft.
Method of sealing Bentonite

(10) WATER LEVELS:
Depth of first water, if known 65 ft.
Standing level after well completion ft.

(11) WELL TESTS:
Was well test made? Yes ☐ No ☒ If yes, by whom?
Type of test Pump ☐ Bailer ☐ Air lift ☒
Yield to water at start of test ft. At end of test ft
Discharge gal/min after hours Water temperature
Chemical analysis made? Yes ☐ No ☒ If yes, by whom?
Was electric log made? Yes ☐ No ☒ If yes, attach copy to this report

(12) WELL LOG: Total depth 207 ft. Depth of completed well 207 ft.

from ft.	to ft.	Formation (Describe by color, character, size or material)
0	60	ft fine sand
60	160	ft medium & coarse sand, small gravel.
160	180	ft Blue Grahite (Decompose).

Work started 6-21 1989 Completed 6-23 1989

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

SIGNED (Well Driller)
NAME SoCal Pump & Well Service, Inc. (Person, firm, or corporation) (Typed or printed)
Address 585 W. Valley Blvd
City Bloomington, California Zip 92316
License No. 510836 Date of this report Nov 1, 1989

R 188 (REV. 7-76) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

WELL #2
SMP. DIST. NO. 2

Girl Scout

SAN BERNARDINO VALLEY WATER CONSERVATION DISTRICT
324 West Citrus Avenue - Redlands, California

YVCWD #29

Should be Well 28

WELL LOG

WILDWOOD CANYON

Well No. 29

Well Owner [redacted]

Location On Mesa East of end of Wildwood Canyon. South of road about ½ mile.

____ ¼; ____ ¼; Sect. ____, T ____, R ____

Drilled by Brockman Date completed ____

Drilling method Rotary

Total depth 606' Size of casing and depth ____ Gauge ____ (Double) (Single)

Type of well Irrigation

Struck water at ____, SWL before perforating ____ after perforating ____ (ft.)

Completion test data: SWL ____ PWL ____ Discharge ____ Hours run ____

Surface elev. 3341.2 Source of information ____

Perforations ____

Depth	Elev. Bot. of Stratum	Material	Thickness
0-10		Top Soil	10
10-28		Sand	18
28-50		Soft Clay	22
50-72		Sandy Rock	22
72-160		Clay	88
160-191		Sand	31
191-205		Soft Clay	14
205-218		Sand, Gravel	13
218-248		Clay	30
248-256		Black sand	8
256-318		Soft Clay	62
318-329		Sand and Rock	11
329-408		Sandy Clay	79
408-420		Sand	12
420-490		Clay and Few Rocks	70
490-494		Sand	4
494-532		Sandy Clay	38
532-565		Clay Rock	33
565-572		Fine Sand	7
572-606		Clay	34
		ELEV. OF WELL 3341.2	

(Continued on reverse side)

Remarks: Pumped 45 miners inches

When filled out, please mail this form to
San Bernardino Valley Water Conservation District
324 West Citrus Ave. Redlands, California

TRIPLICATE
Owner's Copy

Page ___ of ___

Owner's Well No. Well #29

Date Work Began Jan Ended Health

Local Permit Agency County of Riv./Service Agency

Permit No. 23720 Permit Date January 23, 2000

29

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet

No. 766704

DWR USE ONLY — DO NOT FILL IN
STATE WELL NO / STATION NO
LATITUDE LONGITUDE
APN TRS OTHER

GEOLOGIC LOG

ORIENTATION (✓) ___ VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)

DRILLING METHOD ___ FLUID ___

DEPTH FROM SURFACE Ft.	to Ft.	DESCRIPTION *Describe material, grain size, color, etc.*
		Excavate down 6 feet from finish grade.
		Cut off casing, gravel well up to 50 feet.
		Install 2" tremie line and pumped in a 10 sack sand slurry mix, remove tremie and backfill hole.

RECEIVED
YUCAIPA VALLEY
WATER DIST.

TOTAL DEPTH OF BORING ___ Feet

TOTAL DEPTH OF COMPLETED WELL ___ Feet

WELL OWNER

Name [redacted]

Mailing Address [redacted]

CITY Yucaipa STATE CA ZIP 92399

WELL LOCATION

Address Pineview

City Calimesa

County Riverside

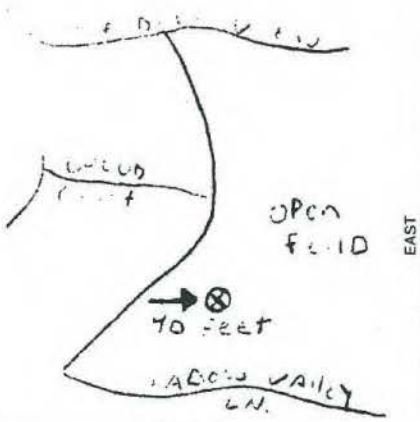
APN Book ___ Page ___ Parcel 403-320-066

Township 2S Range 1W Section 16

Latitude ___ DEG ___ MIN ___ SEC NORTH Longitude ___ DEG ___ MIN ___ SEC WEST

LOCATION SKETCH

NORTH



SOUTH

Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. ***PLEASE BE ACCURATE & COMPLETE.***

ACTIVITY (✓)

___ NEW WELL

MODIFICATION/REPAIR
___ Deepen
___ Other (Specify)

X DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")

PLANNED USES (✓)

WATER SUPPLY
___ Domestic ___ Public
___ Irrigation ___ Industrial

___ MONITORING
___ TEST WELL
___ CATHODIC PROTECTION
___ HEAT EXCHANGE
___ DIRECT PUSH
___ INJECTION
___ VAPOR EXTRACTION
___ SPARGING
___ REMEDIATION
___ OTHER (SPECIFY)

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER ___ (Ft.) BELOW SURFACE

DEPTH OF STATIC WATER LEVEL ___ (Ft.) & DATE MEASURED ___

ESTIMATED YIELD * ___ (GPM) & TEST TYPE ___

TEST LENGTH ___ (Hrs.) TOTAL DRAWDOWN ___ (Ft.)

* *May not be representative of a well's long-term yield.*

CASING (S)

DEPTH FROM SURFACE Ft.	to Ft.	BORE-HOLE DIA. (Inches)	TYPE (✓) BLANK	SCREEN	CONDUCTOR	FILL PIPE	MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)
0	160		X				steel	6"	.250	
160	308			X			steel	8"	.250	

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft.	to Ft.	TYPE CEMENT (✓)	BENTONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)

ATTACHMENTS (✓)

___ Geologic Log
___ Well Construction Diagram
___ Geophysical Log(s)
___ Soil/Water Chemical Analyses
___ Other ___

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME Keith Collier (PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED) SoCal Pump and Well, Inc.

ADDRESS P.O. Box 5483 CITY Riverside STATE CA ZIP 92517

Signed ___ (WELL DRILLER/AUTHORIZED REPRESENTATIVE) DATE SIGNED 6-26-01 C-57 LICENSE NUMBER 510836

DWR 188 REV 11-97

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

WELL #2
WP DIST. NO. 2

297 28 28

SAN BERNARDINO VALLEY WATER CONSERVATION DISTRICT
...½ West Citrus Avenue - Redlands, California

WILDWOOD CANYN

WELL LOG

23/1W - 9F-2
Well No.

Well Owner [redacted]
Location
; ¼, ¼, Section, T, R
Drilled by Trower Date completed Dec. 1959
Drilling method Rotary
Total depth 289' Size of casing and depth 8" & 6" 289 Gauge (Double) (Single)
Type of well
Struck water at , SWL before perforating after perforating (ft.)
Completion test data: SWL PWL Discharge Hours run
Surface elev. 3145 Source of information
Perforations

Depth	Elev. Bot. of Stratum	Material	Thickness
0-2		Surface Soil	2
2-25		Coarse pea gravel	23
25-30		Coarse Sand	5
30-55		Gravel (small) and Sand	25
55-70		Decomposed Granite (soft) and Blue Shale	25
70-85		Fine Sand	15
85-200		Coarse sand and gravel with occasional rock	115
200-215		Light colored decomposed granite	15
215-289		Granite - broken	74
		Standing water level 35' prior to casing and cleaning	
		Casing:	
		8" Id 130	
		8" OD 130-160	
		6" OD 160-289	
		Pump Test January 1960	
		Static W/L 40 Ft.	
		100 GPM 80 Ft.	
		125 GPM 95 Ft.	
		150 GPM 113 Ft.	
		170 GPM 141 Ft.	
		Pump tested about 3 weeks before coming in	

Remarks: 3145'

SHEET of Sheets

well 31 ... 1S/1W-19G2

TRIPLICATE
Owner's Copy

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
WATER WELL DRILLERS REPORT

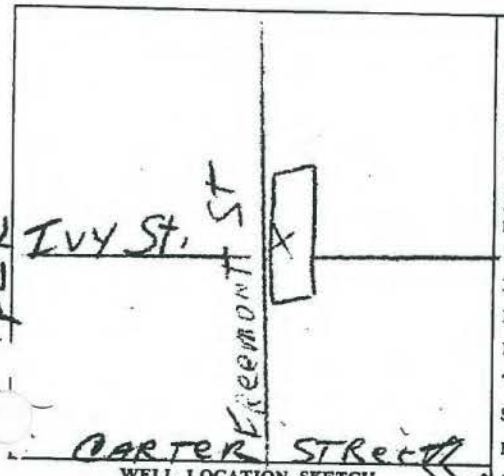
Do not fill in
No. 093756

of Intent No. 199078
Permit No. or Date 11248101

State Well No.
Other Well No.

(1) OWNER: [redacted]
Address [redacted]
City Zip 92399

(2) LOCATION OF WELL (See instructions): Ackerman Well
County San Bernardino Owner's Well Number
Well address if different from above at Ivy Aven ue and Fremont St
Township 1S Range 1W Section 19
Distance from cities, roads, railroads, fences, etc. Assessors Parcel No. 320-191 0- 43

WELL LOCATION SKETCH


(3) TYPE OF WORK:
New Well ☐ Deepening ☐
Reconstruction ☒
Reconditioning ☐
Horizontal Well ☐
Destruction ☐ (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:
Domestic ☐
Irrigation ☐
Industrial ☐
Test Well ☐
Stock ☐
Municipal ☐
Other community ☒

(5) EQUIPMENT:
Rotary ☐ Reverse ☒
Cable ☐ Air ☐
Other ☐ Bucket ☐

(6) GRAVEL PACK:
Yes ☐ No ☒ Size
Diameter of bore 24"
Packed from to ft.

(7) CASING INSTALLED:
Steel ☐ Plastic ☐ Concrete ☐

From ft.	To ft.	Dia. in.	Gage or Wall

(8) PERFORATIONS:
Type of perforation or size of screen

From ft.	To ft.	Slot size

(9) WELL SEAL:
Was surface sanitary seal provided? Yes ☒ No ☐ If yes, to depth 50 ft.
Were strata sealed against pollution? Yes ☐ No ☐ Interval ft.
Method of sealing 9 sack grout mix

(10) WATER LEVELS:
Depth of first water, if known ft.
Standing level after well completion ft.

(11) WELL TESTS:
Was well test made? Yes ☐ No ☒ If yes, by whom?
Type of test Pump ☐ Bailer ☐ Air lift ☐
Depth to water at start of test ft. At end of test ft
ge gal/min after hours Water temperature
Chemical analysis made? Yes ☐ No ☒ If yes, by whom?
s electric log made? Yes ☐ No ☒ If yes, attach copy to this report

(12) WELL LOG: Total depth ft. Depth of completed well ft.
from ft. to ft. Formation (Describe by color, character, size or material)

Work started 11/25/ 19 81 Completed 11/27 19 81

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief
SIGNED John R. Beylik (Well Driller)
NAME BEYLIK DRILLING, INC. (Person, firm, or corporation) (Typed or printed)
Address 591 South Walnut Street
City La Habra, Calif. 90631 Zip 90631
License No. 306291-C57&C-61 Date of this report June 23, 1982

R 188 (REV. 7-76) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

JUN 25 1982

JUN 1982
RECEIVED
YUCAIPA VALLEY
COUNTY WATER
DISTRICT

INITIAL
PUBLIC USE
SEC. 13752
WATER CODE
NOT FOR
SHALL

1S/1W-19B1

ORIGINAL
File Original, Duplicate and Triplicate with the
REGIONAL WATER POLLUTION
CONTROL BOARD No.
(Insert appropriate number)

WATER WELL DRILLERS REPORT
(Sections 7076, 7077, 7078, Water Code)

STATE OF CALIFORNIA

Well #33

Do Not Fill In
No 21869
State Well No.
Other Well No. 33 YUCWO

(1) OWNER:
Name [redacted]
Address

(2) LOCATION OF WELL:
County Owner's number, if any—
R. F. D. or Street No.
IVY ST. OFF BRYANT

(3) TYPE OF WORK (check):
New well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in Item 11.

(4) PROPOSED USE (check):
Domestic ☐ Industrial ☐ Municipal ☐
Irrigation ☒ Test Well ☐ Other ☐

(5) EQUIPMENT:
Rotary ☐
Cable ☒
Dug Well ☐

(6) CASING INSTALLED:
SINGLE ☒ DOUBLE ☐

From ft.	to ft.	Diam.	Gage or Wall
0	470	12	4

If gravel packed

Diameter of Bore	from ft.	to ft.

Type and size of shoe or well ring
Size of gravel:
Describe joint

(7) PERFORATIONS:
Type of perforator used MILLS
Size of perforations 3/8 in., length, by 1 1/2 in.

From ft.	to ft.	Perf. per row	Rows per ft.
340	460	5	1

(8) CONSTRUCTION:
NO CEMENT SANITARY SEAL
Was a surface sanitary seal provided? ☒ Yes ☐ No To what depth 200 ft.
Were any strata sealed against pollution? ☒ Yes ☐ No If yes, note depth of strata

From ft.	to ft.
0	200

Method of Sealing WELD PIPE SOLID

(9) WATER LEVELS:
Depth at which water was first found 300 ft.
Standing level before perforating 255 ft.
Standing level after perforating 245 ft.

(10) WELL TESTS:
Was a pump test made? ☐ Yes ☐ No If yes, by whom?
Yield: gal./min. with ft. draw down after hrs.
Temperature of water Was a chemical analysis made? ☐ Yes ☐ No
Was electric log made of well? ☐ Yes ☐ No

(11) WELL LOG:
Total depth ft. Depth of completed well ft.
Formation: *Describe by color, character, size of material, and structure.*

0 ft. to 20 ft.	ROCK	
20 " 50 "	SANDY CLAY	
50 " 88 "	SANDY CLAY	PEA GRAVEL
88 " 94 "	SANDY CLAY	
94 " 97 "	ROCK	
97 " 148 "	SANDY CLAY	ROCK
148 " 197 "	SANDY CLAY	
197 " 221 "	SANDY CLAY	SMALL GRAVEL
221 " 366 "	SANDY CLAY	ROCK
366 " 393 "	SANDY ROCK	D G
393 " 455 "	D G	CLAY
455 " 465 "	D G	SAND ROCK CLAY
465 " 479 "	D G	CLAY
479 " 496 "	SAND ROCK	D G HARD

Work started 19 . Completed 19

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
NAME R & W Drilling Inc
(Person, firm, or corporation) (Type or printed)
Address 25525 Redlands Blvd
Loma Linda Calif.
[SIGNED] RD White
Well Driller
License No. 231340 Dated 6/11, 19 65

9568B 3 54 5 M GU N SPO DWR FORM NO. 246 (REV 3-54)

1S/1W-20M1

DUPLICATE
Retain this copy

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES

WATER WELL DRILLERS REPORT

Do Not Fill In
№ 104927
State Well No.
Other Well No. #36

OWNER:

Name [redacted]
Address [redacted]

(2) LOCATION OF WELL:

County San Bernardino Owner's number, if any 36
Township, Range, and Section T 1S; R 1W; Sec. 20
Distance from cities, roads, railroads, etc. 360' So. of center of Ivy Ave., 33' East of center of Jefferson St. Yuc.

(3) TYPE OF WORK (check):

New Well XX Deepening ☐ Reconditioning ☐ Destroying ☐
If destruction, describe material and procedure in Item 11.

(4) PROPOSED USE (check):

Domestic ☒ Industrial ☐ Municipal ☒
Irrigation ☐ Test Well ☐ Other ☐

(5) EQUIPMENT:

Rotary ☐
Cable ☒
Other ☐

(6) CASING INSTALLED:

STEEL: OTHER:
SINGLE ☒ DOUBLE ☐

From ft.	To ft.	Diam.	~~Gage~~ or Wall	Diameter of Bore	From ft.	To ft.
0	443	12"	1/4"			

If gravel packed

Type of shoe or well ring: 12 x 3/4 x 12" Size of gravel:
Describe joint All joints butt weld

(7) PERFORATIONS OR SCREEN:

Type of perforation or name of screen Mills

From ft.	To ft.	Perf. per row	Rows per ft.	Size in. x in.
251	260	6	3" centers	5/16 x 2 1/4
260	430	6	12" centers	5/16 x 2 1/4

(8) CONSTRUCTION:

Was a surface sanitary seal provided? Yes ☒ No ☐ To what depth 50 ft.
Were any strata sealed against pollution? Yes ☐ No ☒ If yes, note depth of strata
From ft. to ft.
From ft. to ft.
Method of sealing 12 sacks cement-sand mix, pumped

(9) WATER LEVELS:

Depth at which water was first found, if known 245 ft.
Standing level before perforating, if known 245 ft.
Standing level after perforating and developing 245 ft.

(10) WELL TESTS:

Was pump test made? Yes ☐ No ☐ If yes, by whom?
Yield: gal./min. with ft. drawdown after hrs.
Temperature of water Was a chemical analysis made? Yes ☐ No ☐
Was electric log made of well? Yes ☐ No ☐ If yes, attach copy
To be in future

(11) WELL LOG:

Total depth 440 ft. Depth of completed well 440 ft.
Formation: *Describe by color, character, size of material, and structure*

0 ft. to 60 ft.	Brown clay, gravel, boulders
60	155	Brown sandy clay, sharp gravel, few boulders
155	233	Brown sandy clay with small gravel embedded
233	251	Brown clay, sand, small gravel-tight
251	260	Brown clay, sand, small gravel-loose
260	430	Brown tight clay, sand, small gravel
430	440	Blue decomposed granite

Copies to:
☐ Directors
☐ General Manager
☐ Attorney
☐ District Engineer
☐ Counseling Engineer
☐ Auditor
☐ Superintendent
☐ Agenda
☐ Shop
File
Date Routed

RECEIVED
FEB 18 1976
BY Y.V.C.W.D.

into annular space from 50' depth to surface.

Work started 12/18 19 75 Completed 2/3 19 76

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Kirkland Well Service
(Person, firm, or corporation) (*Typed or printed*)
Address 32291 Dunlap Blvd.
Yucaipa, Ca. 92399
[SIGNED] K. Kirkland
(Well Driller)
License No. 168847 Dated Feb. 14, 1976

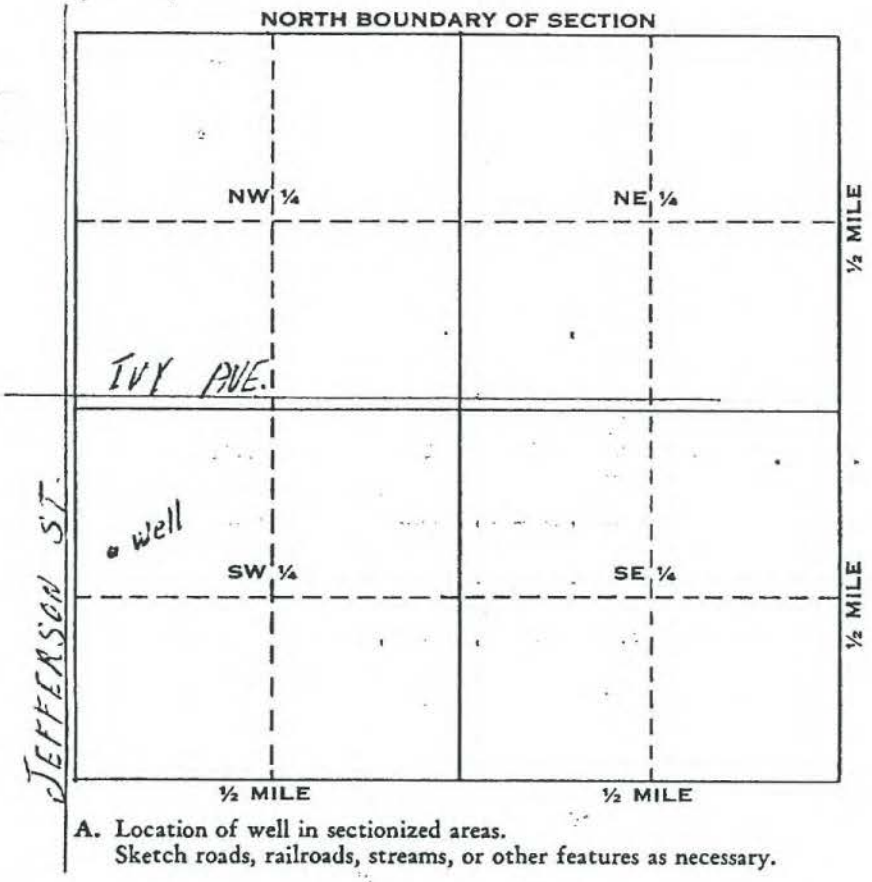
SKETCH LOCATION OF WELL ON REVERSE SIDE

DWR 188 (REV. 9-68)

67139-750 8-72 30M TRIP ①T OSP

YUCAIPA AREA

WELL LOCATION SKETCH

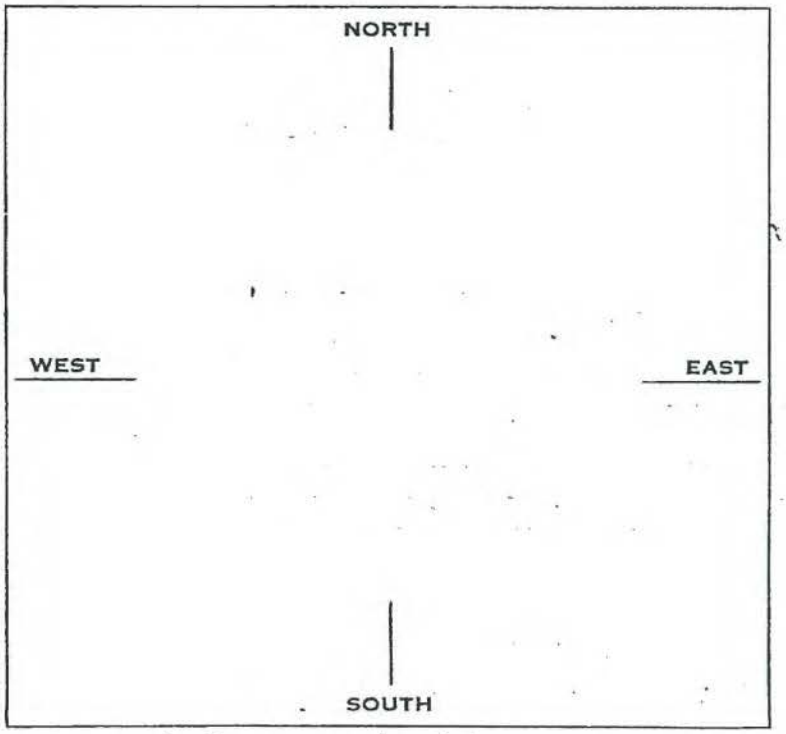


Township 1 N/S

Range 1 E/W

Section No. 20

A. Location of well in sectionized areas.
Sketch roads, railroads, streams, or other features as necessary.



B. Location of well in areas not sectionized.
Sketch roads, railroads, streams, or other features as necessary.
Indicate distances.

1S/1W-20M1

DUPLICATE
Retain this copy

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES

WATER WELL DRILLERS REPORT

Do Not Fill In

№ 104927

State Well No. Well #36

Other Well No.

(1) OWNER:

Name [redacted]

Address [redacted]

(2) LOCATION OF WELL:

County San Bernardino Owner's number, if any 36

Township, Range, and Section T 1S; R 1W; Sec. 20

Distance from cities, roads, railroads, etc. 360' So. of center of Ivy Ave., 33' East of center of Jefferson St. Ync.

(3) TYPE OF WORK (check):

New Well ☒ Deepening ☐ Reconditioning ☐ Destroying ☐

If destruction, describe material and procedure in Item 11.

(4) PROPOSED USE (check):

Domestic ☒ Industrial ☐ Municipal ☒
Irrigation ☐ Test Well ☐ Other ☐

(5) EQUIPMENT:

Rotary ☐
Cable ☒
Other ☐

(6) CASING INSTALLED:

STEEL: OTHER:
SINGLE ☒ DOUBLE ☐

From ft.	To ft.	Diam.	Gage or Wall
0	443	12"	1/4"

Size of shoe or well ring: 12 x 3/4 x 12"

Describe joint All joints butt weld

If gravel packed

Diameter of Bore	From ft.	To ft.

Size of gravel:

(7) PERFORATIONS OR SCREEN:

Type of perforation or name of screen Mills

From ft.	To ft.	Perf. per row	Rows per ft.	Size in. x in.
251	260	6	8" centers	5/16 x 2 1/4
260	430	6	12" centers	5/16 x 2 1/4

(8) CONSTRUCTION:

Was a surface sanitary seal provided? Yes ☒ No ☐ To what depth 50 ft.

Were any strata sealed against pollution? Yes ☐ No ☒ If yes, note depth of strata

From ft. to ft.

From ft. to ft.

Method of sealing 12 sacks cement-sand mix, pumped into annular space from 50' depth to surface.

(9) WATER LEVELS:

Depth at which water was first found, if known 245 ft.

Standing level before perforating, if known 245 ft.

Standing level after perforating and developing 245 ft.

(10) WELL TESTS:

Was pump test made? Yes ☐ No ☐ If yes, by whom?

gal./min. with ft. drawdown after hrs.

Temperature of water Was a chemical analysis made? Yes ☐ No ☐

Was electric log made of well? Yes ☐ No ☐ If yes, attach copy

To be in future

(11) WELL LOG:

Total depth 440 ft. Depth of completed well 440 ft.

Formation: *Describe by color, character, size of material, and structure*

ft. to	ft.	
0	60	Brown clay, gravel, boulders
60	155	Brown sandy clay, sharp gravel, few boulders
155	233	Brown sandy clay with small gravel embedded
233	251	Brown clay, sand, small gravel-tight
251	260	Brown clay, sand, small gravel-loose
260	430	Brown tight clay, sand, small gravel
430	440	Blue decomposed granite

Copies to:
☐ Directors
☐ General Manager
☐ Attorney
☑ District Engineer
☐ Counselling Engineer
☐ Auditor
☑ Superintendent
☐ Agenda
☐ Shop

RECEIVED
FEB 18 1976
BY Y.V.C.W.D.

File

Date routed

Work started 12/18 19 75 Completed 2/3 19 76

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Kirkland Well Service
(Person, firm, or corporation) (*Typed or printed*)

Address 32291 Dunlap Blvd.
Yucaipa, Ca. 92399

[SIGNED] K. Kirkland
(Well Driller)

License No. 168847 Dated Feb. 14, 19 76

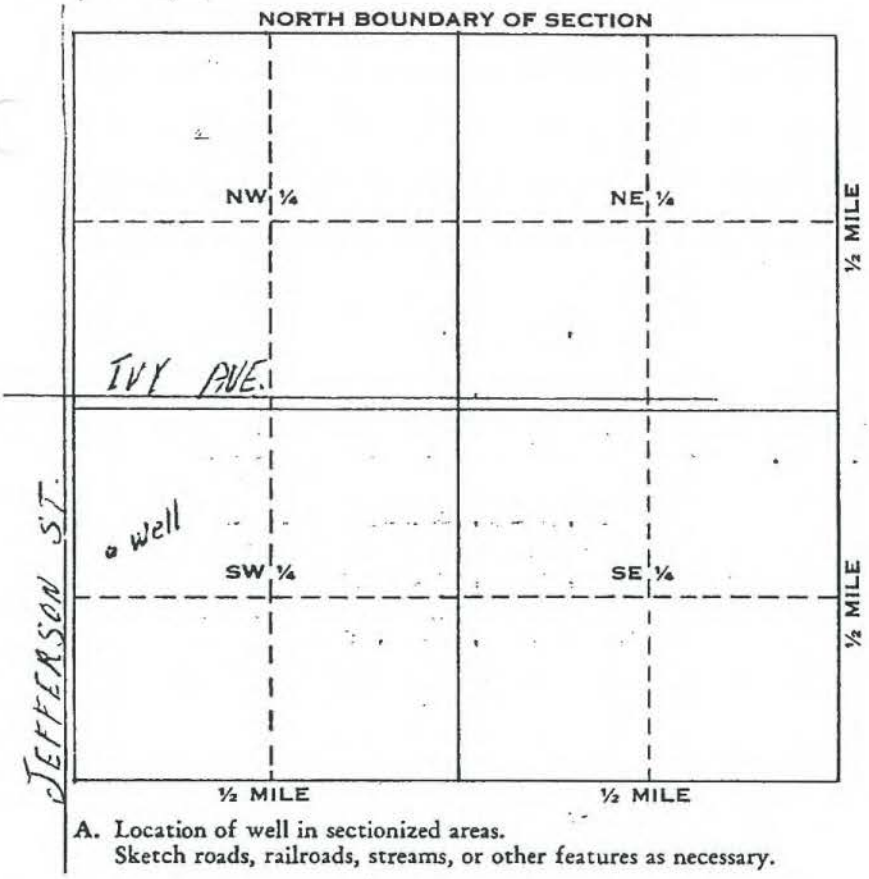
SKETCH LOCATION OF WELL ON REVERSE SIDE

DWR 188 (REV. 9-68)

67139-790 8-72 30M TRIP OT OSP

YUCAIPA AREA

WELL LOCATION SKETCH

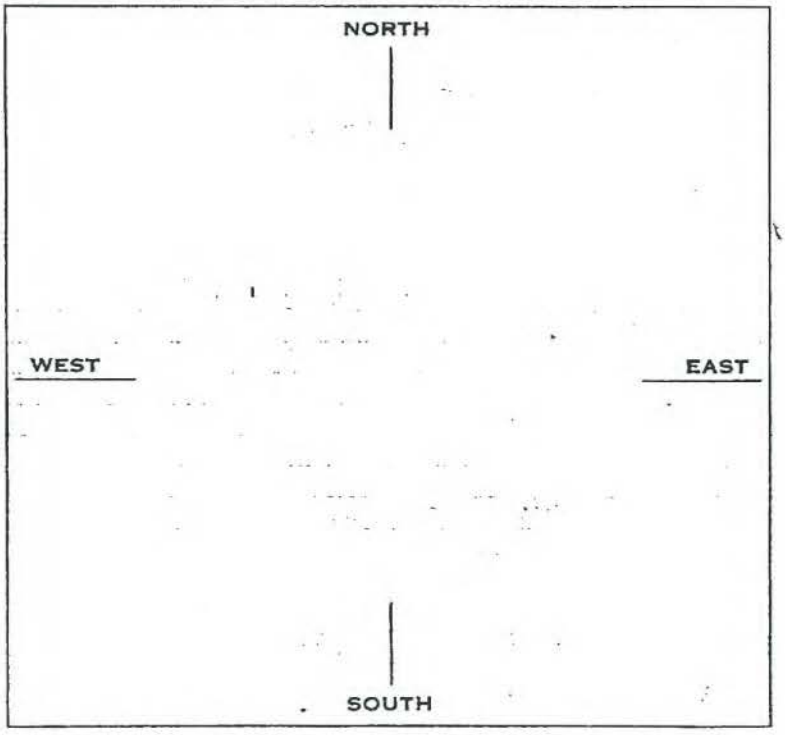


Township 1 N/S

Range 1 E/W

Section No. 20

A. Location of well in sectionized areas.
Sketch roads, railroads, streams, or other features as necessary.



B. Location of well in areas not sectionized.
Sketch roads, railroads, streams, or other features as necessary.
Indicate distances.

(2S/1W-17F1 (well (39)

DUPLICATE
Driller's Copy

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES

WATER WELL DRILLERS REPORT

Do not fill in

No. 069230

Permit No. _____
License Permit No. or Date 9024

State Well No. _____
Other Well No. Well #2

(1) OWNER:
Name [redacted]
Address [redacted]
City _____ Zip _____

(2) LOCATION OF WELL (See instructions):
County Riverside Owner's Well Number _____
Well address if different from above _____
Township 2S Range 1W Section 17
Distance from cities, roads, railroads, fences, etc.
Mt. Sub

WELL
STREAM
WELL LOCATION SKETCH

(3) TYPE OF WORK:
New Well [X] Deepening [ ]
Reconstruction [ ]
Reconditioning [ ]
Horizontal Well [ ]
Destruction [ ] (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:
Domestic [X]
Irrigation [ ]
Industrial [ ]
Test Well [ ]
Stock [ ]
Municipal [ ]
Other [ ]

(5) EQUIPMENT:
Rotary [X] Reverse [ ]
Cable [ ] Air [ ]
Other [ ] Bucket [ ]

(6) GRAVEL PACK:
Yes [X] No [ ] Size 5/16 x 7
Diameter of bore 0 to 413 is 10", 413 to 540 is 6¼"
Packed from 50 ft. to 413 ft.

(7) CASING INSTALLED:
Steel [X] Plastic [ ] Concrete [ ]

From ft.	To ft.	Dia. in.	Gage or Wall
0	413	6-5/8	.188

(8) PERFORATIONS:
Type of perforation or size of screen

From ft.	To ft.	Slot size
73	93	6 rows
113	133	12 cuts
153	173	2½ x 1/8"
193	253	
273	293	
313	333	
353	413	

Perf. - continued

(9) WELL SEAL:
Was surface sanitary seal provided? Yes [X] No [ ] If yes, to depth 50 ft.
Were strata sealed against pollution? Yes [ ] No [X] Interval _____ ft.
Method of sealing cement grout

(10) WATER LEVELS:
Depth of first water, if known 45 ft.
Standing level after well completion 30 ft.

(11) WELL TESTS:
Was well test made? Yes [X] No [ ] If yes, by whom? driller
Type of test Pump [ ] Bailer [ ] Air lift [X]
Depth water at start of test 400 ft. ft. At end of test _____ ft.
75 gal/min after _____ hours Water temperature _____
Was electric log made? Yes [ ] No [X] If yes, by whom? _____
Were electric logs made? Yes [ ] No [X] If yes, attach copy to this report

(12) WELL LOG:
Total depth 540 ft. Depth of completed well 540 ft.

from ft.	to ft.	Formation (Describe by color, character, size or material)
0	10	Top soil
10	13	Sand
13	16	Boc
16	33	Clay
33	48	Sand & clay
48	50	Rock
50	75	Clay
75	81	Rock
81	96	Clay & rock
96	180	Blue granite
180	185	Quarts & decomposed granite
185	205	Granite
205	226	Sandstone
226	265	Granite
265	272	Clay
272	540	Granite with fractured areas at about 4 ft. depths at 358, 380, 446 with quartz, 481, 510, and 519, Quartz fracture at 340

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

SIGNED Donald B. Trussell (Well Driller)
NAME AMERICAN DRILLING, INC. (Person, firm, or corporation) (Typed or printed)
Address 104 W. Main
City Aguanga, CA Zip 92536
License No. 324684 Date of this report Feb. 3, 1980

Work started Jan. 22 19 80 Completed Feb. 6 19 80

DWR 188 (REV 7-76) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

PUBLIC RECORD

(2S/1W-17L1 (

YVWD #40

TRIPLICATE
Owner's Copy

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
WATER WELL DRILLERS REPORT

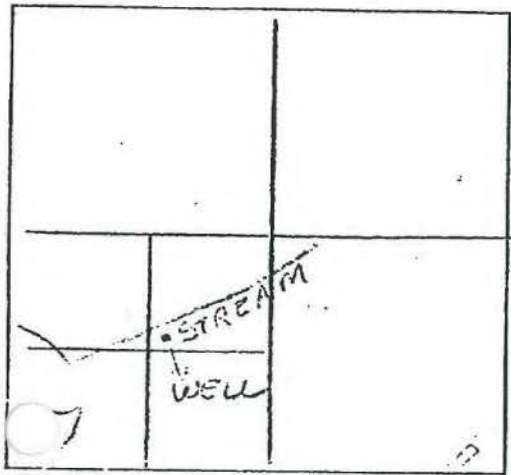
Do not fill in
No. 218802

Notice of Intent No.
Permit No. or Date

State Well No.
Other Well No. Well #3

(1) OWNER: Name [redacted]
Address [redacted]
City Zip 92320

(2) LOCATION OF WELL (See instructions):
County Riverside Owner's Well Number
Well address if different from above
Township 2S Range 1W Section 17
Distance from cities, roads, railroads, fences, etc.
NW¼, SW¼,



WELL LOCATION SKETCH

(3) TYPE OF WORK:
New Well ☒ Deepening ☐
Reconstruction ☐
Reconditioning ☐
Horizontal Well ☐
Destruction ☐ (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:
Domestic ☐
Irrigation ☐
Industrial ☐
Test Well ☐
Stock ☐
Municipal ☒
Other ☐

(5) EQUIPMENT:
Rotary ☒ Reverse ☐
Cable ☐ Air ☐
Other ☐ Bucket ☐

(6) GRAVEL PACK:
Yes ☒ No ☐ Size 5/16 x 4
Diameter of bore 10"
Packed from 50 to 349 ft.

(7) CASING INSTALLED:
Steel ☒ Plastic ☐ Concrete ☐

From ft.	To ft.	Dia. in.	Cage or Wall
0	349	6-5/8	.188

(8) PERFORATIONS:
Type of perforation or size of screen

From ft.	To ft.	Slot size
69	349	6 rows 12 cuts 2½ x .120

(9) WELL SEAL:
Was surface sanitary seal provided? Yes ☒ No ☐ If yes, to depth 50 ft.
Were strata sealed against pollution? Yes ☐ No ☒ Interval ft.
Method of sealing cement grout

(10) WATER LEVELS:
Depth of first water, if known 40 ft.
Standing level after well completion 29 ft.

(11) WELL TESTS:
Was well test made? Yes ☒ No ☐ If yes, by whom? driller
Type of test Pump ☐ Bailer ☐ Air lift ☒
Depth to water at start of test ft. At end of test ft
Yield: 100+ gal/min after hours Water temperature
Chemical analysis made? Yes ☐ No ☒ If yes, by whom?
Electric log made? Yes ☐ No ☒ If yes, attach copy to this report

(12) WELL LOG: Total depth 349 ft. Depth of completed well 349 ft.

from ft.	to ft.	Formation (Describe by color, character, size or material)
0	13	Soft dirt
13	26	Fractured white rock
26	28	Brown clay
28	35	Gray clay
35	145	Fractured white rock with water increasing at 60', 100', & 120'
145	150	Very fractured
150	162	Firm to hard white rock
162	165	Fractured
165	180	Firm to hard white rock w/ increase in water
180	195	Firm to hard black rock
195	201	Firm to hard white rock
201	204	Fractured
204	209	Firm to hard
209	212	Fractured w/ more water
212	220	Fairly hard granite
221	224	Fractured
225	234	Firm to hard gray granite, w/ increase in water
234	245	Light fracture
245	255	Granite with increase in water
255	260	Heavily fractured with water
260	264	Fairly hard
264	295	Fractured white rock w/ increase in water
295	349	Dark gray rock, fractured

Work started Dec. 12 19 80 Completed Dec. 19 19 80

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
SIGNED [signature] (Well Driller)
NAME AMERICAN DRILLING, INC. (Person, firm, or corporation) (Typed or printed)
Address 104 W. Main,
City Aguanga, CA Zip 92302
License No. 324684 Date of this report Dec. 22, 1980

DWR 188 (REV. 7-76) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

1S/2W-36A01

TRIPLICATE
Owner's Copy

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
WATER WELL DRILLERS REPORT

Do not fill in
No. 217102

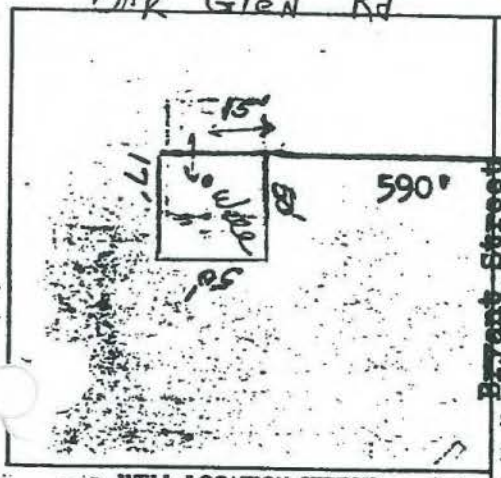
...tent No. 195450
...rmit No. or Date 02098204

State Well No.
Other Well No. #44

(1) OWNER: [redacted] Water District
Address [redacted]
City San Bernardino, Cal. Zip 92412

(2) LOCATION OF WELL (See instructions):
County San Bernardino Owner's Well Number
Well address if different from above
Township 1S Range 2W Section 36
Distance from cities, roads, railroads, fences, etc.

Oak Glen Rd



WELL LOCATION SKETCH

(3) TYPE OF WORK:
New Well [X] Deepening [ ]
Reconstruction [ ]
Reconditioning [ ]
Horizontal Well [ ]
Destruction [ ] (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:
Domestic [ ]
Irrigation [ ]
Industrial [ ]
Test Well [ ]
Stock [ ]
Municipal [X]
Other [ ]

(5) EQUIPMENT:
Rotary [X] Reverse [ ]
Cable [ ] Air [ ]
Other [ ] Bucket [ ]

(6) GRAVEL PACK: 5/16 x 16
Yes [X] No [ ] Size
Diameter of bore 22 in.
Packed from 0 to 660 ft.

(7) CASING INSTALLED:
Steel [X] Plastic [ ] Concrete [ ]

From ft.	To ft.	Dia. in.	Gage or Wall
0	50	16"	5/16
0	660	16"	5/16

(8) PERFORATIONS:
Type of perforation or size of screen: Roscoe Moss Louver

From ft.	To ft.	Slot size
275	650	1/8" x Std.

(9) WELL SEAL:
Was surface sanitary seal provided? Yes [ ] No [ ] If yes, to depth 50 ft.
Were strata sealed against pollution? Yes [X] No [ ] Interval ft.
Method of sealing cement grout

(10) WATER LEVELS:
Depth of first water, if known ft.
Standing level after well completion 311' ft.

(11) WELL TESTS:
Was well test made? Yes [ ] No [ ] If yes, by whom? C.V. Pump
Type of test Pump [X] Bailer [ ] Air lift [ ]
Depth to water at start of test 311 ft. At end of test 386 ft.
1000 gal/min after 24 hours Water temperature
...al analysis made? Yes [ ] No [ ] If yes, by whom?
...lectric log made? Yes [X] No [ ] If yes, attach copy to this report

(12) WELL LOG: Total depth 660 ft. Depth of completed well 660 ft.

from ft.	to ft.	Formation (Describe by color, character, size or material)
0	50	fine sand with large rock mix
50	65	fine sand with large rock size of hand.
65	110	medium & coarse sand mixed
110	120	Medium & coarse sand with small rock, mixed
120	180	Medium & coarse sand with small gravel & short streaks of sandy clay
180	320	Medium & coarse sand with small gravel
320	360	Medium & Coarse sand, dark
360	380	Med. & coarse sand with short streak of brown clay
380	660	Decomposed granite

Work started 2/14 19 82 Completed 5/20/82 19

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

SIGNED Coachella Valley Pump & Supply, Inc. (Well Driller)
NAME (Person, firm, or corporation) (Typed or printed)
Address P.O. Drawer QQQ
City Indio, Calif. Zip 92202
License No. 164541 Date of this report 8/9/82

DWR 188 (REV. 7-76) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

welenco

WELL ENGINEERING SURVEYS

ELECTRIC LOG

FILING NO

COMPANY McCALLA BROS.

WELL #46

FIELD YUCAIPA

STATE CALIFORNIA COUNTY SAN BERNARDINO

LOCATION 2ND ST @ OAK GLEN Rd.

OTHER SERVICES NONE

SEC ____ TWP ____ RGE ____

Permanent Datum: GROUND LEVEL, Elev. ____

Log Measured From G.L. 0 Ft. Above Perm. Datum

Drilling Measured From GROUND LEVEL

Elev.: K.B. ____ D.F. ____ G.L. ____

FIELD PRINT

Date	3/16/88				
Run No.	ONE				
Depth—Driller	1155'				
Depth—Logger	1155'				
Btm Log Inter.	1154'				
Top Log Inter.	100'				
Casing—Driller	36" @ 50'	@	@	@	
Casing—Logger	NOT REACHED				
Bit Size	17.5"				
Type Fluid in Hole	WATER				
Dens. | Visc.	N/A				
pH | Fluid Loss	N/A | ml	| ml	| ml	| ml	
Source of Sample	PIT				
R_m @ Meas. Temp.	22.0 @ 63 °F	@ °F	@ °F	@ °F	
R_{mf} @ Meas. Temp.	22.0 @ 63 °F	@ °F	@ °F	@ °F	
R_{mc} @ Meas. Temp.	N/A @ °F	@ °F	@ °F	@ °F	
Source: R_{mf} R_{mc}	MEAS. |	|	|	|	
R_m @ BHT	N/A @ °F	@ °F	@ °F	@ °F	
Time Since Circ.	2 HOURS				
Max. Rec. Temp.	N/A °F	°F	°F	°F	
Equip. | Location	DU-1 | L.A.	|	|	|	
Recorded By	RIDDER				
Witnessed By					

Fold Here — This Heading and L... Conform To API RP 31...4

REMARKS

Changes in Mud Type or Additional Samples

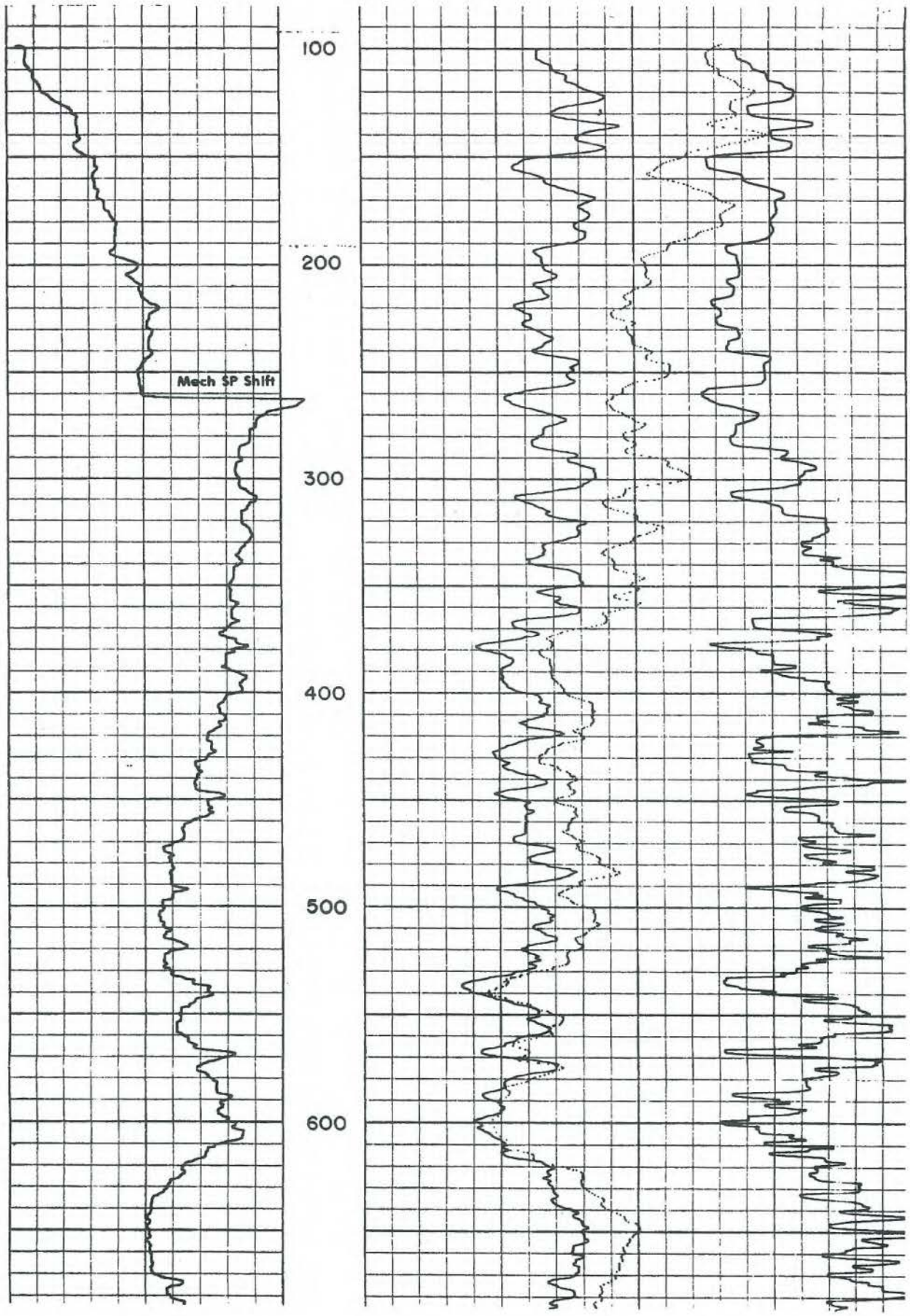
	Type Log	Depth	Scale Up Hole	Scale Down Hole
Date | Sample No.				
Depth—Driller	E-LOG	@ SEE BELOW	0-2000 ohms/m	
Type Fluid in Hole				
Dens. | Visc.				
ph | Fluid Loss	ml			
Source of Sample				
R_m @ Meas. Temp.	@ °F	@ °F	@ °F	@ °F
R_{mf} @ Meas. Temp.	@ °F	@ °F	@ °F	@ °F
R_{mc} @ Meas. Temp.	@ °F	@ °F	@ °F	@ °F
Source: R_{mf} | R_{mc}	—	—	—	—
R_m @ BHT	@ °F	@ °F	@ °F	@ °F
R_{mf} @ BHT	@ °F	@ °F	@ °F	@ °F
R_{mc} @ BHT	@ °F	@ °F	@ °F	@ °F

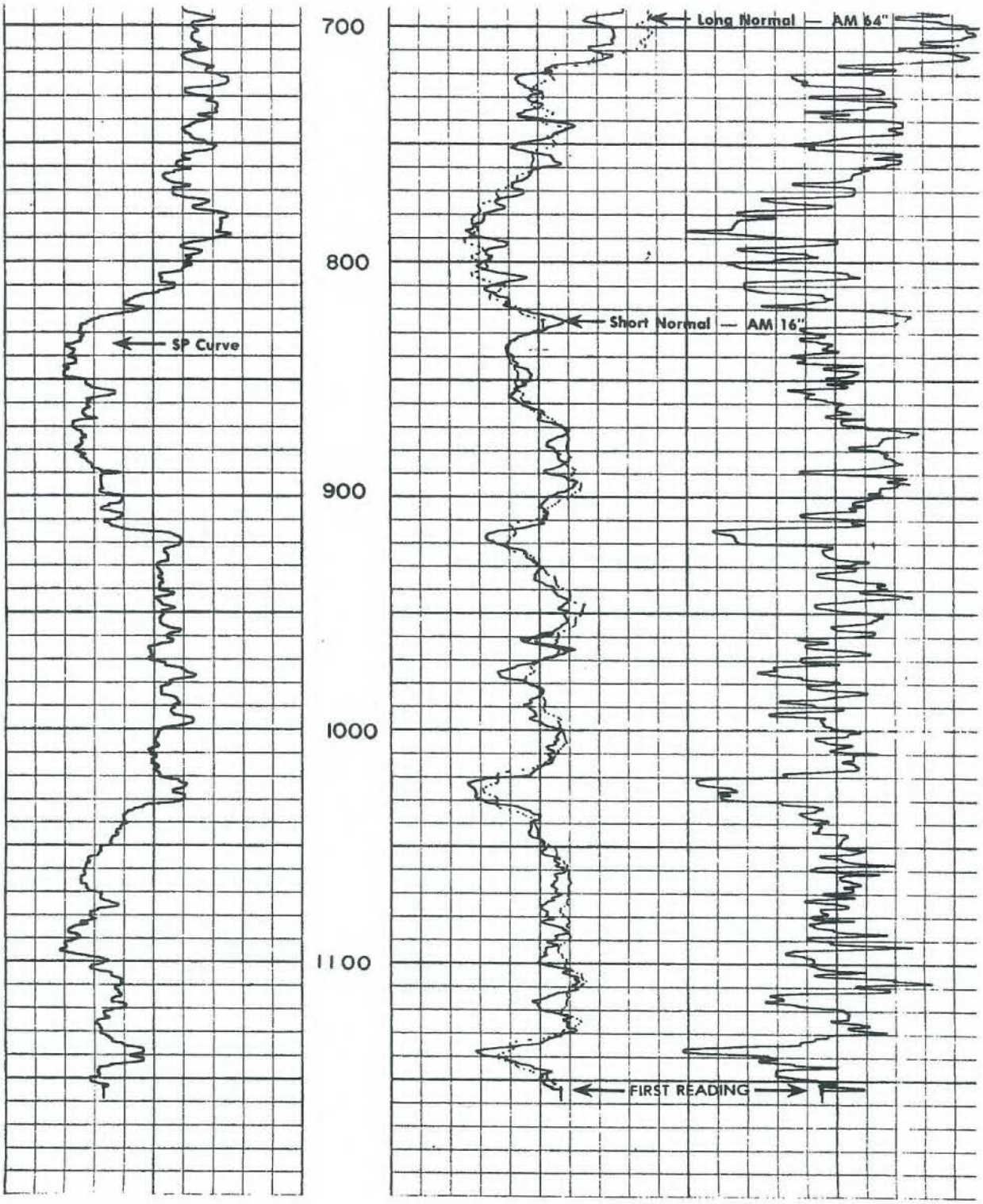
Equipment Data

	Run No.	Tool Type	Pad Type	Tool Position	Other
@ °F	ONE	NORMAL	—	FREE	
@ °F					
@ °F					

SPONTANEOUS POTENTIAL millivolts	Depths	RESISTIVITY ohms. m²/m	RESISTIVITY ohms. m²/m
10 + -		SHORT NORMAL 16 Inch 0 200	LONG NORMAL 64 Inch 0 200

WW 46
1S/2W-36H1


100
200
Mech SP Shift
300
400
500
600


700
800
900
1000
1100
SP Curve
Long Normal — AM 64"
Short Normal — AM 16"
FIRST READING

County of San Bernardino – Environmental Public Works Agency
ENVIRONMENTAL HEALTH SERVICES DEPARTMENT
385 North Arrowhead Avenue • San Bernardino, CA 92415-0160

1&2

Do Not Fill In
Permit No. 0106-2808
Expiration 1-26-89
FF
FA
SN

WELL PERMIT

PLEASE PRINT: Job # 5113 Well # 46

1. OWNER: Name [redacted]
Mailing Address [redacted]
City Yucaipa Zip
Phone No. 714) 797-5117

2. DATE OF WORK *(approximate)*:
Start 2/15/88 Complete 4/1/88

3. WELL DRILLER *(Check One)*:
☐ Owner ☒ Contractor McCalla Bros.
Name

4. WELL USE *(check)*:
☒ Community ☐ Industrial
☐ Individual ☐ Test
☐ Agricultural ☐ Other
☐ Dairy ☐ Horizontal

TYPE OF WORK *(check)*:
☒ New ☐ Reconstruction ☐ Destruction

Items 6 through 10 to be estimated for new wells, and exact for all other wells.

6. ANNULAR SEAL: Depth 50 ft.
Furnished by: ☐ Owner ☒ Contractor
☐ Driven Conductor Dia. 32 in., Wall (Gage) .250
☐ Sealing Material concrete, Thickness 4 in.

7. DEPTH OF WELL *(feet)*:
Proposed 800 Existing
DIAMETER OF BORE *(in.)*: 28

8. CASING INSTALLED:
☒ Steel ☐ Plastic ☐ Other

From (ft.)	To (ft.)	Dia. (in.)	Wall (Gage)
0	500	~~250~~ 16"	.250
500	800	~~250~~ 16"	.250 perforated

GRAVEL PACK: ☒ Yes ☐ No
From 0 to 800 ft.

9. PERFORATIONS *(if applicable)*:
From 500 to 800 ft.

10. SEALED ZONES *(if applicable)*:
From 0 to 50 ft.

11. GENERAL LOCATION MAP: 31-C4

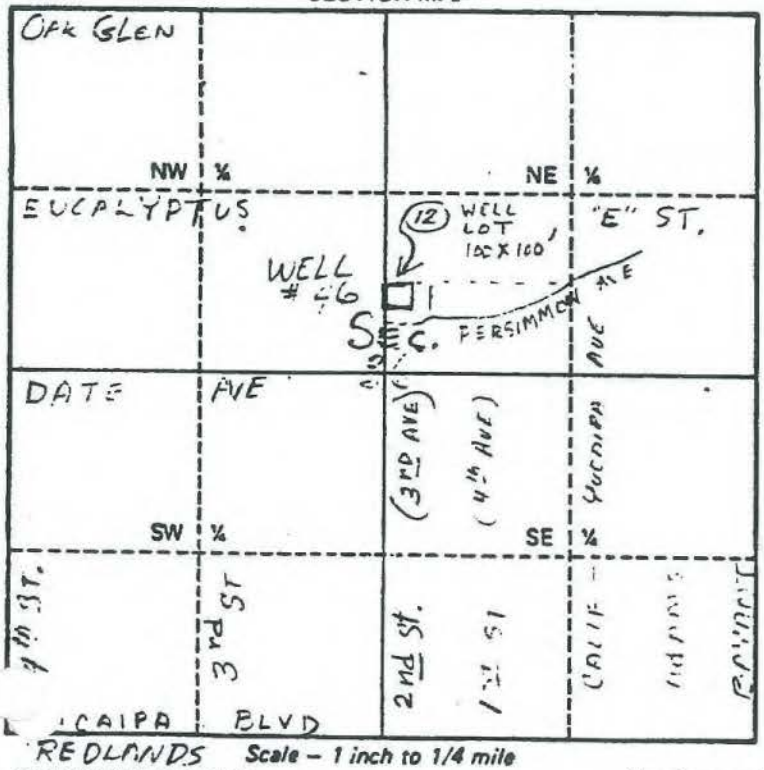
(a) Sketch location of well, name(s) and location of road(s) on section map.

(b) Township 1S N/S Range 1W E/W
Section 31

(c) Assessor's Parcel No. 303-191-12

(d) Solid or liquid waste disposal site within two miles?
☐ Yes ☒ No
Location:

SECTION MAP



Do Not Fill In

Fee Stamp	Date Stamp
DATE 1-8-88	
AMOUNT 252.00	
RECEIPT NO. 21084	
BY:	

PAID

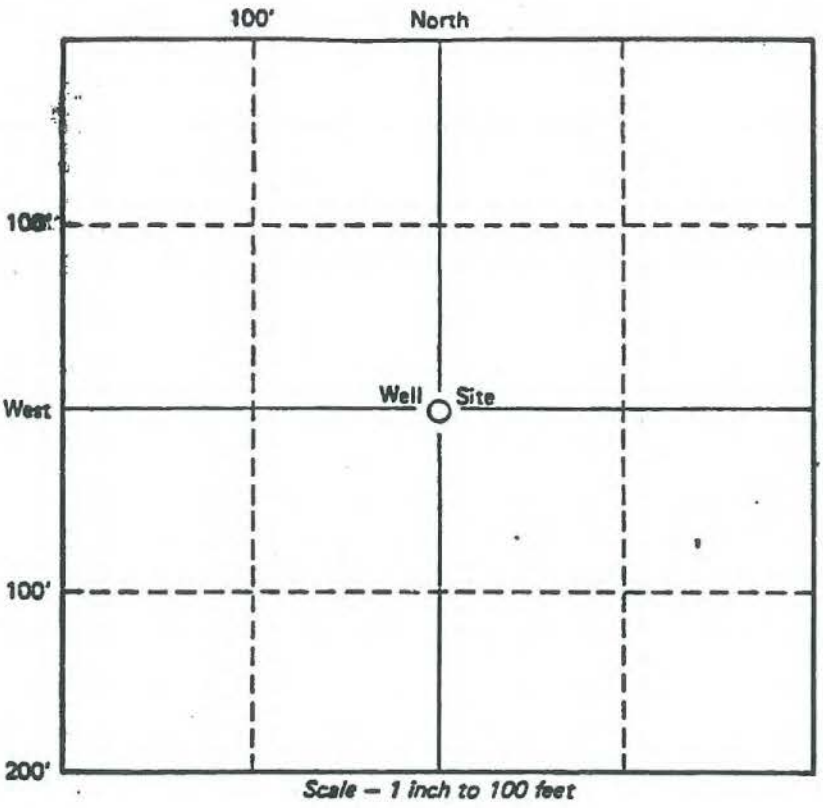
FEB 1988
RECEIVED
YUCAIPA VALLEY WATER DIST.

03-14785-631 Rev. 11/82

Continue on Reverse Side
AS N.A.V.

Var Permit

1 of 2



12. PLOT PLAN:

(a) In perspective to the well site, sketch and label the following items: well lot property lines other wells *(include abandoned wells)*, sewage disposal systems *(sewers, septic tanks, leaching fields, seepage pits, cesspools)*, lakes and ponds, water courses and animals or fowl kept.

(b) Indicate the distance in *feet*, of any of the following which are within 200 ft. of the well site:

Other wells	
Sewers	
Septic tanks	
Leaching fields	
Seepage pits	
Cesspools	
Lakes and ponds	
Water courses	
Animals or fowl kept	

NONE OF THE ABOVE

13. I have read this application and agree to comply with all laws regulating the type of work being performed. The California Labor Code requires Workers' Compensation Insurance as a prerequisite to permit issuance unless the applicant signs the following certificate:

☐ I certify that in the performance of the work for which this permit is issued, I shall not employ any person in any manner so as to become subject to the Workers' Compensation laws of California.

Owner's Signature _____ Date _____

☐ Contractor's Signature Gilbert Romero Date 1/15/88 Reg. No. _____

DISPOSITION OF PERMIT

(Do Not Fill In)

☑ Approved subject to the following:

A. Notify the Department, Environmental (714) 387-4666, twenty-four (24) hours in advance to make an inspection of the following operations:

☑ Prior to sealing of the annular space or filling of the conductor casing.

☐ Verify the depth of the conductor (outer) casing prior to further drilling and installation of the inner casing.

☑ After installation of the surface protective slab and pumping equipment.

☐ During destruction of wells, prior to pouring the sealing material.

B. Submit to the Department within thirty (30) days after completion of work, a copy of:

☑ Water Well Driller's Report ☑ Bacteriological Analysis ☑ Inorganic Chemical Analysis

C. Other _____

DENIED _____

1S/2W-36G1 Well 46 143

TRIPLICATE
Owner's Copy

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
WATER WELL DRILLERS REPORT

Do not fill in
No. 158791

f Intent No.
rmit No. or Date
State Well No.
Other Well No.

(1) OWNER: Name [redacted]
Address [redacted]
City Zip 92399

(2) LOCATION OF WELL (See instructions):
County San Bernaddino Owner's Well Number 46
Well address if different from above
Township 1S Range 2W Section 36
Distance from cities, roads, railroads, fences, etc.
50' E. of 2nd St.
350' N. of Persimmon

WELL LOCATION SKETCH

(3) TYPE OF WORK:
New Well ☒ Deepening ☐
Reconstruction ☐
Reconditioning ☐
Horizontal Well ☐
Destruction ☐ (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:
Domestic ☐
Irrigation ☐
Industrial ☐
Test Well ☐
Stock ☐
Municipal ☒
Other ☐

(5) EQUIPMENT:
Rotary ☒ Reverse ☐
Cable ☐ Air ☐
Other ☐ Bucket ☐

(6) GRAVEL PACK:
Yes ☒ No ☐ Size Brawley 4x8
Diameter of bore 28"
Packed from 0 to 1150 ft.

(7) CASING INSTALLED:
Steel ☒ Plastic ☐ Concrete ☐

(8) PERFORATIONS:
R/M Horizontal Louvre

From ft.	To ft.	Dia. in.	Gage or Wall	From ft.	To ft.	Slot size
0	340	16	.250	1		
340	800	16	.250	340	800	.060
800	1130	16	.312	800	1130	.060

(9) WELL SEAL:
Was surface sanitary seal provided? Yes ☒ No ☐ If yes, to depth 50 ft.
Were strata sealed against pollution? Yes ☐ No ☒ Interval ft.
Method of sealing 32" Conductor Cemented in 40" Bore

(10) WATER LEVELS:
Depth of first water, if known 187' ft.
Standing level after well completion 184' ft.

(11) WELL TESTS:
Was well test made? Yes ☒ No ☐ If yes, by whom? McCalla Bros.
Type of test Pump ☒ Bailer ☐ Air lift ☐
Depth to water at start of test 187 ft. At end of test 321 ft.
Charge 2800 gal/min after 1424 hours Water temperature
Chemical analysis made? Yes ☒ No ☐ If yes, by whom? Y.V.W.D.
Electric log made? Yes ☒ No ☐ If yes, attach copy to this report

(12) WELL LOG: Total depth 1154 ft. Depth of completed well 1150 ft.

from ft.	to ft.	Formation (Describe by color, character, size or material)
0	50	Conductor
50	64	Sand, Gravel & Sm. & Med. Rock
64	73	Fine Sand, Gravel & Clay
73	107	Fine Sand, Gravel & Small Rock
107	123	Fine Sand
123	132	Gravel & Rock
132	140	Gravel & Boulders
140	152	Fine Sand & Gravel
152	166	Cemented Sand & Gravel
166	205	Sand, Sm. & Med. Gravel & Sm. Rock
205	208	White Granite Ledge
208	272	Sand Gravel, Rock & Clay
272	274	Small Boulders
274	279	Sand, Gravel & Rocks
279	282	Boulders
282	292	Sand, Gravel & Rocks
292	298	Rocks & Boulders
298	302	Sand, Gravel & Rocks
302	310	Sand, Clay & Sm. Gravel
310	314	Granite, Boulders
314	328	Sand, Gravel & Clay
328	342	Sand, Gravel, Sm. & Med.
342	354	Sand, Gravel & Boulders
354	372	Sand, Gravel & Clay
372	390	Sand, Gravel & Sm. Rocks
390	414	Sand, Gravel, Sm. Rocks & Clay
414	426	Sm. Boulders & Large Rocks
426	448	Sand, Gravel & Clay
448	450	Sm. Boulders
450	470	Sand, Gravel, Sm. Boulders & Rocks
470	553	Sand, Sm. Gravel
553	586	Sand, Sm. & Med. Gravel
586	596	Sand, Gravel w/Clay
596	604	Fine Sand
604	613	Fine Sand, & Sm. Gravel
613	636	Gravel & Large Rocks
636	640	Rock Boulder
640	644	Boulders

Work started 3-3 19 88 Completed 4-1 19 88

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
SIGNED (Well Driller)
NAME McCalla Bros., Division of Layne Western C
(Person, firm, or corporation) (Typed or printed)
Address 3132 W. 17th St.
City Santa Ana, CA Zip 92703
License No. 510011 Date of this report 8-10-88

WR 188 (REV. 7-76) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

- CONTINUED -

1S/2W-36G1

-243

Ken 46

TRIPLICATE
Owner's Copy

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES

WATER WELL DRILLERS REPORT

Do not fill in
No. 277299

Notice of Intent No. _____
Local Permit No. or Date _____

State Well No. _____
Other Well No. _____

(1) OWNER: Name [redacted]
Address _____
City _____ ZIP _____

(2) LOCATION OF WELL (See instructions):
County _____ Owner's Well Number _____
Well address if different from above _____
Township _____ Range _____ Section _____
Distance from cities, roads, railroads, fences, etc. _____

WELL LOCATION SKETCH

(3) TYPE OF WORK:
New Well ☐ Deepening ☐
Reconstruction ☐
Reconditioning ☐
Horizontal Well ☐
Destruction ☐ (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:
Domestic ☐
Irrigation ☐
Industrial ☐
Test Well ☐
Municipal ☐
Other ☐
(Describe)

(5) EQUIPMENT:
Rotary ☐ Reverse ☐
Cable ☐ Air ☐
Other ☐ Bucket ☐

(6) GRAVEL PACK:
Yes ☐ No ☐ Size
Diameter of bore _____
Packed from _____ ft. to _____ ft.

(7) CASING INSTALLED:
Steel ☐ Plastic ☐ Concrete ☐

From ft.	To ft.	Dia. in.	Gage or Wall

(8) PERFORATIONS:
Type of perforation or size of screen

From ft.	To ft.	Slot size

(9) WELL SEAL:
Was surface sanitary seal provided? Yes ☐ No ☐ If yes, to depth _____ ft.
Were strata sealed against pollution? Yes ☐ No ☐ Interval _____ ft.
Method of sealing _____

(10) WATER LEVELS:
Depth of first water, if known _____ ft.
Standing level after well completion _____ ft.

(11) WELL TESTS:
Was well test made? Yes ☐ No ☐ If yes, by whom? _____
Type of test Pump ☐ Bailer ☐ Air lift ☐
Depth to water at start of test _____ ft. At end of test _____ ft.
Discharge _____ gal/min after _____ hours Water temperature _____
Chemical analysis made? Yes ☐ No ☐ If yes, by whom? _____
Was electric log made Yes ☐ No ☐ If yes, attach copy to this report

(12) WELL LOG: Total depth 1154 ft. Completed depth 1150 ft.
from ft to ft. Formation (Describe by color, character, size or material)

CONTINUED FROM FORM# 158791

644	651	Sand, Sm. & Med. Gravel, Rocks
651	657	Boulders
657	682	Sand
682	704	Sand, Gravel & Rock
704	709	Sand, Sm. & Med. Gravel
709	732	Sand, Sm. Gravel, Sandy Clay
732	747	Gravel & Rocks
747	752	Sand & Clay
752	765	Sand, Gravel & Clay
765	767	Small Boulders
767	773	Sand, Gravel & Clay
773	775	Small Boulders
775	786	Sandy Clay, Sm. Gravel
786	800	Course Sand, Sm. Gravel & Clay
800	806	Large Boulders
806	828	Course Sand, Sm. Gravel & Clay
828	833	Sand, Sm. & Med. Gravel
833	856	Gravel, Sandy Clay
856	894	Sand, Sm. Gravel & Rock
894	897	Boulders
897	921	Sm. & Med. Lrg. Gravel & Rock
921	927	Lrg. Boulders
927	939	Sand, Gravel & Rocks
939	942	Boulders
942	965	Med. Lrg. Gravel & Rocks
965	968	Boulders
968	975	Sm., Med. & Large Gravel & Rocks
975	987	Sand, Sm. & Med. Gravel
987	992	Fine Sand & Sandy Clay
992	1021	Sand, Sm. & Med. Gravel & Rocks
1021	1044	Fine Sand & Sandy Clay
1044	1060	Fine Sand & Sm. Gravel
1060	1064	Boulders
1064	1085	Fine Sand & Small Gravel
1085	1092	Sm. Boulders & Rocks
1092	1098	Sand, Sm. & Med. Gravel & Rocks
1098	1105	Fine Sand, Sm. Gravel & Rocks
1105	1109	Boulders

Work started _____ 19__ Completed _____ 19__

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

Signed _____ (Well Driller)
NAME McCalla Bros., Div. of Layne-Western Co. (Person, firm, or corporation) (Typed or printed)
Address _____
City _____ ZIP _____
License No. _____ Date of this report _____

DWR 188 (REV. 12-86) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

86 96355

VOID
NOT FOR PUBLIC USE
WATER COMMISSION
COPY

1S/2W-36G1 VCM 4th 343

TRIPLICATE
Owner's Copy

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES

WATER WELL DRILLERS REPORT

Do not fill in
No. 277300

Notice of Intent No. _____
Local Permit No. or Date _____

State Well No. _____
Other Well No. _____

(1) OWNER: Name [redacted]
Address _____
City _____ ZIP _____

(2) LOCATION OF WELL (See instructions):
County _____ Owner's Well Number _____
Well address if different from above _____
Township _____ Range _____ Section _____
Distance from cities, roads, railroads, fences, etc. _____

WELL LOCATION SKETCH

(3) TYPE OF WORK:
New Well ☐ Deepening ☐
Reconstruction ☐
Reconditioning ☐
Horizontal Well ☐
Destruction ☐ (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:
Domestic ☐
Irrigation ☐
Industrial ☐
Test Well ☐
Municipal ☐
Other ☐
(Describe)

(5) EQUIPMENT:
Rotary ☐ Reverse ☐
Cable ☐ Air ☐
Other ☐ Bucket ☐

(6) GRAVEL PACK:
Yes ☐ No ☐ Size
Diameter of bore _____
Packed from _____ to _____ ft.

(7) CASING INSTALLED:
Steel ☐ Plastic ☐ Concrete ☐

From ft.	To ft.	Dia. in.	Gage or Wall

(8) PERFORATIONS:
Type of perforation or size of screen

From ft.	To ft.	Slot size

(9) WELL SEAL:
Was surface sanitary seal provided? Yes ☐ No ☐ If yes, to depth _____ ft.
Were strata sealed against pollution? Yes ☐ No ☐ Interval _____ ft.
Method of sealing _____

(10) WATER LEVELS:
Depth of first water, if known _____ ft.
Standing level after well completion _____ ft.

(11) WELL TESTS:
Was well test made? Yes ☐ No ☑ If yes, by whom? _____
Type of test Pump ☐ Bailer ☐ Air lift ☐
Depth to water at start of test _____ ft. At end of test _____ ft.
Discharge _____ gal/min after _____ hours Water temperature _____
Chemical analysis made? Yes ☐ No ☐ If yes, by whom? _____
Was electric log made Yes ☐ No ☐ If yes, attach copy to this report

(12) WELL LOG: Total depth 1154 ft. Completed depth 1150 ft.
from ft. to ft. Formation (Describe by color, character, size or material)

CONTINUED FROM FORM# 277299

1109 - 1110 Sand
1110 - 1118 Drilling (hard) Lrg. Boulders
1118 - 1126 Lrg. Boulder Steel (hard) drilling
1126 - 1135 Sand, Sm. & Med. Gravel & Rocks
1135 - 1150 Sand, Gravel & Clay
1150 - 1154 Bedrock T.D.

Work started _____ 19____ Completed _____ 19____

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

Signed _____ (Well Driller)
NAME McCalla Bros., Division of Layne Western Co.
(Person, firm, or corporation) (Typed or printed)
Address _____
City _____ ZIP _____
License No. _____ Date of this report _____

DWR 188 (REV. 12-86) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM 86 96355

CONFIDENTIAL NOT FOR PUBLIC USE WATER CODE SEC. 13752

QUADRUPLICATE
Use of comply with local requirements

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
WATER WELL DRILLERS REPORT

Do not fill in
No. 157622

Notice of Intent No.
Log Permit No. or Date 12809 Herbert
State Well No. 2S/2W-13P
Other Well No.

(1) OWNER: Name [redacted]
Address [redacted]
City Redlands, CA Zip 92373

(2) LOCATION OF WELL (See instructions):
County Riverside Owner's Well Number
Well address if different from above
Township Range Section
Distance from cities, roads, railroads, fences, etc.

(3) TYPE OF WORK:
New Well ☒ Deepening ☐
Reconstruction ☐
Reconditioning ☐
Horizontal Well ☐
Destruction ☐ (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:
Domestic ☒
Irrigation ☐
Industrial ☐
Test Well ☐
Stock ☐
Municipal ☐
Other ☐

WELL LOCATION SKETCH

(5) EQUIPMENT:
Rotary ☐ Reverse ☐
Cable ☐ Air ☒
Other ☐ Bucket ☐

(6) GRAVEL PACK:
Yes ☐ No ☐ Size
Diameter of bore
Packed from to ft.

(7) CASING INSTALLED:
Steel ☒ Plastic ☒ Concrete ☐

From ft.	To ft.	Dia. in.	Gage or Wall
0	300	4	

(8) PERFORATIONS:
Type of perforation or size of screen

From ft.	To ft.	Slot size
300	100	1/8
100	0	1/8

(9) WELL SEAL:
Was surface sanitary seal provided? Yes ☒ No ☐ If yes, to depth 20 ft.
Were strata sealed against pollution? Yes ☐ No ☐ Interval ft.
Method of sealing driven steel

(10) WATER LEVELS:
Depth of first water, if known 180 ft.
Standing level after well completion ft.

(11) WELL TESTS:
Was well test made? Yes ☒ No ☐ If yes, by whom? JJWP
Type of test Pump ☐ Bailer ☐ Air lift ☐
Depth to water at start of test ft. At end of test ft
Yield 10+ gal/min after hours Water temperature
Chemical analysis made? Yes ☐ No ☒ If yes, by whom?
Electric log made? Yes ☐ No ☒ If yes, attach copy to this report

(12) WELL LOG: Total depth ft. Depth of completed well ft.
from ft. to ft. Formation (Describe by color, character, size or material)

0-20 soft sandy topsoil to sandy& grav
20-40 colored gravel & sand some boulc
40-60 colored gravel & sand
60-80 colored gravel & sand (pit drop)
80-100 colored gravel & some grey clay
100-120 firm grey clay & sand
120-140 brown clay & sand (hard)
140-160 brown clay & sand stone
160-180 brown clay sand stone
180-200 hard clayish((brown) sandstone
200-220 Hard brown clayish sandstone
220-240 hard sandstone & clay
240-260 hard sandstone some clay
260-280 hard sand stone some clay
280-300 hard sand stone some clay

Work started 19 Completed 19

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

SIGNED (Well Driller)
NAME Jack Jones Wells & Pumps (Person, firm, or corporation) (Typed or printed)
Address P. O. Box 2031
City Hemet, CA 92343
License No. 436011 Date of this report 7-9-85

DSSI 172

88 (REV. 7-76) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

SAMPLE NOT FOR RECORDING

well #48

ORIGINAL
File with DWR

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES

WATER WELL DRILLERS REPORT

Do not fill in
No. 341080

Notice of Intent No 243716
Local Permit No. or Date 016174

025/02W-24L025

State Well No. 025/02W-24L01S
Other Well No

(1) OWNER: Name [redacted]
Address [redacted]
City Yucaipa, CA ZIP 92399

(2) LOCATION OF WELL (See instructions):
County Riverside Owner's Well Number 48
Well address if different from above Singleton Road
Township 2S Range 2W Section 24
Distance from cities, roads, railroads, fences, etc.

(3) TYPE OF WORK:
New Well XX Deepening ☐
Reconstruction ☐
Reconditioning ☐
Horizontal Well ☐
Destruction ☐ (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:
Domestic ☐
Irrigation ☐
Industrial ☐
Test Well ☐
Municipal XX
Other ☐ (Describe)

WELL LOCATION SKETCH

(5) EQUIPMENT
Rotary XX Reverse ☐
Cable ☐ Air ☐
Other ☐ Rucket ☐

(6) GRAVEL PACK
Yes XX No ☐ Size 4 x 8
Diameter of bore 26 in.
Packed from 0 ft. to 1180 ft.

(7) CASING INSTALLED
Steel XX Plastic ☐ Concrete ☐

From ft.	To ft.	Dia. in.	Gage or Wall
0	380	16 5/8	5/16
870	930	"	"
1160	1180	"	"

(8) PERFORATIONS
Type of perforation or size of screen

From ft.	To ft.	Slot size
380	870	.060
930	1160	.060

(9) WELL SEAL:
Was surface sanitary seal provided? Yes XX No ☐ If yes, to depth 50 ft.
Were strata sealed against pollution? Yes ☐ No ☐ Interval ft.
Method of sealing concrete grout

(10) WATER LEVELS:
Depth of first water if known ft.
Standing level after well completion ft.

(11) WELL TESTS:
Was well test made? Yes ☐ No ☐ If yes, by whom?
Type of test Pump ☐ Bailer ☐ Air lift ☐
Depth to water at start of test ft. At end of test ft.
Discharge gal/min after hours Water temperature
Chemical analysis made? Yes ☐ No ☐ If yes, by whom?
Was electric log made Yes ☐ No ☐ If yes, attach copy to this report

(12) WELL LOG: Total depth 1230 ft. Completed depth 1180 ft.

from ft.	to	ft.	Formation (Describe by color, character, size or material)
0	-	30	Sand & gravel
30	-	32	Silty clay and sand
32	-	63	Sand & gravel
63	-	115	Silty clay and sand
115	-	129	Sand and gravel
129	-	137	Silty clay with sand
137	-	150	Sand and gravel
150	-	162	Silty clay
162	-	188	Sand and gravel
188	-	201	Sand, gravel and cobbles
201	-	224	Silty clay with sand
224	-	243	Sand, gravel and cobbles
243	-	258	Silty clay with sand
258	-	286	Sand, gravel and cobbles
286	-	321	Silty clay with sand
321	-	338	Sand and gravel
338	-	371	Silty clay with sand
371	-	385	Silty clay (greenish)
385	-	414	Sand and gravel
414	-	451	Sand and gravel (rough)
451	-	508	Sand and gravel
508	-	545	Sand, gravel and silt
545	-	562	Sand, gravel and silty clay
562	-	674	Sand and gravel
674	-	698	Silty clay with sand
698	-	711	Sand and gravel
711	-	757	Silty clay with sand
757	-	770	Sand and gravel
770	-	783	Silty clay
783	-	825	Sand and gravel
825	-	860	Silty clay with interbedded sand layers
860	-	875	Silty clay, more sand
875	-	1132	Silty clay with interbedded sand layers
1132	-	1161	Sand & gravel with silty clay
1161	-	1230	Silty clay with sand

Work started 2-12 19 90 Completed 3-9 19 90

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
Signed Gary S. Hall, Jr. (Well Driller)
NAME Howard Pump, Inc. (Person, firm, or corporation) (Typed or printed)
Address P.O. Box 1249
City Barstow, CA ZIP 92312-1249
License No 356814 Date of this report

DWR 188 (REV. 12-88) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

VOID UNLESS
NOT FOR PUBLIC
WATER USE

MW #48

TRIPLICATE
Owner's Copy

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES

WATER WELL DRILLERS REPORT

Do not fill in
No. 341080

Notice of Intent No. 243716
Local Permit No. or Date 016174

2S/2W - 24L2

State Well No. _____
Other Well No. _____

(1) OWNER: Name [redacted]
Address [redacted]
City Yucaipa, CA ZIP 92399

(2) LOCATION OF WELL (See instructions):
County Riverside Owner's Well Number 48
Well address if different from above Singleton Road
Township 2S Range 2W Section 24
Distance from cities, roads, railroads, fences, etc. _____

WELL LOCATION SKETCH

(3) TYPE OF WORK:
New Well [XX] Deepening [ ]
Reconstruction [ ]
Reconditioning [ ]
Horizontal Well [ ]
Destruction [ ] (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:
Domestic [ ]
Irrigation [ ]
Industrial [ ]
Test Well [ ]
Municipal [XX]
Other [ ]
(Describe)

(5) EQUIPMENT:
Rotary [XX] Reverse [ ]
Cable [ ] Air [ ]
Other [ ] Bucket [ ]

(6) GRAVEL PACK:
Yes [XX] No [ ] Size 4 x 8
Diameter of bore 26"
Packed from 0 to 1180 ft.

(7) CASING INSTALLED:
Steel [XX] Plastic [ ] Concrete [ ]

(8) PERFORATIONS
Type of perforation or size of screen

From ft.	To ft.	Dia. in.	Gage or Wall	From ft.	To ft.	Slot size
0	380	16 5/8	5/16	380	870	.060
870	930	"	"	930	1160	.060
1160	1180	"	"			

(9) WELL SEAL:
Was surface sanitary seal provided? Yes [XX] No [ ] If yes, to depth 50 ft.
Were strata sealed against pollution? Yes [ ] No [ ] Interval _____ ft.
Method of sealing concrete grout

(10) WATER LEVELS:
Depth of first water, if known _____ ft.
Standing level after well completion _____ ft.

(11) WELL TESTS:
Was well test made? Yes [ ] No [ ] If yes, by whom? _____
Type of test Pump [ ] Bailer [ ] Air lift [ ]
Depth to water at start of test _____ ft. At end of test _____ ft.
Discharge _____ gal/min after _____ hours Water temperature _____
Chemical analysis made? Yes [ ] No [ ] If yes, by whom? _____
Was electric log made Yes [ ] No [ ] If yes, attach copy to this report

(12) WELL LOG: Total depth 1230 ft. Completed depth 1180 ft.

from ft.	to	ft.	Formation (Describe by color, character, size or material)
0	–	30	Sand & gravel
30	–	32	Silty clay and sand
32	–	63	Sand & gravel
63	–	115	Silty clay and sand
115	–	129	Sand and gravel
129	–	137	Silty clay with sand
137	–	150	Sand and gravel
150	–	162	Silty clay
162	–	188	Sand and gravel
188	–	201	Sand, gravel and cobbles
201	–	224	Silty clay with sand
224	–	243	Sand, gravel and cobbles
243	–	258	Silty clay with sand
258	–	286	Sand, gravel and cobbles
286	–	321	Silty clay with sand
321	–	338	Sand and gravel
338	–	371	Silty clay with sand
371	–	385	Silty clay (greenish)
385	–	414	Sand and gravel
414	–	451	Sand and gravel (rough)
451	–	508	Sand and gravel
508	–	545	Sand, gravel and silt
545	–	562	Sand, gravel and silty clay
562	–	674	Sand and gravel
674	–	698	Silty clay with sand
698	–	711	Sand and gravel
711	–	757	Silty clay with sand
757	–	770	Sand and gravel
770	–	783	Silty clay
783	–	825	Sand and gravel
825	–	860	Silty clay with interbedded sand layers
860	–	875	Silty clay, more sand
875	–	1132	Silty clay with interbedded sand layers
1132	–	1161	Sand & gravel with silty clay
1161	–	1230	Silty clay with sand

Work started 2-12 19 90 Completed 3-9 19 90

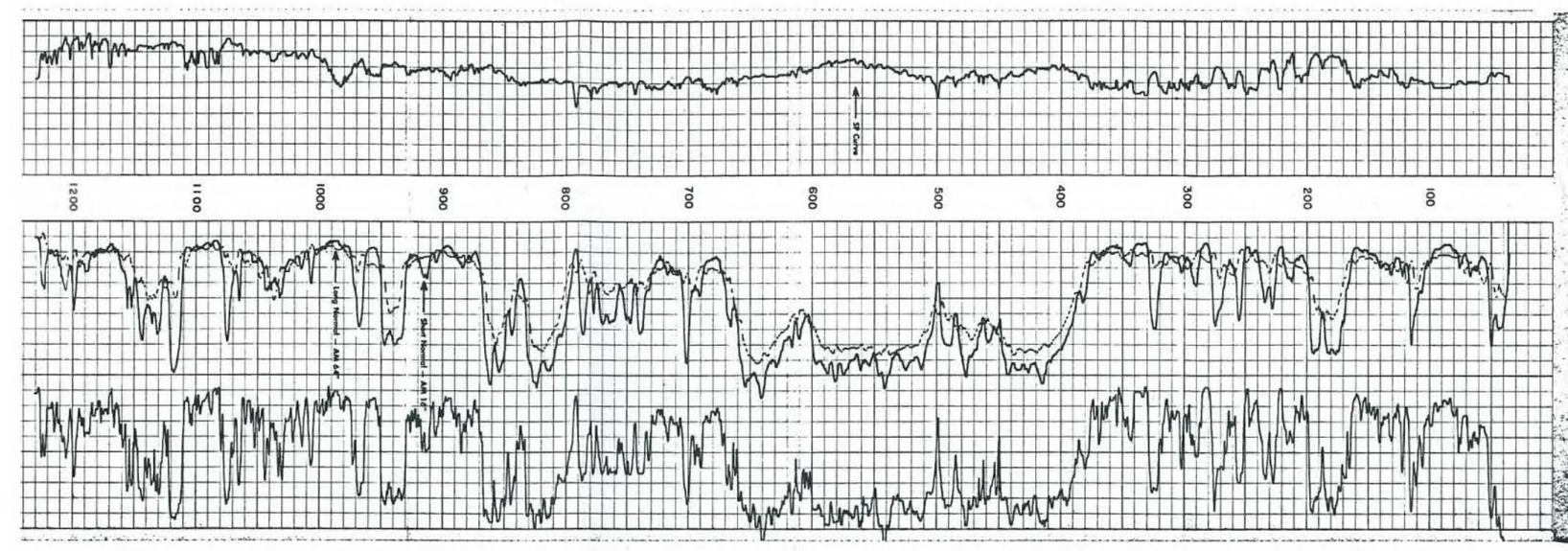
WELL DRILLER'S STATEMENT:

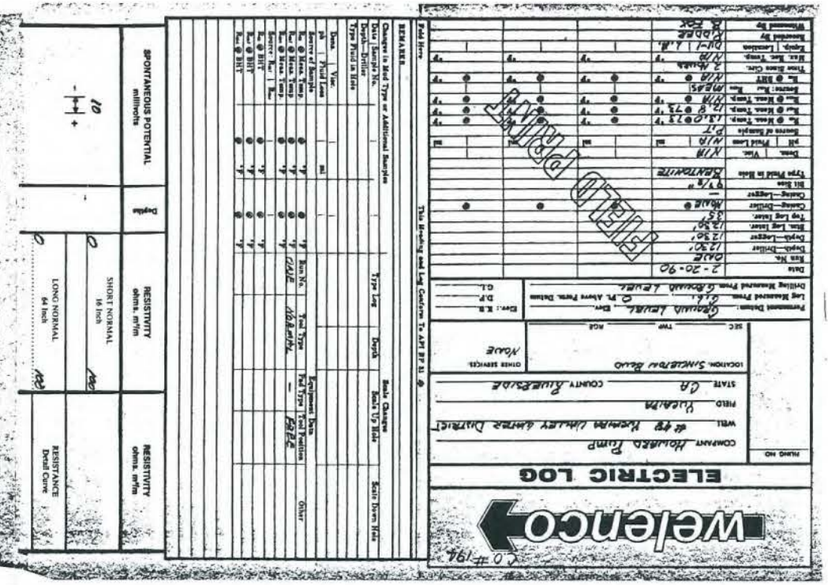
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

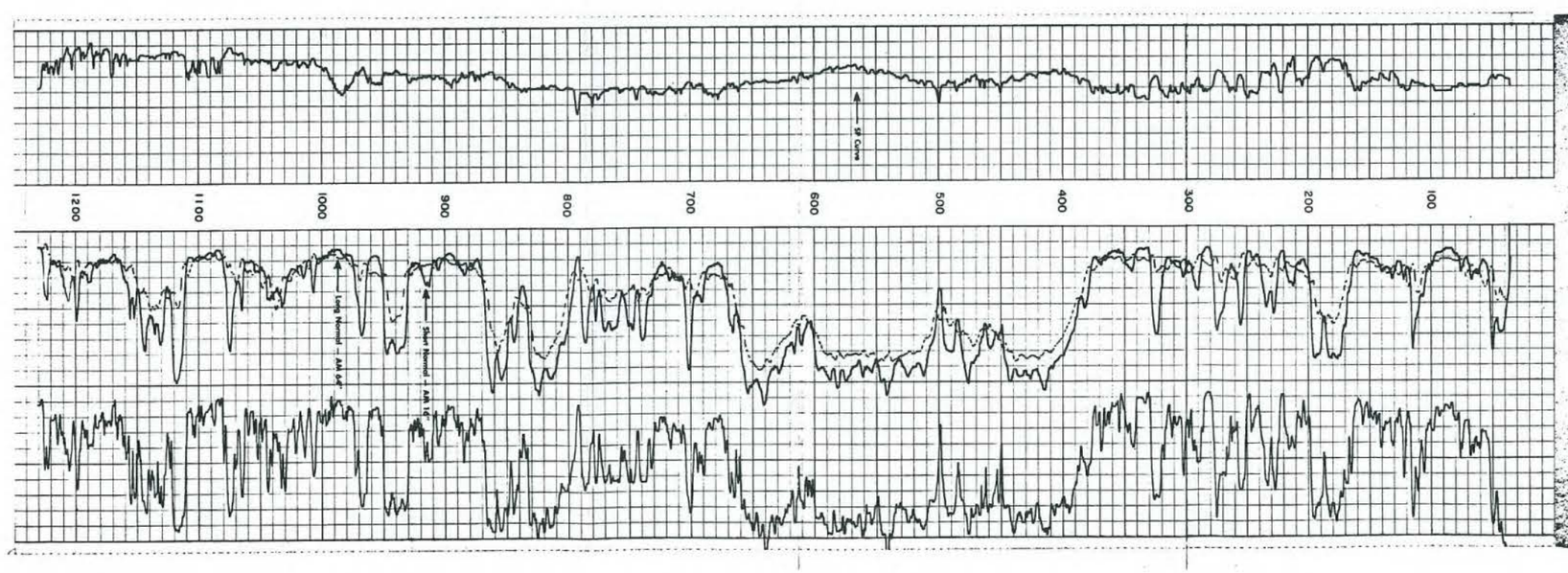
Signed Gary S. Hall, Jr. (Well Driller)
NAME Howard Pump, Inc. (Person, firm, or corporation) (Typed or printed)
Address P.O. Box 1249
City Barstow, CA ZIP 92312-1249
License No. _____ Date of this report _____

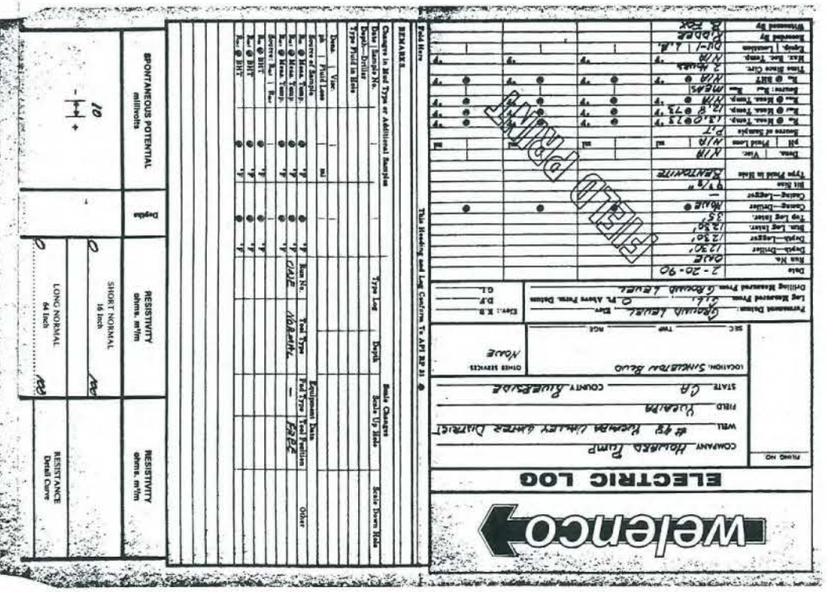
DWR 188 (REV. 12-86) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM 86 96355

COPY
VOID IN TRIPLICATE
NOT FOR PUBLIC USE
WATER CODE SECTION 13752



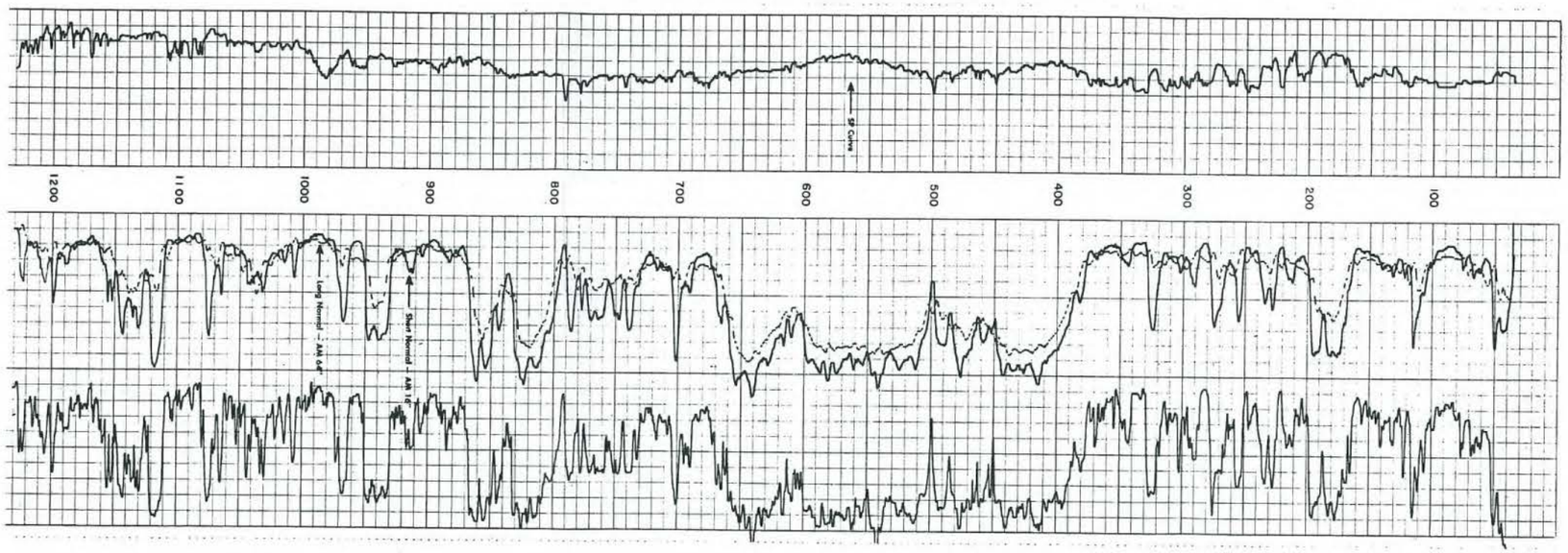


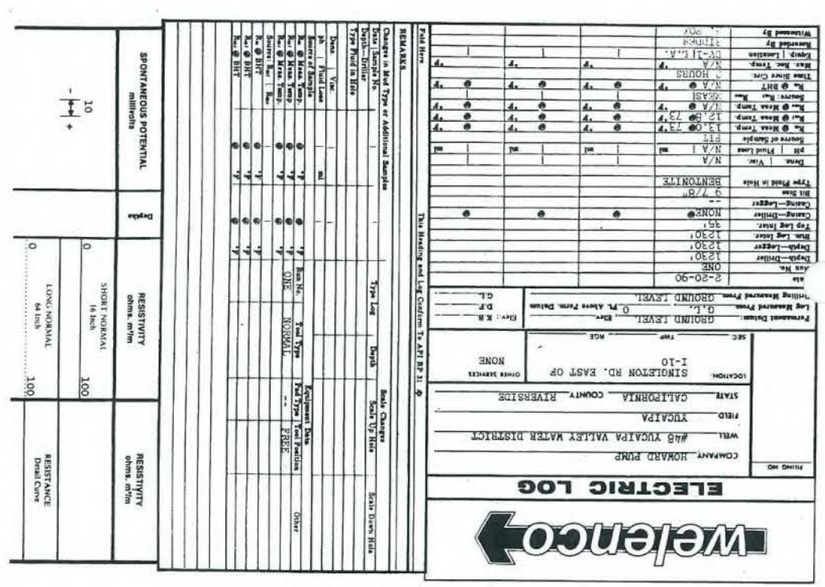




25/2W-24L2

Well 48


SP Curve
1200
1100
1000
900
800
700
600
500
400
300
200
100
Long Normal - AM 16"
Short Normal - AM 16"


SPONTANEOUS POTENTIAL millivolts
Depths
RESISTIVITY ohms. m²/m
LONG NORMAL 64 inch
SHORT NORMAL 16 inch
RESISTANCE Detail Curve
RESISTIVITY ohms. m²/m
Run No.
Tool Type
Equipment Data
Tool Position
Other
Type Log
Depth
Basic Changes
Scale Up Feet
Scale Down Feet
Fold Here
REMARKS
Other Services and Type of Additional Samples
Date and Time Circulation Stopped
Depth—Driller
Type Fluid in Hole
Density
Viscosity
ph
Fluid Loss
Source of Sample
Rm @ Meas. Temp.
Rmf @ Meas. Temp.
Rmc @ Meas. Temp.
Source: Rmf
Rmc
Rm @ BHT
Time Since Circ.
Max. Rec. Temp.
Equip. | Location
Recorded By
Witnessed By
Run No.
Date
Depth—Driller
Depth—Logger
Btm. Log Interv.
Top Log Interv.
Casing—Driller
Casing—Logger
Bit Size
Type Fluid in Hole
Dens | Visc
pH | Fluid Loss
Source of Sample
Rm @ Meas. Temp.
Rmf @ Meas. Temp.
Rmc @ Meas. Temp.
Source: Rmf | Rmc
Rm @ BHT
Time Since Circ.
Max. Rec. Temp.
Equip. | Location
Recorded By
Witnessed By
2-20-90
ONE
3RD
NORMAL
FREE
Other
Type Log
Depth
Basic Changes
Scale Up Feet
Scale Down Feet
This Heading and Log Conform To API RP 31.0
Permanent Datum: GROUND LEVEL
Log Measured From: G.L. 0 Ft. Above Perm. Datum
Drilling Measured From: GROUND LEVEL
Elev.: K.B.
D.F.
G.L.
ELECTRIC LOG
weltenco
COMPANY HOWARD PUMP
WELL #48 YUCAIPA VALLEY WATER DISTRICT
FIELD YUCAIPA
STATE CALIFORNIA COUNTY RIVERSIDE
LOCATION SINDLESTON RD. EAST OF I-10
SEC. TWP. RGE.
OTHER SERVICES NONE
FILING NO.

#49

2S/2W-3J1

DUPLICATE
Driller's Copy

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES

WATER WELL DRILLERS REPORT

Do not fill in
No. 341209

Notice of Intent No. 243729
Local Permit No. or Date
State Well No.
Other Well No.

(1) OWNER: Name [redacted]
Address [redacted]
City Yucaipa, Ca 92399 ZIP

(2) LOCATION OF WELL (See instructions):
County San Bernardino Owner's Well Number #49
Well address if different from above
Township 2S Range 2W Section 3
Distance from cities, roads, railroads, fences, etc.
Parcel # 318-051-43

WELL LOCATION SKETCH

(3) TYPE OF WORK:
New Well ☐ Deepening ☐
Reconstruction ☐
Reconditioning ☐
Horizontal Well ☐
Destruction ☐ (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:
Domestic ☐
Irrigation ☐
Industrial ☐
Test Well ☒
Municipal ☐
Other ☐
(Describe)

(5) EQUIPMENT:
Rotary ☒ Reverse ☐
Cable ☐ Air ☐
Other ☐ Bucket ☐

(6) GRAVEL PACK:
Yes ☐ No ☐ Size
Diameter of bore
Packed from ft. to ft.

(7) CASING INSTALLED:
Steel ☐ Plastic ☐ Concrete ☐

From ft.	To ft.	Dia. in.	Gage or Wall
0	400		
520	670		
830	910		
1160	1130		

(8) PERFORATIONS:
Type of perforation or size of screen

From ft.	To ft.	Slot size
400	622	
670	800	
910	1190	

(9) WELL SEAL:
Was surface sanitary seal provided? Yes ☒ No ☐ If yes, to depth 50 ft.
Were strata sealed against pollution? Yes ☐ No ☐ Interval ft.
Method of sealing

(10) WATER LEVELS:
Depth of first water, if known ft.
Standing level after well completion ft.

(11) WELL TESTS:
Was well test made? Yes ☐ No ☐ If yes, by whom?
Type of test Pump ☒ Bailer ☐ Air lift ☐
Depth to water at start of test ft. At end of test ft.
Discharge gal/min after hours Water temperature
Chemical analysis made? Yes ☒ No ☐ If yes, by whom?
Was electric log made Yes ☐ No ☐ If yes, attach copy to this report

(12) WELL LOG: Total depth ft. Completed depth ft.

from ft.	to ft.	Formation (Describe by color, character, size or material)
0'	390'	7.5hr Sand and gravel & cobbles
390'	439'	22hr Drlg slowed down
439'	459'	22hr Sand & gravel & cobbles w/some clay
459'	470'	22hr Sand & gravel w/some cobbl and silt
470'	473'	22 hr Sand & gravel w/some clay
473'	490'	18hr Fine t. med sand & silt
490	520	18hr Med to course sand & silt
520	535	Looks like chipped rock sharp cobbles
535	615	Med to course sand w/cobbles and silt
615	627	Sand & Gravel w/some clay
627	700	Sand & gravel w/some cobbles & silt
700	765	Med to course sand
765	845	Med to course sand& gravel
854		TD
854	935	Sand, Gravel and silts
935	1198	Med to course sand

Work started 19 Completed 19 90

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief

Signed Mark C. (Well Driller)
NAME Howard Pump Inc. (Person, firm, or corporation) (Typed or printed)
Address PO Box 1249
City Barstow Ca ZIP 92311
License No 231314 Date of this report

DWR 188 (REV. 12-86) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

86 96355

THIS WELL DRILLED PRIOR TO PERMITTING OR PRESITE BY DEHS.

County of San Bernardino — Environmental Public Works Agency
DEPARTMENT OF ENVIRONMENTAL HEALTH SERVICES
385 North Arrowhead Avenue, San Bernardino, CA 92415-0160

DO NOT FILL IN
Permit Number 04129021
Expiration 4-12-91
FF
FA
SN

25/24-3J1

WELL PERMIT
(Please Print)

DO NOT FILL IN CK #9787 $ 275 - 137.50
Date 4-12-90
Amount $ 412.50
Receipt Number 04129021-2
By Howard Pump #19787

1. OWNER: Name [redacted]
Mailing Address [redacted]
City Yucaipa, CA Zip 92399
Site Address Well #49
City Yucaipa Zip
Telephone Number (714) 797-5117

2. WELL DRILLER:
Contractor Howard Pump, Inc. (Name)
Date Start April 1990
Date Complete May 1990

3. WELL USE *(check)*:
☒ Community ☐ Horizontal ☐ Other
☐ Individual ☐ Test
☐ Agricultural ☐ Monitoring
☐ Dairy ☐ Public Water Supply

4. TYPE OF WORK *(check)*:
☒ New ☐ Reconstruction ☐ Destruction

Items 6 through 10 to be estimated for new wells, exact for all other wells.

5. ANNULAR SEAL: Seal Depth 50 ft.
Furnished by: ☐ Owner ☒ Contractor
☐ Driven Conductor Dia. ____ in., Wall (Gage) ____
☒ Sealing Material cement, Thickness 2 in.

6. DEPTH OF WELL *(feet)*:
Proposed 1000 Existing 0
DIAMETER OF BORE *(in.)*: 28"

7. CASING INSTALLED:
☒ Steel ☐ Plastic ☐ Other

From (ft.)	To (ft.)	Dia. (in.)	Wall (Gage)
0	650	14"	

GRAVEL PACK: ☒ Yes ☐ No
From 50 to 1000 ft.

8. PERFORATIONS *(if applicable)*:
From 650 to 1000 ft.

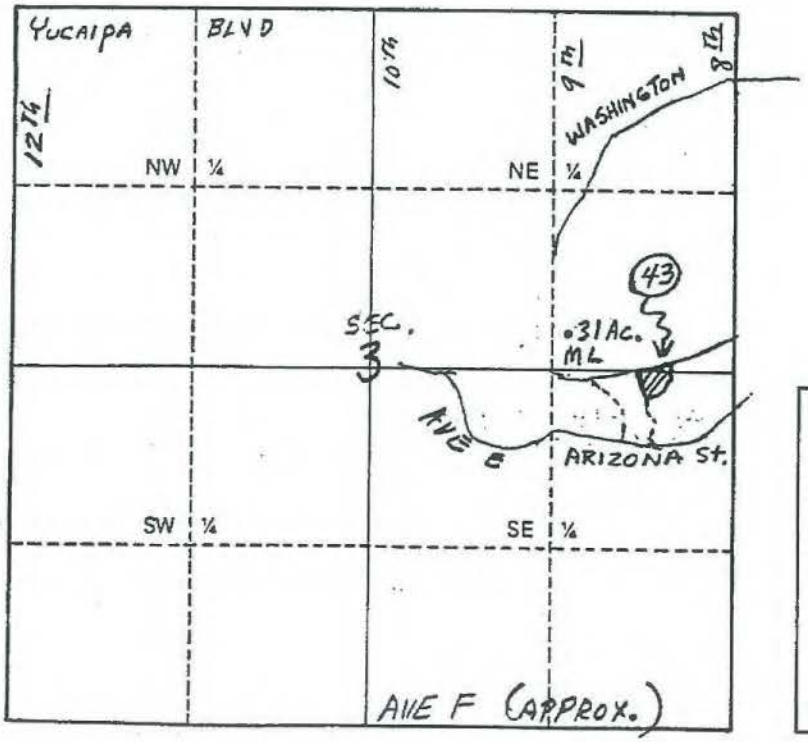
9. SEALED ZONES *(if applicable)*:
From 0 to 50 ft.

10. LOCATION INFORMATION: 31-A6
(a) Township 2S N/S Range 2W E/W
Section 3
(b) Assessor's Parcel No. 318-051-43
(c) Solid or liquid waste disposal site within two miles?
☐ Yes ☒ No
Location

(Continue on reverse side)

NO M.A.V.

SECTION MAP — DO NOT FILL IN *Scale: 1 inch = ¼ mile*



DO NOT FILL IN
Seal
Cap
Check Valve
Electricals
Slab
Tag
Building and Safety Notified

Well 49
25/2W-3J1

welenco

ELECTRIC LOG

FILING NO.

COMPANY HOWARD PUMP
WELL #49 (RUN TWO)
FIELD YUCAIPA
STATE CA COUNTY SAN BERNARDINO
LOCATION: @ 7TH AVE & AVE E.
OTHER SERVICES: E-LOG
SEC. TWP. RGE.
Permanent Datum: GROUND LEVEL Elev.
Log Measured From: GROUND LEVEL 0 Ft. Above Perm. Datum
Drilling Measured From: GROUND LEVEL
Elev.: K.B.
D.F.
G.L.

	4-6-90				
Depth—Driller	1178'				
Depth—Logger	1174'				
Btm. Log Inter.	1173'				
Top Log Inter.	30'				
Casing—Driller	NONE @	@	@	@	@
Casing—Logger	—				
Bit Size	7 7/8"				
Type Fluid in Hole	BENTONITE				
Dens. / Visc.	N/A				
pH / Fluid Loss	N/A /	ml	/	ml	/ ml
Source of Sample	S.T.				
Rm @ Meas. Temp.	11.8 @65 °F	@ °F	@ °F	@ °F	@ °F
Rmf @ Meas. Temp.	11.0 @66 °F	@ °F	@ °F	@ °F	@ °F
Rmc @ Meas. Temp.	N/A @ °F	@ °F	@ °F	@ °F	@ °F
Source: Rmf / Rmc	MEAS /				
Rm @ BHT	N/A @ °F	@ °F	@ °F	@ °F	@ °F
Time Since Circ.	2 HOURS				
Max. Rec. Temp.	N/A °F	°F	°F	°F	°F
Equip. / Location	DV-1 / L.A.				
Recorded By	RIDDER				
Witnessed By					

FIELD PRINT

This Reading and Log Conforms To API RP 31 @

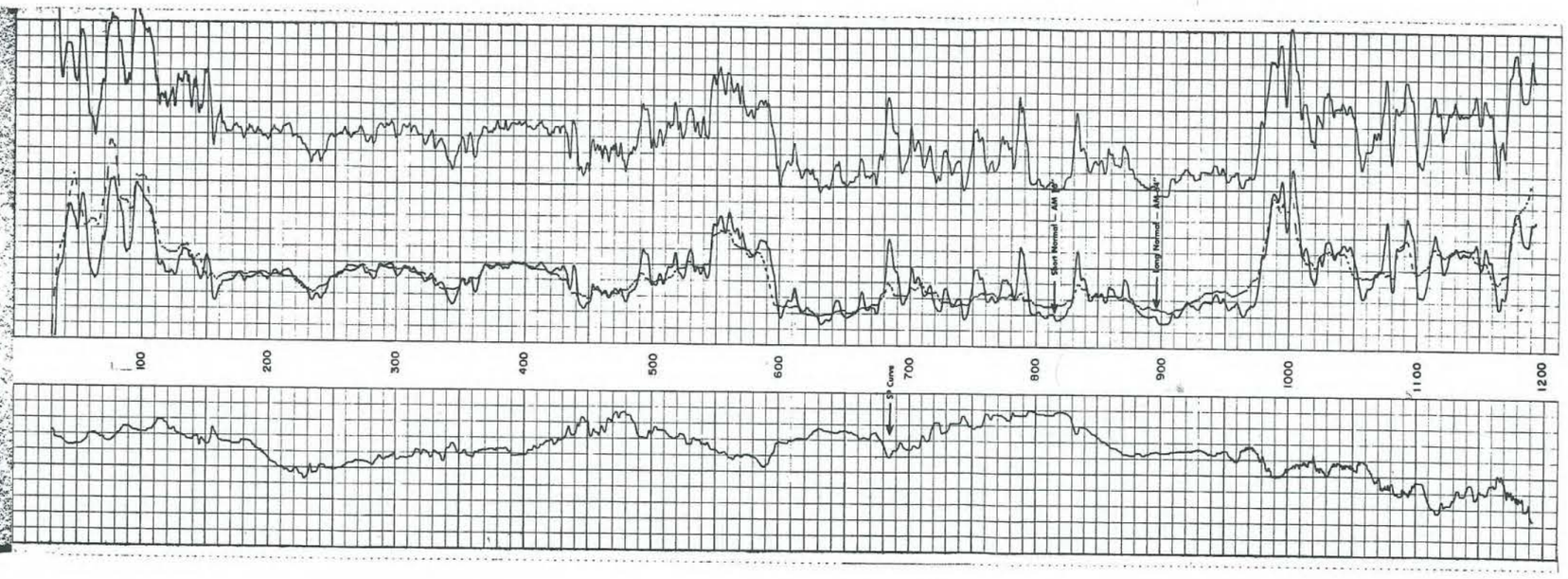
Run No. / Bit No. / Depth / Type Log / Scale Up / Scale Down Hole / Hole Size / Casing / Wt. / Depth / Type Fluid in Hole / Density / Viscosity / Fluid Loss / ml / Source of Sample / Rm @ Meas. Temp. / Rmf @ Meas. Temp. / Rmc @ Meas. Temp. / Source: Rmf / Rmc / Rm @ BHT / Time Since Circ. / Max. Rec. Temp. / Equip. / Location / Recorded By / Witnessed By

Equipment Data: Tool Type / Tool Position / Other

REMARKS

Charges in Bed Type or Additional Samples
Date | Sample No.
Depth—Driller
Type Fluid in Hole
Dens. / Visc.
pH / Fluid Loss / ml
Source of Sample
Rm @ Meas. Temp.
Rmf @ Meas. Temp.
Rmc @ Meas. Temp.
Source: Rmf / Rmc
Rm @ BHT
Time Since Circ.
Max. Rec. Temp.
Equip. / Location
Recorded By
Witnessed By

RESISTIVITY ohms. m²/m
RESISTANCE Detail Curve
SHORT NORMAL 16 Inch
LONG NORMAL 64 Inch
Depths
SPONTANEOUS POTENTIAL millivolts



welenco

ELECTRIC LOG

FILING NO

COMPANY HOWARD PUMP

WELL #49

FIELD YUCAIPA

STATE CALIFORNIA COUNTY SAN BERNARDINO

LOCATION: 8th AVE. @ AVE E

OTHER SERVICES: NONE

SEC. TWP. RGE.

Permanent Datum: G.L. Elev. Elev.: K.B.

Log Measured From G.L. 0 Ft. Above Perm. Datum D.F.

Drilling Measured From G.L. G.L.

Date	3-30-90			
Run No.	ONE			
Depth—Driller	854'			
Depth—Logger	853'			
Btm. Log Inter.	850'			
Top Log Inter.	100'			
Casing—Driller	NONE @	@	@	@
Casing—Logger	-			
Bit Size	9 7/8"			
Type Fluid in Hole	BENTONITE			
Dens. | Visc.	N/A			
pH | Fluid Loss	N/A | ml	ml	ml	ml
Source of Sample	PIT			
R_m @ Meas. Temp.	11.0 @ 70 °F	@ °F	@ °F	@ °F
R_{mf} @ Meas. Temp.	11.2 @ 71 °F	@ °F	@ °F	@ °F
R_{mc} @ Meas. Temp.	N/A @ °F	@ °F	@ °F	@ °F
Source: R_{mf} R_{mc}	MEAS |			
R_m @ BHT	N/A @ °F	@ °F	@ °F	@ °F
Time Since Circ.	0 HOURS			
Max. Rec. Temp.	N/A °F	°F	°F	°F
Equip. | Location	OV-1 | LA			
Recorded By	RIDDER			
Witnessed By				

This Reading and Log Conform To API RP 31.

Fold Here

Scale Changes: Type Log | Depth | Scale Up Hole | Scale Down Hole

Equipment Data: Run No. | Tool Type | Pad Type | Tool Position | Other

Run No.	Tool Type	Pad Type	Tool Position	Other
ONE	NORMAL		FREE	

REMARKS

Changes in Mud Type or Additional Samples: Date | Sample No. | Depth—Driller | Type Fluid in Hole | Dens. | Visc. | pH | Fluid Loss | Source of Sample | R_m @ Meas. Temp. | R_{mf} @ Meas. Temp. | R_{mc} @ Meas. Temp. | Source: R_{mf} | R_{mc} | R_m @ BHT | R_{mf} @ BHT | R_{mc} @ BHT

RESISTIVITY ohms. m²/m

SHORT NORMAL 16 Inch: 0 — 200

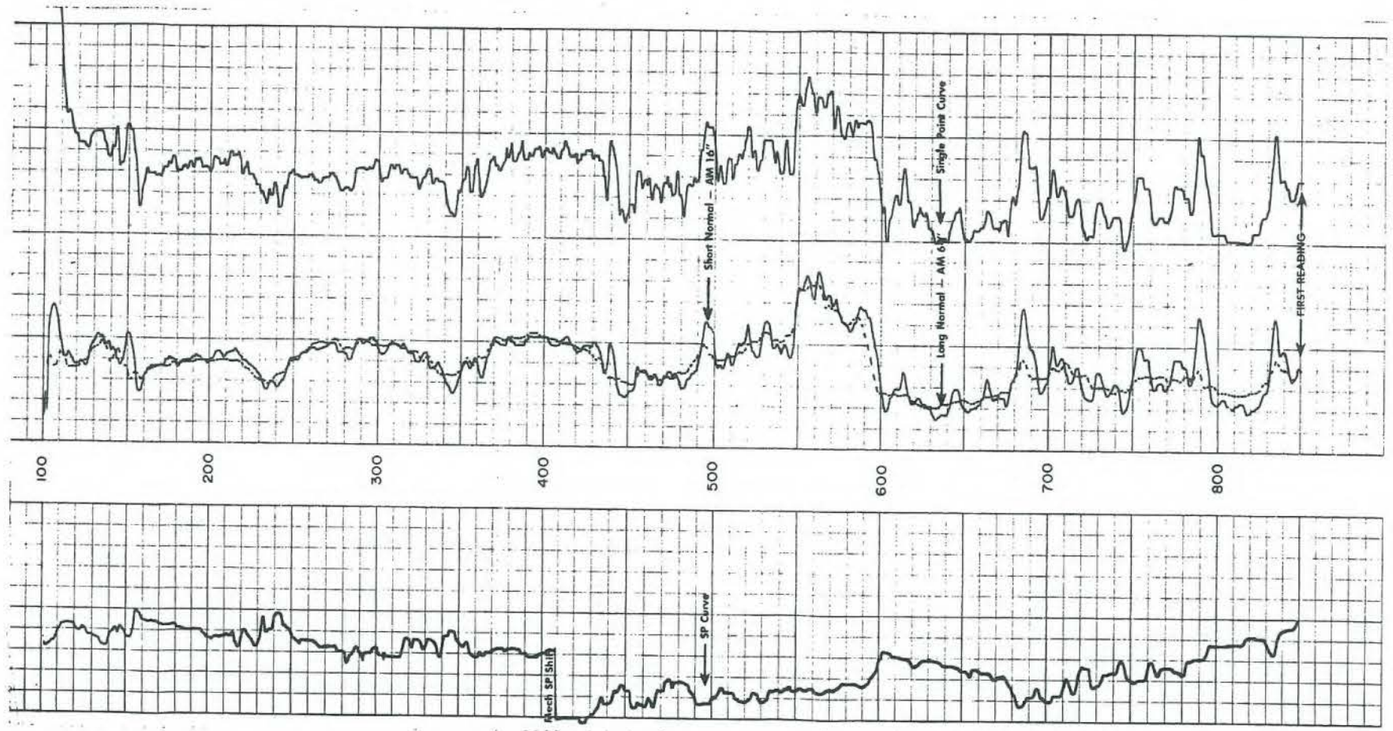
RESISTIVITY ohms. m²/m

LONG NORMAL 64 Inch: 0 — 200

RESISTANCE Detail Curve

Depths

SPONTANEOUS POTENTIAL millivolts: -5 — 0 — +



25/2W-1Q1 - Notes say changed to 25/2W-1K1 in 2003 Yucaipa well database = 25/2W-1Q1 #50

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES

Copy

Do not fill in

WATER WELL DRILLERS REPORT

No. 341098

Notice of Intent No. 249930
Local Permit No. or Date

State Well No.
Other Well No.

(1) OWNER: Name [redacted]
Address [redacted]
City [redacted] ZIP 92399

(2) LOCATION OF WELL (See instructions):
County San Bernardino Owner's Well Number #50
Well address if different from above
Township Range Section
Distance from cities, roads, railroads, fences, etc.
Parcel # 310-132-25

(3) TYPE OF WORK:
New Well XX Deepening ☐
Reconstruction ☐
Reconditioning ☐
Horizontal Well ☐
Destruction ☐ (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:
Domestic ☐
Irrigation ☐
Industrial ☐
Test Well XX
Municipal ☐
Other ☐

WELL LOCATION SKETCH

(5) EQUIPMENT:
Rotary XX Reverse ☐
Cable ☐ Air ☐
Other ☐ Bucket ☐

(6) GRAVEL PACK:
Yes ☐ No ☐ Size
Diameter of bore
Packed from ft. to ft.

(7) CASING INSTALLED:
Steel XX Plastic ☐ Concrete ☐

From ft.	To ft.	Dia. in.	Gage or Wall
0	330	6 5/8	.134

(8) PERFORATIONS:
Type of perforation or size of screen

From ft.	To ft.	Slot size
330	358	.080

(9) WELL SEAL:
Was surface sanitary seal provided? Yes X No ☐ If yes, to depth 20' ft.
Were strata sealed against pollution? Yes ☐ No ☐ Interval ft.
Method of sealing Hole plug

(10) WATER LEVELS:
Depth of first water, if known ft.
Standing level after well completion ft.

(11) WELL TESTS:
Was well test made? Yes ☐ No ☐ If yes, by whom?
Type of test Pump ☐ Bailer ☐ Air lift ☐
Depth to water at start of test ft. At end of test ft.
Discharge gal/min after hours Water temperature
Chemical analysis made? Yes ☐ No ☐ If yes, by whom?
Was electric log made? Yes X No ☐ If yes, attach copy to this report

(12) WELL LOG: Total depth ft. Completed depth ft.

from ft.	to ft.	Formation (Describe by color, character, size or material)
0	5	Clay (brown silty)
5	80	Sand and gravel
80	270	Sand gravel & cobbles
270	291	Sand, gravel & boulders
291	300	Silty clay and asand
300	334	Sand gravel and boulders
334	341	Silty clay and sand
341	372	Sand & gravel and cobbles
372	388	Dark green rock (hard)
388	420	Sand & gravel and cobbles
420	430	Sand & gravel & cobbles
430	450	Granite
450	451	Granite w/silts

Work started 4-9 19 90 Completed 4-13 19 90

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

Signed Gary Hall (Well Driller)
NAME Howard Pump, Inc. (Person, firm, or corporation) (Typed or printed)
Address PO Box 1219
City Barstow, Ca ZIP 92311
License No. 291311 Date of this report

DWR 188 (REV. 12-8) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM 86 96355

COPY ONLY NOT FOR PUBLIC DISCLOSURE WATER CODE SECTION 13752

2S/2W-10Q1

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES

WATER WELL DRILLERS REPORT

Do not fill in
No. 341098

Notice of Intent No. 249930
Local Permit No. or Date

State Well No.
Other Well No.

(1) OWNER: Name [redacted]
Address [redacted]
City [redacted] ZIP 92399

(2) LOCATION OF WELL (See instructions):
County San Bernardino Owner's Well Number #50
Well address if different from above
Township Range Section
Distance from cities, roads, railroads, fences, etc.
Parcel # 310-132-25

(3) TYPE OF WORK:
New Well XX Deepening ☐
Reconstruction ☐
Reconditioning ☐
Horizontal Well ☐
Destruction ☐ (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:
Domestic ☐
Irrigation ☐
Industrial ☐
Test Well XX
Municipal ☐
Other ☐
(Describe)

WELL LOCATION SKETCH

(5) EQUIPMENT:
Rotary XX Reverse ☐
Cable ☐ Air ☐
Other ☐ Bucket ☐

(6) GRAVEL PACK:
Yes ☐ No ☐ Size
Diameter of bore
Packed from ft. to ft.

(7) CASING INSTALLED:
Steel XX Plastic ☐ Concrete ☐

From ft.	To ft.	Dia. in.	Gage or Wall
0	330	6 5/8	.134

(8) PERFORATIONS:
Type of perforation or size of screen

From ft.	To ft.	Slot size
330	350	.080

(9) WELL SEAL:
Was surface sanitary seal provided? Yes ☒ No ☐ If yes, to depth 20' ft.
Were strata sealed against pollution? Yes ☐ No ☐ Interval ft.
Method of sealing Hole plug

(10) WATER LEVELS:
Depth of first water, if known ft.
Standing level after well completion ft.

(11) WELL TESTS:
Was well test made? Yes ☐ No ☐ If yes, by whom?
Type of test Pump ☐ Bailer ☐ Air lift ☐
Depth to water at start of test ft. At end of test ft.
Discharge gal/min after hours Water temperature
Chemical analysis made? Yes ☐ No ☐ If yes, by whom?
Was electric log made Yes ☒ No ☐ If yes, attach copy to this report

(12) WELL LOG: Total depth ft. Completed depth ft.

from ft.	to ft.	Formation (Describe by color, character, size or material)
0	5	Clay (brown silty)
5	80	Sand and gravel
80	270	Sand gravel & cobbles
270	291	Sand, gravel & boulders
291	300	Silty clay and asand
300	334	Sand gravel and boulders
334	341	Silty clay and sand
341	372	Sand & gravel and cobbles
372	388	Dark green rock (hard)
388	420	Sand & gravel and cobbles
420	430	Sand & gravel & cobbles
430	450	Granite
450	461	Granite w/silts

Work started 4-9 19 90 Completed 4-13 19 90

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
Signed Gary Hall (Well Driller)
NAME Howard Pump, Inc. (Person, firm, or corporation) (Typed or printed)
Address PO Box 1219
City Barstow, Ca ZIP 92311
License No. 281214 Date of this report

DWR 188 (REV. 12-86) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM 84 96355

COPY
VOID UNTIL
NOT FOR PUBLIC USE
WATER CODE SEC 13752

ORIGINAL
le with DWR

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES

WATER WELL DRILLERS REPORT

Do not fill in
No. 341098

Notice of Intent No. 249930 025/02W-01K0015 (1st)
State Well No. ~~025/02W01K001~~
Local Permit No. or Date
Other Well No.

(1) OWNER: Name [redacted]
Address [redacted]
City [redacted] ZIP 92399

(2) LOCATION OF WELL (See instructions):
County San Bernardino Owner's Well Number #50
Well address if different from above
Township 2S Range 2W Section 1
Distance from cities, roads, railroads, fences, etc.
Parcel # 319-132-25

changed 3/28/03 plate in K 01K001 gg

(3) TYPE OF WORK:
New Well XX Deepening ☐
Reconstruction ☐
Reconditioning ☐
Horizontal Well ☐
Destruction ☐ (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:
Domestic ☑
Irrigation ☐
Industrial ☐
Test Well XX
Municipal ☐
Other ☐
(Describe)

WELL LOCATION SKETCH

(5) EQUIPMENT:
Rotary XX Reverse ☐
Cable ☐ Air ☐
Other ☐ Bucket ☐

(6) GRAVEL PACK:
Yes ☐ No ☑ Size
Diameter of bore
Packed from ft. to ft.

(7) CASING INSTALLED:
Steel XX Plastic ☐ Concrete ☐

From ft.	To ft.	Dia in.	Gage or Wall
0	330	6-5/8	.134

(8) PERFORATIONS:
Type of perforation or size of screen

From ft.	To ft.	Slot size
330	350	.080

(9) WELL SEAL:
Was surface sanitary seal provided? Yes ☒ No ☐ If yes, to depth 20' ft.
Were strata sealed against pollution? Yes ☐ No ☐ Interval ft.
Method of sealing Hole plug

(10) WATER LEVELS:
Depth of first water, if known ft.
Standing level after well completion ft.

(11) WELL TESTS:
Was well test made? Yes ☐ No ☐ If yes, by whom?
Type of test Pump ☐ Bailer ☐ Air lift ☐
Depth to water at start of test ft. At end of test ft.
Discharge gal/min after hours Water temperature
Chemical analysis made? Yes ☐ No ☐ If yes, by whom?
Was electric log made Yes ☒ No ☐ If yes, attach copy to this report

(12) WELL LOG: Total depth 481 ft. Completed depth 350 ft.

from ft.	to ft.	Formation (Describe by color, character, size or material)
0	5	Clay (brown silty)
5	80	Sand and gravel
80	270	Sand gravel & cobbles
270	291	Sand, gravel & boulders
291	300	Silty clay and sand
300	334	Sand gravel and boulders
334	341	Silty clay and sand
341	372	Sand & gravel and cobbles
372	388	Dark green rock (hard)
388	420	Sand - gravel and cobbles
420	450	Sand & gravel & cobbles
420	450	Granite
450	481	Granite w/silts

Work started 4-9 19 98 Completed 4-13 19 98

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

Signed Gary Hall
NAME Howard Pump, Inc. (Well Driller)
(Person, firm, or corporation) (Typed or printed)
Address PO Box 1249
City Barstow, Ca ZIP 92311
License No. 281814 Date of this report

DWR 188 (REV. 12-86) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM 86 94355

1S/2W -29C1

ORIGINAL
File with DWR

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES

WATER WELL DRILLERS REPORT

Do not fill in

No. 341364

Notice of Intent No. 243729
Local Permit No. or Date 04129021

State Well No.
Other Well No.

(1) OWNER: Name [redacted]
Address [redacted]
City [redacted] ZIP 92399

(2) LOCATION OF WELL (See instructions):
County San Bernardino Owner's Well Number #51
Well address if different from above
Township Range Section
Distance from cities, roads, railroads, fences, etc.

WELL LOCATION SKETCH

(3) TYPE OF WORK:
New Well ☐ Deepening ☐
Reconstruction ☐
Reconditioning ☐
Horizontal Well ☐
Destruction ☐ (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:
Domestic ☐
Irrigation ☐
Industrial ☐
Test Well ☐
Municipal ☐
Other ☐
(Describe)

(5) EQUIPMENT:
Rotary ☐ Reverse ☐
Cable ☐ Air ☐
Other ☐ Bucket ☐

(6) GRAVEL PACK:
Yes ☐ No ☑ Size
Diameter of bore
Packed from to ft.

(7) CASING INSTALLED:
Steel ☐ Plastic ☐ Concrete ☐

From ft.	To ft.	Dia. in.	Gage or Wall

(8) PERFORATIONS:
Type of perforation or size of screen

From ft.	To ft.	Slot size

(9) WELL SEAL:
Was surface sanitary seal provided? Yes ☐ No ☐ If yes, to depth ft.
Were strata sealed against pollution? Yes ☐ No ☐ Interval ft.
Method of sealing

(10) WATER LEVELS:
Depth of first water, if known ft.
Standing level after well completion ft.

(11) WELL TESTS:
Was well test made? Yes ☐ No ☐ If yes, by whom?
Type of test Pump ☐ Bailer ☐ Air lift ☐
Depth to water at start of test ft. At end of test ft.
Discharge gal/min after hours Water temperature
Chemical analysis made? Yes ☐ No ☐ If yes, by whom?
Was electric log made Yes ☐ No ☐ If yes, attach copy to this report

(12) WELL LOG: Total depth ft. Completed depth ft.

from ft.	to ft.	Formation (Describe by color, character, size or material)
0	18	Clay
18	45	Sand, Gravel and Cobbles
45	65	Clay w/sand
65	84	Sand, gravel and cobbles
84	110	Clay w/sand
110	291	Sand, gravel and cobbles
291	298	Clay w/sand and gravel
298	345	Sand and Gravel
345	360	Sand and gravel w/ clay
360	482	Sand and gravel and cobbles
482	490	Sand and gravel (green)
490	600	Sand and gravel
600	610	Sand and gravel w/sharp chips of rock. very hard DRLG
610	683	Very hard Rock CHips No sand or clay (granite)
	683	T D

Work started 4-23 19 90 Completed 19

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

Signed (Well Driller)
NAME Howard Pump, Inc (Person, firm, or corporation) (Typed or printed)
Address P.O. Box 1249 Barstow, Ca 92312-1249
City ZIP
License No. 281814 Date of this report

DWR 188 (REV. 12-86) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

86 96355

VOID UNLESS ORIGINAL
NOT FOR CONSTRUCTION
WATER CODE SECTION 13751

1S/2W-24C1

#51

TRIPLICATE
Owner's Copy

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES

WATER WELL DRILLERS REPORT

Do not fill in
No. 341364

Notice of Intent No. 243729
Local Permit No. or Date 04129021

State Well No. _____
Other Well No. _____

(1) OWNER: Name [redacted]
Address [redacted]
City [redacted] ZIP 92399

(2) LOCATION OF WELL (See instructions):
County San Bernardino Owner's Well Number #51
Well address if different from above Kadota & Bryant
Township 1S Range 2W Section 24
Distance from cities, roads, railroads, fences, etc.

302-311-04

WELL LOCATION SKETCH

(3) TYPE OF WORK:
New Well ☒ Deepening ☐
Reconstruction ☐
Reconditioning ☐
Horizontal Well ☐
Destruction ☐ (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:
Domestic ☐
Irrigation ☐
Industrial ☐
Test Well ☐
Municipal ☒
Other ☐
(Describe)

(5) EQUIPMENT:
Rotary ☒ Reverse ☐
Cable ☐ Air ☐
Other ☐ Bucket ☐

(6) GRAVEL PACK:
Yes ☒ No ☐ Size All Amer. Rancho
Diameter of bore 30"
Packed from 0 ft. to XXX 610 ft.

(7) CASING INSTALLED:
Steel ☒ Plastic ☐ Concrete ☐

From ft.	To ft.	Dia. in.	Gage or Wall
0	230	12"	.
590	610		

(8) PERFORATIONS:
Type of perforation or size of screen

From ft.	To ft.	Slot size
230	590	.080

(9) WELL SEAL:
Was surface sanitary seal provided? Yes ☒ No ☐ If yes, to depth 50 ft.
Were strata sealed against pollution? Yes ☐ No ☒ Interval _____ ft
Method of sealing 30" conductor cemented in place

(10) WATER LEVELS:
Depth of first water, if known 82.1 ft.
Standing level after well completion 90.1 ft.

(11) WELL TESTS:
Was well test made? Yes ☒ No ☐ If yes, by whom? HPI
Type of test Pump ☒ Bailer ☐ Air lift ☐
Depth to water at start of test 82.1 At end of test 90.1 ft
Discharge 1500 gal/min after 65 hours Water temperature
Chemical analysis made? Yes ☐ No ☒ If yes, by whom?
Was electric log made Yes ☒ No ☐ If yes, attach copy to this report

(12) WELL LOG: Total depth _____ ft. Completed depth _____ ft.

from ft.	to ft.	Formation (Describe by color, character, size or material)
0	18	Clay
18	45	Sand, Gravel and Cobbles
45	55	Clay w/sand
55	84	Sand, gravel and cobbles
84	110	Clay w/sand
110	291	Sand, gravel and cobbles
291	295	Clay w/sand and gravel
295	345	Sand and Gravel
345	350	Sand and gravel w/ clay
350	482	Sand and gravel and cobbles
482	490	Sand and gravel (green)
490	500	Sand and gravel
500	515	Sand and gravel w/sharp chips of rock. very hard DRLG
515	633	Very hard Rock CHips No sand or clay (granite)
	633	T D

Work started 1 19 91 Completed _____ 19 _____

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
Signed Cary Hall (Well Driller)
NAME Howard Pump, Inc (Person, firm, or corporation) (Typed or printed)
Address P.O. Box 1249 Barstow, Ca 92312-1249
City _____ ZIP _____
License No. 231914 Date of this report 1-22-91

DWR 188 (REV. 12-86) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM 86 96355

VOID PENDING PUBLIC USE WATER CODE 13752

Yucaipa Valley Water District

12770 Second Street • P. O. Box 730 • Yucaipa, California 92399-0730
(909) 797-5117 • • E-mail: yvwd@eee.org

FAX COVER SHEET
YVWD ENGINEERING FAX NO.: 909-797-5937

Date: 02-05-99

Number of Pages Including Cover 6

To: MR. TONG
Geo Science

FAX NO.: (909) 920-0403

FROM: B. Antonl / Ray

REGARDING: Well #53 (YVWD)
Ray - Asked Me to Send you E-Log & Driller's Log

Carefully account for the number of pages faxed to you. If there are any missing or illegible pages, please notify the sender immediately.

Directors and Officers

TOM SHALHOUB Division 1 | STEVE COPELAN Division 2 | DAVID LESSER Division 3 | CONRAD NELSON Division 4 | HANK WOCHHOLZ Division 5 | JOSEPH B. ZOBA General Manager and Secretary

TRIPLICATE
Owner's Copy
Page 1 of 1

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet
No. 477777

DWR USE ONLY — DO NOT FILL IN
STATE WELL NO./STATION NO.
LATITUDE LONGITUDE
APN/TRS/OTHER

Owner's Well No. 53
Date Work Began 11-10-92 Ended 1-30-93
Local Permit Agency San Bernardino Environment Health
Permit No. 1109211 Permit Date 11-4-92

GEOLOGIC LOG

ORIENTATION (∠) X VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)
DEPTH TO FIRST WATER 331 (Ft) BELOW SURFACE

DEPTH FROM SURFACE Ft. to Ft.	DESCRIPTION (Describe material, grain size, color, etc.)
0 : 50	TOP SOIL
50 : 60	FINE SAND AND GRAVEL
60 : 110	FINE BAND, COARSE SAND, GRAVEL
110 : 150	FINE & COARSE SAND
150 : 250	FINE SAND, COARSE SAND, GRAVEL
250 : 290	FINE SAND, GRAVEL, CLAY
290 : 440	FINE SAND, GRAVEL, ROCK
440 : 490	SAND, GRAVEL, ROCK
490 : 500	DECOMPOSED GRANITE, HARD
500 : 520	DECOMPOSED GRANITE, SAND, GRAVEL
520 : 640	SAND, GRAVEL, CLAY
640 : 680	SAND, GRAVEL, ROCK, CLAY
680 : 710	SAND, GRAVEL, CLAY
710 : 740	SAND, GRAVEL, CLAY, ROCK
740 : 800	GRAVEL, ROCK, GRANITE, BOULDERS
800 : 840	SAND, GRAVEL, ROCK, CLAY
840 : 860	CEMENTED BAND, GRAVEL, ROCK
860 : 1030	SAND, GRAVEL, SMALL & LARGE ROCK, CLAY
1030 : 1140	SAND, GRAVEL, CLAY, VOULDERS
1140 : 1210	SAND, GRAVEL, CLAY
1210 : 1220	CEMENTED SAND, GRAVEL, GRANITE

TOTAL DEPTH OF BORING 1225 (Ft.)
TOTAL DEPTH OF COMPLETED WELL 970 (Feet)

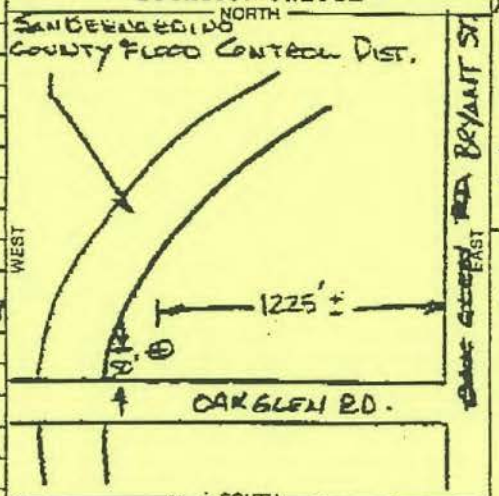
WELL OWNER

Name [redacted]
Mailing Address
CITY STATE ZIP

WELL LOCATION

Address East Side of Oak Glen Road, between Sunnyside & Bryant in City of Yucaipa
City San Bernardino
County
APN Book 303 Page 51 Parcel 45
or Township 1S Range 2W Section 5
or Latitude ___ DEG. ___ MIN. ___ SEC. NORTH Longitude ___ DEG. ___ MIN. ___ SEC. WEST

LOCATION SKETCH



Illustrate or Describe Distance of Well from Landmarks such as Roads, Buildings, Fences, Rivers, etc.
PLEASE BE ACCURATE & COMPLETE

ACTIVITY (∠)

X NEW WELL
___ MODIFICATION/REPAIR
___ Deepen
___ Other (Specify)
___ DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")

PLANNED USE(S) (∠)
___ MONITORING
WATER SUPPLY
X Domestic
___ Public
___ Irrigation
___ Industrial
___ "TEST WELL"
___ CATHODIC PROTECTION
___ OTHER (Specify)

DRILLING METHOD Reverse FLUID Water

WATER LEVEL & FIELD OF COMPLETED WELL

DEPTH OF STATIC WATER LEVEL 331' (Ft.) & DATE MEASURED 1-4-93
ESTIMATED YIELD 1750 (GPM) & TEST TYPE 24 Constant
TEST LENGTH ___ (Hrs.) TOTAL DRAWDOWN 115 (Ft.)
* May not be representative of a well's long-term yield.

CASING(S)

DEPTH FROM SURFACE Ft. to Ft.	BORE-HOLE DIA. (Inches)	TYPE (∠) BLANK	SCREEN	CONDUCTOR	FILL PIPE	MATERIAL/ GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)
0 : 50	40"			X		M.S.	30"	5/16	
0 : 450	30"	X				M.S.	16"	5/16	
450 : 950	30"		X			M.S.	16"	5/16	.080
950 : 970	30"	X				M.S.	16"	5/16	

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft. to Ft.	TYPE: CEMENT (∠)	BENTONITE (∠)	FILL (∠)	FILTER PACK (TYPE/SIZE)
0 : 50	X			10 sack slurr
0 : 970			X	4x12 valley
970 : 1225			X	Natural

ATTACHMENTS (∠)

___ Geologic Log
___ Well Construction Diagram
___ Geophysical Log(s)
___ Soil Water Chemical Analyses
___ Other
ATTACH ADDITIONAL INFORMATION IF IT EXISTS

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.
NAME Stevan A. Hicks - McCalla (PERSON, FIRM OR CORPORATION) (TYPED OR PRINTED)
ADDRESS 900 Nevada St. CITY Redlands STATE CA ZIP 92373
Signed Stevan A. Hicks (WELL DRILLER AUTHORIZED REPRESENTATIVE) DATE SIGNED 2-1-93
C57 LICENSE NUMBER 510011

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

COUNTY:SAN BERNARDINO CA.
FIELD:YUCAIPA
LOCATION:OAK GLEN AVE SOUTH OF BR
WELL:#53
COMPANY:McCALLA BROS. DRILLING
[redacted]

welenco

ELECTRIC LOG

25R4

COMPANY	MCCALLA BROS. DRILLING
WELL	#53
FIELD	YUCAIPA
COUNTY	SAN BERNARDINO STATE CA.

LOCATION
OAK GLEN AVE SOUTH OF BRYAN

Sec. Twp. Rge.

Other Services
NONE

Permanent datum GROUND LEVEL Elev. N/A
Log Measured From GROUND LEVEL Above Perm. Datum
Drilling Measured From GROUND LEVEL

Elev.: K.B.
D.F.
G.L.

Date	11/23/92							
Run No.	ONE							
Depth-Driller	1180'							
Depth-Logger	1180'							
Btm Log Interval	1178'							
Top Log Interval	50'							
Casing Driller	30"	@ 50'	@		@		@	
Casing Logger	50'							
Bit Size	17.5"							
Type Fluid in Hole	WATER							
Density I Viscosity	N/A	N/A						
pH I Fluid Loss	N/A	N/A cc		cc		cc		cc
Source of Sample	PIT							
Rm @ Meas. Temp.	16.8	@ 70 °F	@	°F	@	°F	@	°F
Rmf @ Meas. Temp.	16.8	@ 70 °F	@	°F	@	°F	@	°F
Rmc @ Meas. Temp.	N/A	@ N/A °F	@	°F	@	°F	@	°F
Source of Rmf and Rmc	MEAS	N/A						
Rm @ BHT	N/A	@ N/A °F	@	°F	@	°F	@	°F
Time: End Circulation	11/22 21:00							
Time: Logger on bottom	11:59							
Max Rec Temp Deg. F	N/A	°F		°F		°F		°F
Equip No. I Location	L-14	L.A.						
Recorded By	RIDDER							

CWP DRS 1.2616

Fold Here

Changes in Mud Type or Additional Samples			
ate I Sample No			
epth Driller			
ype Fluid			
ens I Visc			
H I Fluid Loss			
ource of Sample			
m @ Meas Temp		o	o
mf @ Meas Temp		o	o
mc @ Meas Temp		o	o
ource RMF I Rmc			
m @ BHT		o	o
mf @ BHT		o	o
mc @ BHT		o	o

Scale Changes

Type Log	Depth	Scale Up Hole	Scale Down Hole

EQUIPMENT DATA

Run No.	Tool No.	Tool Type	Tool Pos.		Gamma Ray Tool No.
ONE	--	NORMAL	FREE		

CALIBRATION DATA

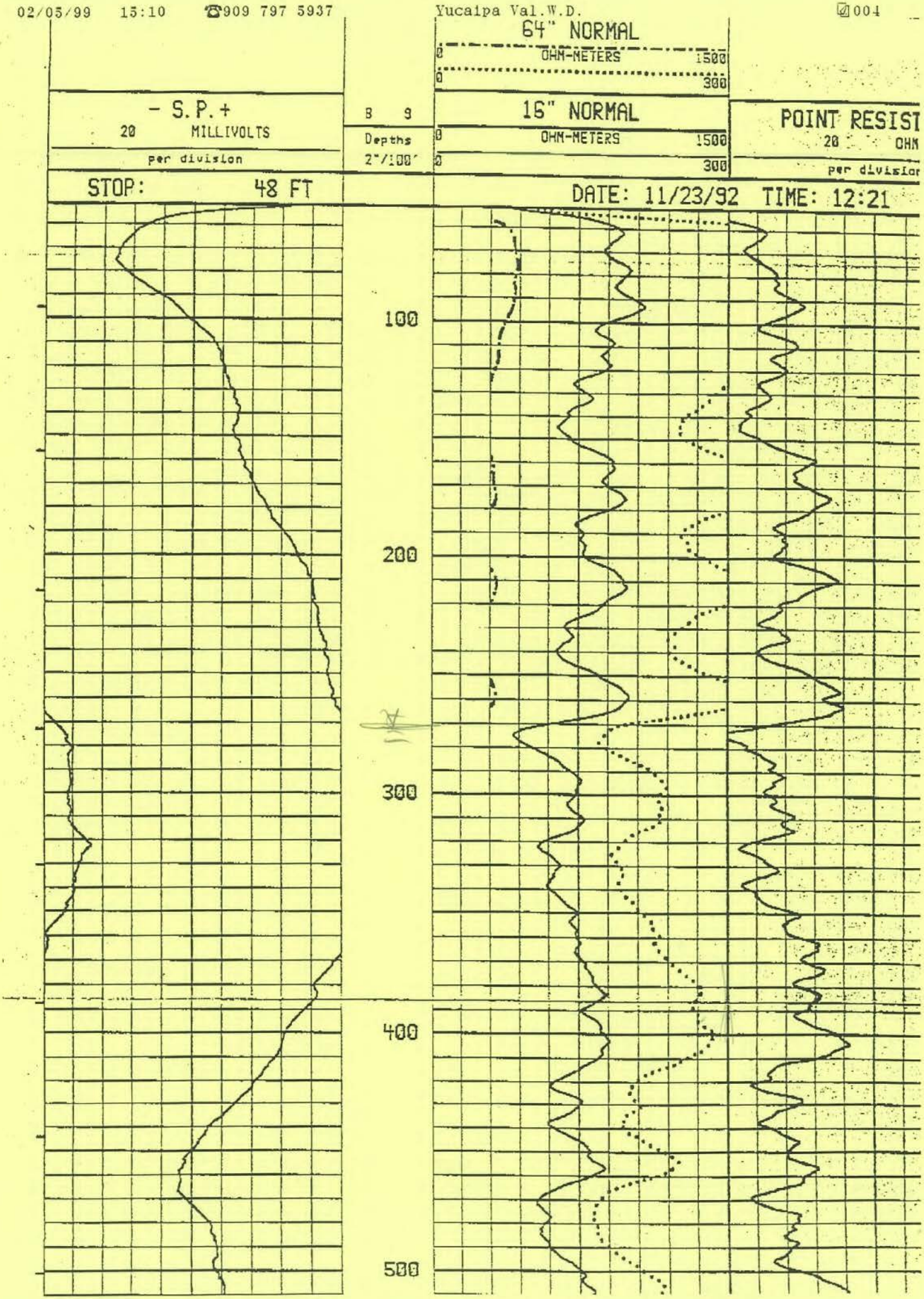
Run No.	16"Normal Zero	16"Normal Int. Cal	Induction Loop Cal	Induction Tool Zero	Induction Tool Cal	GAMMA RAY API SCALE	GAMMA RAY BKG CPS	GAMMA RAY STD C

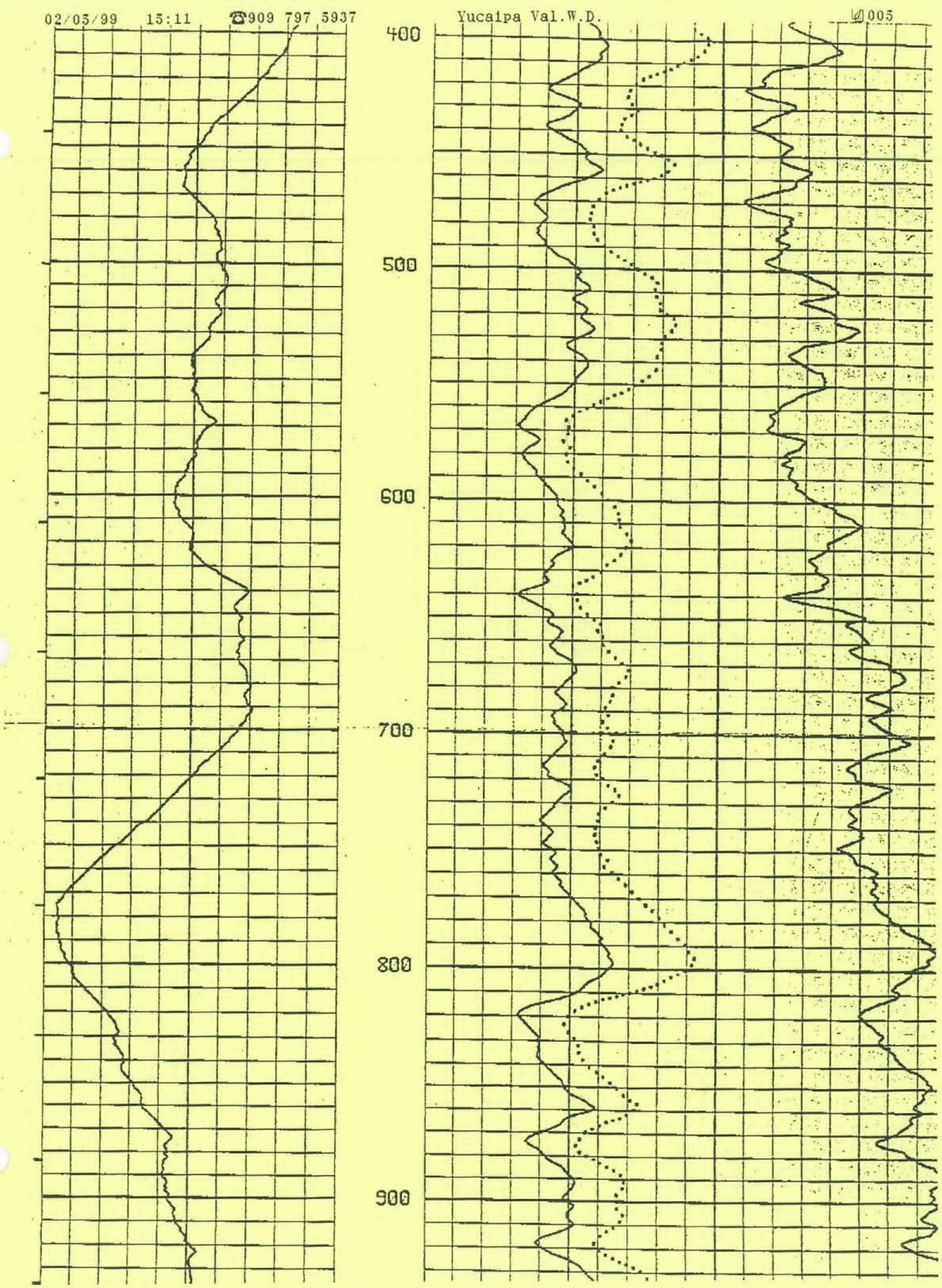
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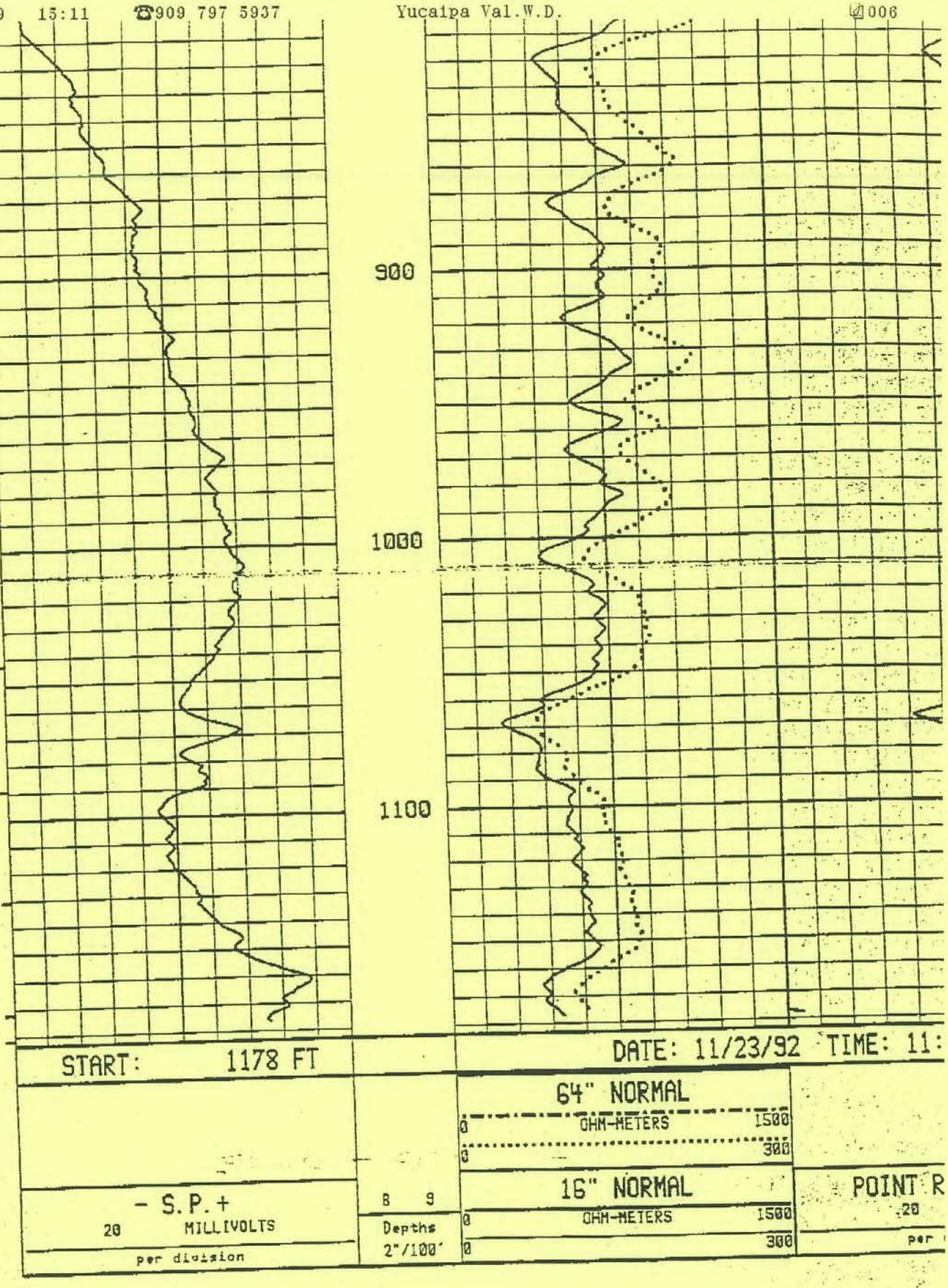
REMARKS:

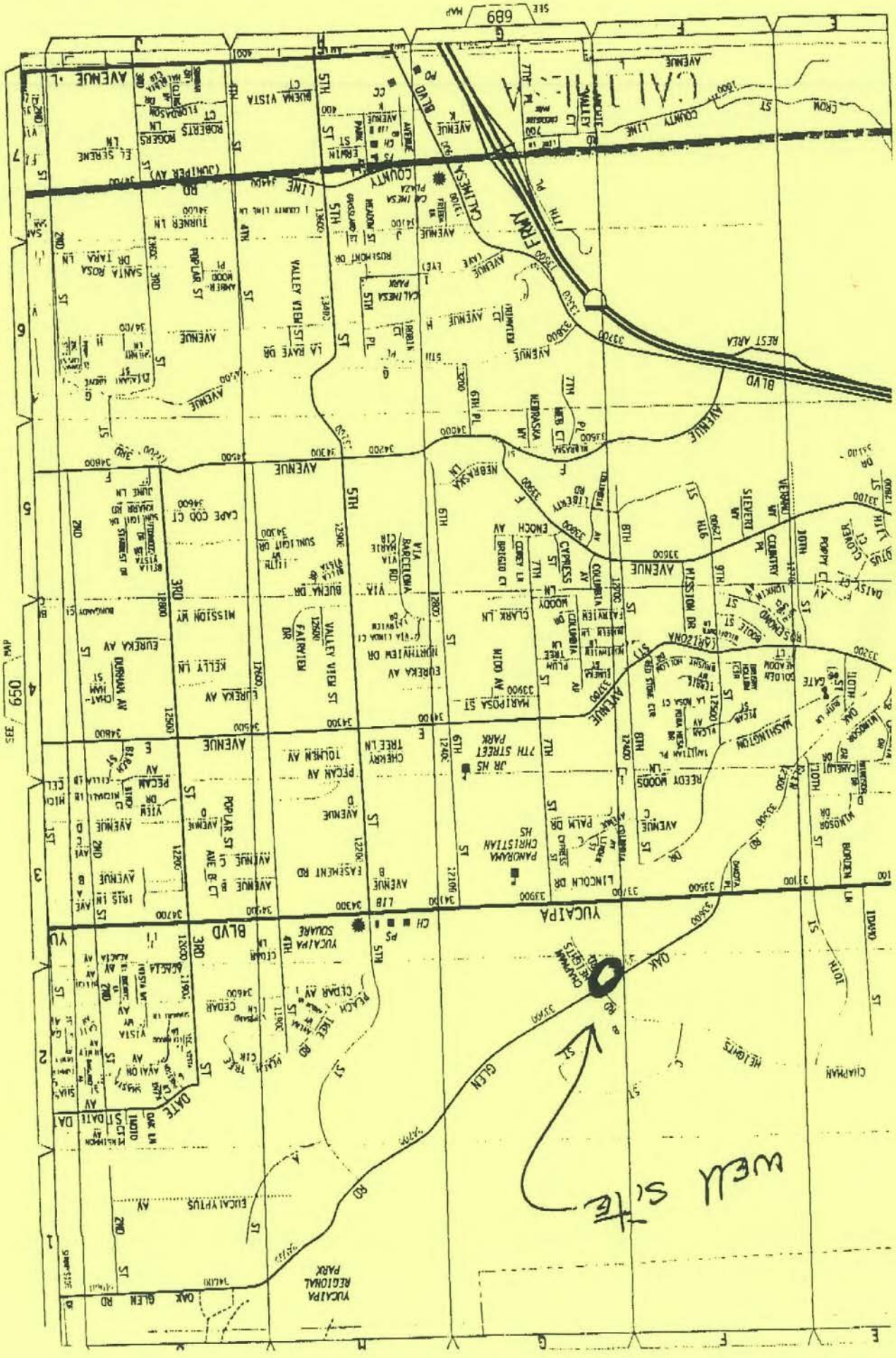
NOTICE: All interpretations are opinions based on inferences from electrical or other measurements and we cannot, and do not, guarantee the accuracy or correctness of any interpretations, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, damages or expenses incurred or sustained by anyone resulting from any interpretation made by one of our officers, agents or employees. These interpretations are also subject to our General Terms and Conditions as set out in our current Price Schedule.
Welenco

64" NORMAL
0 OHM-METERS 500


64" NORMAL
OHM-METERS
1500
300
- S.P. +
20 MILLIVOLTS
per division
B 9
Depths
2"/100'
16" NORMAL
OHM-METERS
1500
300
POINT RESIST
20 OHM
per division
STOP: 48 FT
DATE: 11/23/92 TIME: 12:21
100
200
300
400
500


02/05/99 15:11 ☎909 797 5937
Yucaipa Val.W.D.
005
400
500
600
700
800
900


900
1000
1100
START: 1178 FT
DATE: 11/23/92 TIME: 11:
64" NORMAL
0 OHM-METERS 1500
0 300
16" NORMAL
0 OHM-METERS 1500
0 300
POINT R
.20
per
- S.P. +
20 MILLIVOLTS
per division
8 9
Depths
2"/100'



REF. 449 G-2

INLAND EMPIRE

1S/2W-35H3

ORIGINAL
File with DWR

Page 1 of 1

Owner's Well No. 55

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet

No. 748842

DWR USE ONLY — DO NOT FILL IN
011S01 2W13 5 1H 10 13
STATE WELL NO./STATION NO.
LATITUDE LONGITUDE
APN/TRS/OTHER

Work Began 1-22-01, Ended 7-28-01

Local Permit Agency San Bernardino County Dept. of Public Health

Permit No. 2001 010028 Permit Date 1-18-01

GEOLOGIC LOG

ORIENTATION (✓) X VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)

DRILLING METHOD Reverse Cir. FLUID Polybore

DEPTH FROM SURFACE Ft.	to Ft.	DESCRIPTION (Describe material, grain size, color, etc.)
0	50	Top Soil Rock
50	100	Sand & Gravel
100	180	Sand, Gravel, & Rock
180	200	Sand, Clay, & Granite
200	230	Sand, Gravel, & Granite
230	250	Sand, Hard
250	270	Sand & Gravel
270	290	Hard Sand
290	380	Sand, Gravel, & Rock
380	430	Sand & small Gravel
430	480	Sand & Gravel
480	490	Sand
490	550	Hard Sand & Gravel
550	630	Sand & Gravel
630	700	Hard Sand & Gravel
700	770	Sand & Gravel
770	870	Gravel & Rocks
870	950	Sand & Gravel Granite
950	1000	Sand & Gravel
1000	1050	Hard Sand & Gravel
50	1070	Granite & Rocks

TOTAL DEPTH OF BORING 1070 (Feet)

TOTAL DEPTH OF COMPLETED WELL 1050 (Feet)

WELL OWNER

Name [redacted]

Mailing Address [redacted]

[redacted] CA 92399

CITY STATE ZIP

WELL LOCATION

Address ½ mile South Oak Glen Rd 100 East of 5th

City Yucaipa

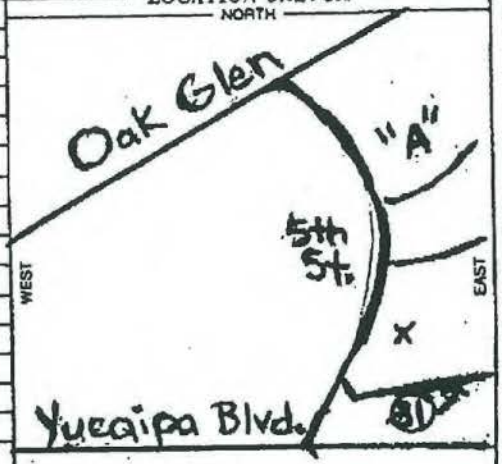
County San Bernardino

APN Book 0303 Page 151 Parcel 31

Township 1S Range 2W Section 35

Latitude ___ DEG. ___ MIN. ___ SEC. NORTH Longitude ___ DEG. ___ MIN. ___ SEC. WEST

LOCATION SKETCH



Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. PLEASE BE ACCURATE & COMPLETE.

ACTIVITY (✓)

X NEW WELL

MODIFICATION/REPAIR
___ Deepen
___ Other (Specify)

___ DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")

PLANNED USES (✓)

WATER SUPPLY
___ Domestic X Public
___ Irrigation ___ Industrial

___ MONITORING
___ TEST WELL
___ CATHODIC PROTECTION
___ HEAT EXCHANGE
___ DIRECT PUSH
___ INJECTION
___ VAPOR EXTRACTION
___ SPARGING
___ REMEDIATION
___ OTHER (SPECIFY)

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER 232' (Ft.) BELOW SURFACE

DEPTH OF STATIC WATER LEVEL 232' (Ft.) & DATE MEASURED 6-18-01

ESTIMATED YIELD * 1500 (GPM) & TEST TYPE Constant

TEST LENGTH 24 (Hrs.) TOTAL DRAWDOWN 144 (Ft.)

* May not be representative of a well's long-term yield.

CASING (S)

DEPTH FROM SURFACE Ft.	to Ft.	BORE-HOLE DIA. (Inches)	TYPE (✓) BLANK	SCREEN	CONDUCTOR	FILL PIPE	MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)
0	50	42			x		A53 GradeB	30	5/16	
+2	460	26	x				CopperBearing	16	5/16	
460	1030	26		x			FulFlo	16	5/16	.050
1030	1050	26	x				CopperBearing	16	5/16	
+2	459	26				x	A53 GradeB	2	Sch 40	

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft.	to Ft.	TYPE: CEMENT (✓)	BENTONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
0	50	x			
50	1070				6x16 Tacna Sand & Gravel

ATTACHMENTS (✓)

___ Geologic Log
___ Well Construction Diagram
___ Geophysical Log(s)
___ Soil/Water Chemical Analyses
___ Other ___

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME Bakersfield Well & Pump Co. (PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

7212 Fruitvale Ave. Bakersfield CA 93308

ADDRESS CITY STATE ZIP

Signed [signature] (WELL DRILLER/AUTHORIZED REPRESENTATIVE) 8-6-01 (DATE SIGNED) 448537 (C-57 LICENSE NUMBER)

DWR 188 REV. 11-97

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

AUG. 06 '01 (MON) 13:19 COMMUNICATION No:19 PAGE. 2

ORIGINAL
File with DWR

1S/2W-35

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet

Page 1 of 2

Owner's Well No. 57

No. 788723

Date Work Began 1-18-01 Ended 7-30-02

Local Permit Agency San Bernardino Environmental Health Services

Permit No. 2001010029 Permit Date 1-18-01

STATE WELL NO./STATION NO.

LATITUDE LONGITUDE

APN TRS OTHER

GEOLOGIC LOG

ORIENTATION (✓) X VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)

DRILLING METHOD Reverse Circulation FLUID Poly Bore

DEPTH FROM SURFACE ft to ft	DESCRIPTION — Describe material, grain size, color, etc.
40 to 130	sand & gravel
130 to 140	coarse gravel, sand, rock
140 to 160	sand, gravel, & rock
160 to 170	sand
170 to 180	gravel, sand , & rock
180 to 190	sand and small gravel
190 to 200	sand, some short cut gravel
200 to 210	sand, little clay, & gravel
210 to 230	sand with clay and small gravel
230 to 240	sand and gravel
240 to 250	sand and small gravel
250 to 260	sand, gravel, and different colors
260 to 270	sand, gravel, & granite
270 to 280	sand, gravel, sharp cuttings
280 to 290	sand and gravel
290 to 300	sand and large gravel
300 to 310	sand and mediam sharp
310 to 320	sand and gravel
320 to 330	sand and gravel (fine sharp)
330 to 390	sand and gravel
390 to 410	sand and mediam gravel
410 to 420	gravel and rock
420 to 440	sand and gravel
440 to 450	large gravel and different colors
450 to 470	sand and gravel
470 to 480	granite and gravel
480 to 490	sand and hard gravel
490 to 500	sand, gravel and little clay
500 to 520	sand and hard gravel
520 to 540	sand and mediam gravel

TOTAL DEPTH OF BORING 900 Feet

TOTAL DEPTH OF COMPLETED WELL N/A Feet

WELL OWNER

Name [redacted]

Mailing Address [redacted]

Yucaipa CA. 92399
CITY STATE ZIP

WELL LOCATION

Address 100' South of Oak Glen Rd. 250' West Chapman

City Yucaipa

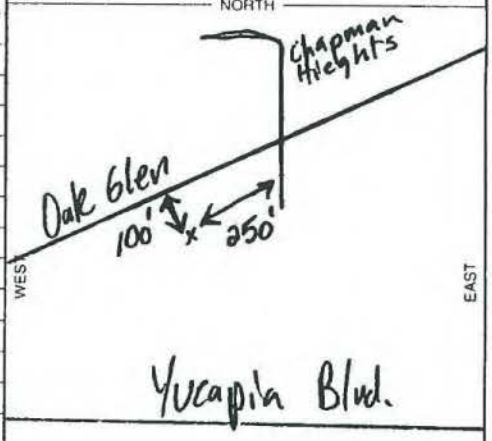
County San Bernardino

APN Book 0303 Page 131 Parcel 66

Township 1S Range 2W Section 35

Latitude ___ DEG ___ MIN ___ SEC NORTH Longitude ___ DEG ___ MIN ___ SEC WEST

LOCATION SKETCH



Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. PLEASE BE ACCURATE & COMPLETE.

ACTIVITY (✓)

X NEW WELL

MODIFICATION/REPAIR
___ Deepen
___ Other (Specify)

___ DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")

PLANNED USES (✓)

WATER SUPPLY
___ Domestic ___ Public
___ Irrigation ___ Industrial

MONITORING ___
TEST WELL X
CATHODIC PROTECTION ___
HEAT EXCHANGE ___
DIRECT PUSH ___
INJECTION ___
VAPOR EXTRACTION ___
SPARGING ___
REMEDIATION ___
OTHER (SPECIFY) ___

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER 259 (Ft.) BELOW SURFACE

DEPTH OF STATIC WATER LEVEL 259 (Ft.) & DATE MEASURED 2-29-01

ESTIMATED YIELD * 100 (GPM) & TEST TYPE Air Lift

TEST LENGTH 3 (Hrs.) TOTAL DRAWDOWN N/A (Ft.)

* May not be representative of a well's long-term yield.

CASING (S)

DEPTH FROM SURFACE ft to ft	BORE-HOLE DIA. (Inches)	TYPE (✓) BLANK	SCREEN	CONDUCTOR	FILL PIPE	MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)
0 to 50	42			x		A53 Grade B	30	5/16	
0 to 100	17½	x				PVC	5	Sch.40	
100 to 650	17½		x			PVC	5	Sch.40	.040

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft. to Ft.	TYPE: CEMENT (✓)	BENTONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
0 to 50	x			
50 to 650				
650 to 900			x	

ATTACHMENTS (✓)

___ Geologic Log
___ Well Construction Diagram
___ Geophysical Log(s)
___ Soil/Water Chemical Analyses
___ Other

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME Bakersfield Well & Pump Co.
(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

7212 Fruitvale Ave Bakersfield CA. 93308
ADDRESS CITY STATE ZIP

Signed [signature] 8-10-02 440537
WELL DRILLER/AUTHORIZED REPRESENTATIVE DATE SIGNED C-57 LICENSE NUMBER

DWR [illegible]

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

ORICINAL
File with DWR

Page 2 of 2

Owner's Well No. 57

Date Work Began 1-18-02 Ended 7-30-02

Local Permit Agency San Bernardino Environmental Health services

Permit No. 2001010029 Permit Date 1-18-02

STATE OF CALIFORNIA

WELL COMPLETION REPORT

Refer to Instruction Pamphlet

No. 788724

STATE WELL NO/STATION NO

LATITUDE LONGITUDE

APN/TRS/OTHER

GEOLOGIC LOG

ORIENTATION (✓) X VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)

DRILLING METHOD Reverse Circulation FLUID Poly Bore

DEPTH FROM SURFACE Ft	to Ft	DESCRIPTION *Describe material, grain size, color, etc.*
540	550	rock
550	560	sand, gravel, and little clay
560	570	some white gravel and clay
570	580	white gravel and granite
580	600	brown clay and white gravel
600	610	sand and fine gravel
610	630	granite and brwn clay
630	640	clay and mediam gravel
640	650	gravel and little clay
650	670	gravel and black & green clay
670	680	gravel and small cuttings
680	690	gray clay
690	700	gravel
700	710	clay brown green gravel
710	720	brown clay
720	730	sand, gravel & sharp cuttings
730	740	gravel and sand
740	750	sand and gravel & clay
750	760	granite
760	770	sand and clay
770	780	sand gravel and smallcuttings
780	800	granite
800	840	gravel and sand
840	860	mediam cuttings, sand & gravel
860	870	coarse large granite cut.
870	880	granite and some gravel
880	900	granite

TOTAL DEPTH OF BORING _____ (Feet)

TOTAL DEPTH OF COMPLETED WELL _____ Feet

WELL OWNER

Name [redacted]

Mailing Address [redacted]

Yucaipa CA. 92399

CITY STATE ZIP

WELL LOCATION

Address _____

City _____

County _____

APN Book _____ Page _____ Parcel _____

Township _____ Range _____ Section _____

Latitude _____ DEG MIN SEC NORTH Longitude _____ DEG MIN SEC WEST

LOCATION SKETCH

NORTH

WEST EAST

SOUTH

Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary ***PLEASE BE ACCURATE & COMPLETE.***

ACTIVITY (✓)

___ NEW WELL

MODIFICATION/REPAIR

___ Deepen

___ Other (Specify) _____

___ DESTROY *(Describe Procedures and Materials Under GEOLOGIC LOG)*

PLANNED USES (✓)

WATER SUPPLY

___ Domestic ___ Public

___ Irrigation ___ Industrial

MONITORING ___

TEST WELL ___

CATHODIC PROTECTION ___

HEAT EXCHANGE ___

DIRECT PUSH ___

INJECTION ___

VAPOR EXTRACTION ___

SPARGING ___

REMEDIATION ___

OTHER (SPECIFY) ___

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER _____ (Ft.) BELOW SURFACE

DEPTH OF STATIC WATER LEVEL _____ (Ft.) & DATE MEASURED _____

ESTIMATED YIELD * _____ (GPM) & TEST TYPE _____

TEST LENGTH _____ (Hrs.) TOTAL DRAWDOWN _____ (Ft.)

* *May not be representative of a well's long-term yield.*

CASING (S)

DEPTH FROM SURFACE Ft	to Ft	BORE HOLE DIA. (Inches)	TYPE (✓) BLANK	SCREEN	CONDUCTOR	FILL PIPE	MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft	to Ft	TYPE CEMENT (✓)	BENTONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)

ATTACHMENTS (✓)

___ Geologic Log

___ Well Construction Diagram

___ Geophysical Log(s)

___ Soil/Water Chemical Analyses

___ Other _____

ATTACH ADDITIONAL INFORMATION IF IT EXISTS

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME Bakersfield Well & Pump Co.
(PERSON FIRM OR CORPORATION) (TYPED OR PRINTED)

7212 Fruitvale Ave. Bakersfield CA. 93308

ADDRESS CITY STATE ZIP

Signed _____ 8-10-02 440537

WELL DRILLER/AUTHORIZED REPRESENTATIVE DATE SIGNED C-57 LICENSE NUMBER

DWR 188 REV 11/98 IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

ORIGINAL
File with DWR

Page 1 of 1

Owner's Well No. 57

Date Work Began 8-29-02 Ended 9-20-02

Local Permit Agency San Bernardino Environmental Health Services

Permit No. 2002 08 0700 Permit Date 8-29-02

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet

No. 788719

DWR USE ONLY — DO NOT FILL IN
STATE WELL NO./STATION NO.
LATITUDE LONGITUDE
APN/TRS/OTHER

GEOLOGIC LOG

ORIENTATION (✓) X VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)

DRILLING METHOD Abandon Well FLUID ___

DEPTH FROM SURFACE Ft.	to Ft.	DESCRIPTION *Describe material, grain size, color, etc.*
0	10	fill
10	650	cement

TOTAL DEPTH OF BORING: 650 (Feet)

TOTAL DEPTH OF COMPLETED WELL: 650 (Feet)

WELL OWNER

Name [redacted]

Mailing Address [redacted]

Yucaipa CA. 92399
CITY STATE ZIP

WELL LOCATION

Address 100' South of Oak Glen Rd. 250' West Chapman

City Yucaipa

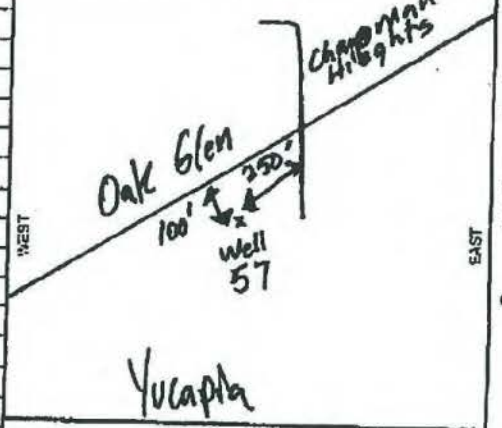
County San Bernardino

APN Book 0303 Page 131 Parcel 66

Township 1S Range 2W Section 35

Latitude ___ DEG. ___ MIN. ___ SEC. NORTH Longitude ___ DEG. ___ MIN. ___ SEC. WEST

LOCATION SKETCH



Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. PLEASE BE ACCURATE & COMPLETE.

ACTIVITY (✓)

___ NEW WELL

MODIFICATION/REPAIR
___ Deepen
___ Other (Specify)

X DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")

PLANNED USES (✓)

WATER SUPPLY
___ Domestic ___ Public
___ Irrigation ___ Industrial

___ MONITORING
___ TEST WELL
___ CATHODIC PROTECTION
___ HEAT EXCHANGE
___ DIRECT PUSH
___ INJECTION
___ VAPOR EXTRACTION
___ SPARGING
___ REMEDIATION
___ OTHER (SPECIFY)

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER 259 (Ft.) BELOW SURFACE

DEPTH OF STATIC WATER LEVEL ___ (Ft.) & DATE MEASURED ___

ESTIMATED YIELD * ___ (GPM) & TEST TYPE ___

TEST LENGTH ___ (Hrs.) TOTAL DRAWDOWN ___ (Ft.)

* *May not be representative of a well's long-term yield.*

CASING (S)

DEPTH FROM SURFACE Ft.	to Ft.	BORE-HOLE DIA. (Inches)	TYPE (✓) BLANK	SCREEN	CON-DUCTOR	FILL PIPE	MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft.	to Ft.	TYPE: CEMENT (✓)	BENTONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
0	10			X	
10	650	X			

ATTACHMENTS (✓)

___ Geologic Log
___ Well Construction Diagram
___ Geophysical Log(s)
___ Soil/Water Chemical Analyses
___ Other ___

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

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NAME Bakersfield Well & Pump Co.
(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

ADDRESS 7212 Fruitvale Ave. Bakersfield CA. 93308
CITY STATE ZIP

Signed [signature]
WELL DRILLER/AUTHORIZED REPRESENTATIVE

11-20-02
DATE SIGNED

440537
C-57 LICENSE NUMBER

DWR 188 REV. 11-97

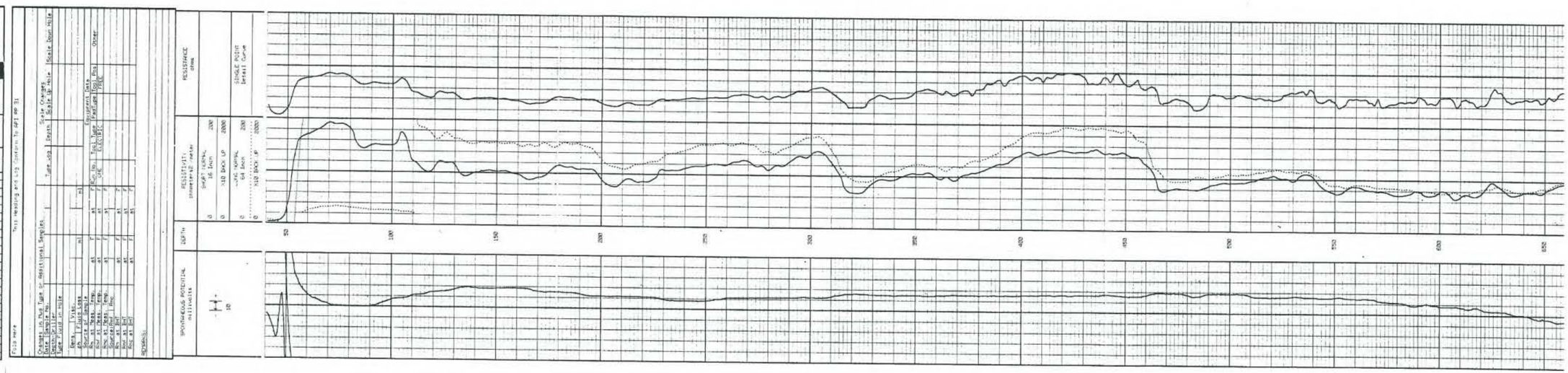
IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

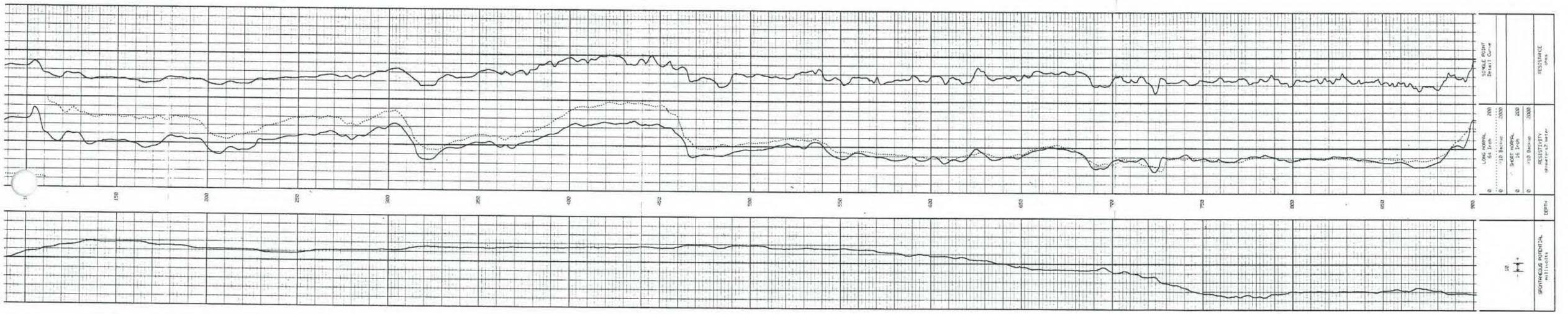
well 57
1s/2w-35

welenco

ELECTRIC LOG

FILING NO.	COMPANY KRIEGER & STEWART			
	WELL 57			
	FIELD YUCAIPA			
	COUNTY RIVERSIDE STATE CALIFORNIA			
	LOCATION: OAK GLEN ROAD			OTHER SERV
				GAMMA RAY
JOB NO.				SONIC-VDL
33869	SEC TWP RGE			
Permanent Datum: GROUND LEVEL Elev.:				K.B.
Log Measured From G.L. 0 Ft Above Perm Datum				D.F.
Drilling Measured From GROUND LEVEL				G.L.
Date	02-10-2001	- -		- - -
Run No.	ONE			
Depth - Driller	980'			
Depth - Logger	980'			
Btm. Log Inter.	980'			
Top Log Inter.	40'			
Casing-Driller	30" at 58'	at		at
Casing-Logger	at 58'	at		at
Bit Size	17.5"			
Type Fluid In Hole	POLY BORE			
Dens. / Visc.	N/A / N/A			
pH / Fluid Loss	N/A / N/A ml		ml	ml
Source of Sample	PIT			
Rm at Meas.Temp	16.6 at 75 F	at 75 F		at 75 F
Rmf at Meas.Temp	15.2 at 75 F	at 75 F		at 75 F
Rmc at Meas.Temp	N/A at -- F	at F		at F
Source:Rmf Rmc	MEAS / N-A			
Rm at BHT	N/A at F	at F		at F
Time Since Circ.	14 HOURS			
Max. Rec. Temp.	N/A F		F	F
Equip. Location	L-16 / BFL			
Recorded By	D. JACKSON			
Witnessed By	R. S. L.			




SINGLE POINT
Detail Curve
LONG NORMAL
64 Inch
AM Backup
SHORT NORMAL
16 Inch
AM Backup
RESISTIVITY
ohms-m2/m
RESISTANCE
ohms
DEPTH
SPONTANEOUS POTENTIAL
millivolts

well 57

1S/2W-35

welenco

GAMMA RAY - SONIC - VDL LOG

FILING NO.	COMPANY KRIEGER & STEWART		
	WELL 57		
	FIELD YUCAIPA		
	COUNTY RIVERSIDE	STATE CALIFORNIA	
	LOCATION: OAK GLEN ROAD		OTHER SERV.
			ELOG
JOB NO. 33969	SEC TWP RGE		
PERMANENT DATUM: GROUND LEVEL	ELEV.		ELEVATION:
LOG MEASURED FROM G.L. 0 FT ABOVE PERM DATUM			KB
DRILLING MEASURED FROM GROUND LEVEL			DF
			GL

	02-10-2001	02-10-2001	
1 OF LOG	Gamma Ray	SONIC / VDL	
RUN NO.	ONE	ONE	
DEPTH - DRILLER	988'	988'	
DEPTH - LOGGER	988'	988'	
BOTTOM LOGGED INT	788'	952'	
TOP LOGGED INT	0'	0'	
TYPE FLUID IN HOLE	POLY BORE	POLY BORE	
FLUID LEVEL	FULL	FULL	
MAX TEMP DEG F	N-A	N-A	
OPERATING RIG TIME	1 HOUR	1 1/2 HOURS	
EQUIP. LOCATION	L--16 RFL	L-16 RFL	
OPERATOR	D. JACKSON	D. JACKSON	
WITNESSED BY	M. S. L.	M. S. L.	

RUN	BORE HOLE RECORD			CASING RECORD			
NO.	BIT	FROM	TO	SIZE	TYPE	FROM	TO
ONE	17.5"	58'	988'	10"	STEEL	5'	58'

EQUIPMENT DATA

LOG TYPE	GAMMA RAY	SONIC / VDL			
RUN NO.	ONE	ONE			
TOOL MODEL NO.	ORE	MLS			
TOOL SERIAL NO.	T-34	T-22			
DIAMETER	1.8"	2.125"			
DETECTOR TYPE	SCINT.	PIEZO			
DETECTOR LENGTH	8"	3' & 5'			
UNITS/DIV.	10 API	20 uSec/Ft			
SENSITIVITY	100-122	4			
ZERO DIV L OR R	0 - L	2 - R			
SPEED-FPM	30	17			
DATA SAMPLES/FT	10	10			
FORMATION FACTOR	N-A	N-A			
TIME CONSTANT	3	N-A			
PUMP RATE-GPM	N-A	N-A			
PUMP RATE-GPM	N-A	N-A			
PUMP RATE-GPM	N-A	N-A			

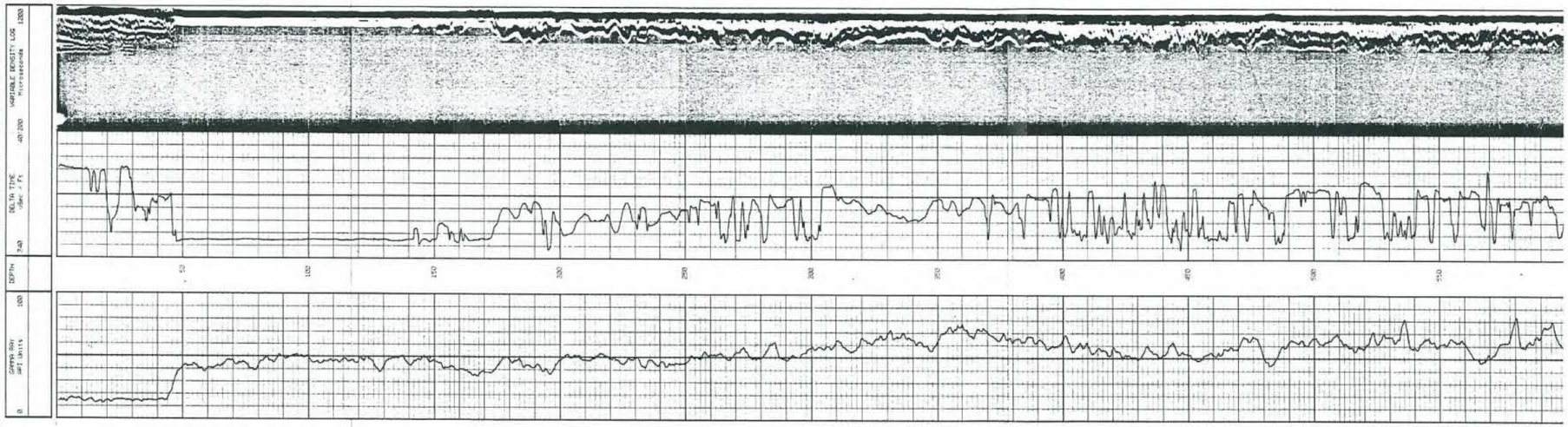
SOURCE TYPE	STRENGTH	SPACING	MODEL NO	SERIAL NO.

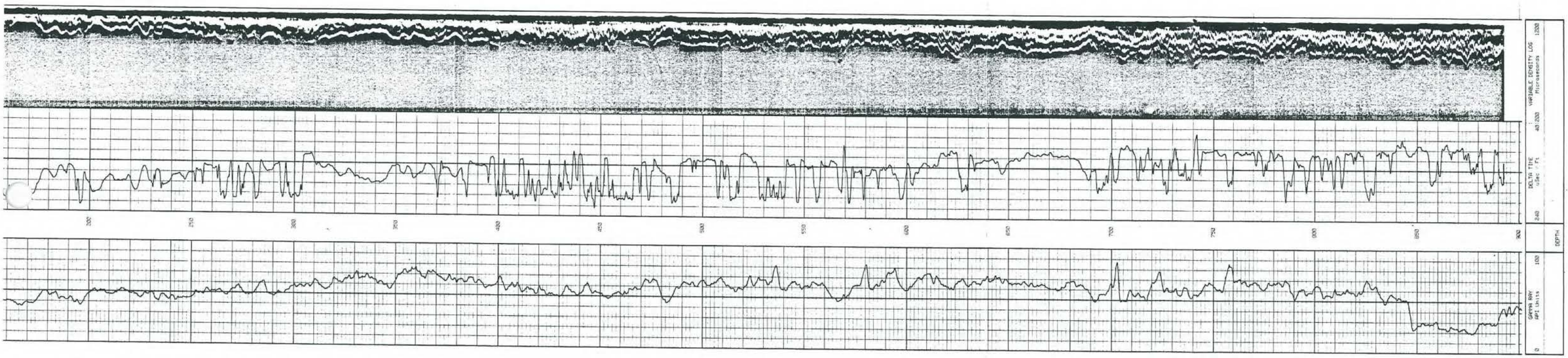
PERFORATIONS:

REMARKS: VDL RECORDED FROM 5' RECIEVER

NOTICE:
All interpretations are opinions based on inferences from electrical or other measurements and we cannot, and do not guarantee the accuracy or correctness of any interpretations, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, damages or expenses incurred or sustained by anyone resulting from any interpretation made by one of our officers, agents or employees. These interpretations are also subject to our General Terms and Conditions as set out in our current Price Schedule.

WELENCO, INC




VARIABLE DENSITY LOG
DELTA TIME
GAMMA RAY
API Units
DEPTH

...PLICATE
Owner's Copy

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES

WATER WELL DRILLERS REPORT

Do not fill in

No. 253147

Notice of Intent No. F

Local Permit No. or Date 014773

State Well No. 03S-01W-15F02S

Other Well No.

(1) OWNER: Name [redacted]
Address [redacted]
City LOS ANGELES, CA. ZIP 90004

(2) LOCATION OF WELL (See instructions):
County RIVERSIDE Owner's Well Number #26
Well address if different from above OFF WILDWOOD CYN. RD.
Township 2S Range 1W Section 15F02
Distance from cities, roads, railroads, fences, etc.

W-60

WELL LOCATION SKETCH

(3) TYPE OF WORK:
New Well [X] Deepening [ ]
Reconstruction [ ]
Reconditioning [ ]
Horizontal Well [ ]
Destruction [ ] (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:
Domestic [ ]
Irrigation [ ]
Industrial [ ]
Test Well [ ]
Municipal [ ]
Other [X]
(Describe) COMMERCIAL

(5) EQUIPMENT:
Rotary [ ] Reverse [ ]
Cable [ ] Air [X]
Other [ ] Bucket [ ]

(6) GRAVEL PACK:
Yes [X] No [ ] Size 3/8"
Diameter of bore
Packed from 50 ft. to 462 ft.

(7) CASING INSTALLED:
Steel [X] Plastic [ ] Concrete [ ]

From ft.	To ft.	Dia. in.	Gage or Wall	Type
0	462	9 5/8	188	

(8) PERFORATIONS:
Type of perforation or size of screen

From ft.	To ft.	Slot size
189	399	.060
399	462	.0120

(9) WELL SEAL:
Was surface sanitary seal provided? Yes [X] No [ ] If yes, to depth 50 ft.
Were strata sealed against pollution? Yes [ ] No [X] Interval ft.
Method of sealing STEEL CASING & CEMENT

(10) WATER LEVELS:
Depth of first water, if known 140 ft.
Standing level after well completion 140 ft.

(11) WELL TESTS:
Was well test made? Yes [X] No [ ] If yes, by whom? DRILLER
Type of test Pump [ ] Bailer [ ] Air lift [X]
Depth to water at start of test 140 ft. At end of test ft.
Discharge 500 gal/min after 2 hours Water temperature
Chemical analysis made? Yes [ ] No [X] If yes, by whom?
Was electric log made Yes [ ] No [X] If yes, attach copy to this report

(12) WELL LOG: Total depth 0 ft. Completed depth 462 ft.
from ft. 0 to 462 Formation (Describe by color, character, size or material)

0-20' - FIRM BROWN DIRT
20-25' - FIRM BLUE DG
25-115' - FIRM BROWN DG
115-140' - BROKEN UP BLUE GRANITE/LITTLE WATER
140-180' - BROKEN UP BLACK GRANITE/WHITE QUARTZ
180-260' - BROKEN UP BLUE GRANITE
260-280' - BLUE & GREEN GRANITE/LITTLE WATER
280-340' - HARD BLUE GRANITE
340-360' - HARD BLACK GRANITER
360-380' - BROKEN UP BLUE-GREEN GRANITE/WATER
380-400' - BROKEN UP BLUE & WHITE GRANITE/WATER
400- 420' - BROKEN UP BLUE-GREEN GRANITE/WATER
420-440' - BROKEN UP BLUE, GREEN, WHITE GRANITE/WA
440-462' - HARD BLUE GRANITE

Work started 11-29 19 88 Completed 12-8 19 88

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

Signed (Well Driller)

NAME SAM CRUM WATER WELL DRILLING
(Person, firm, or corporation) (Typed or printed)

Address 1803 MARYVALE LN.

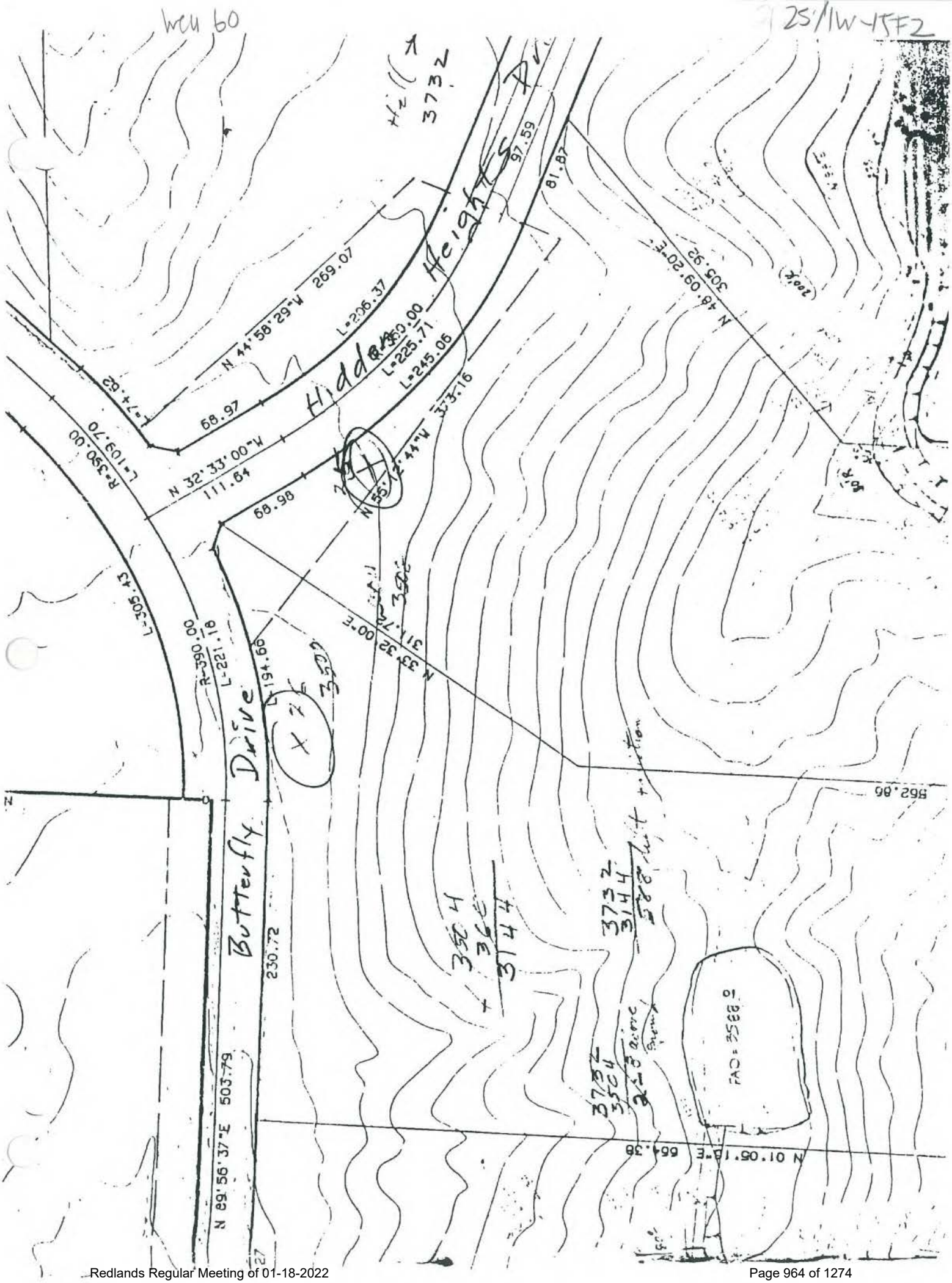
City HEMET, CA. ZIP 92344

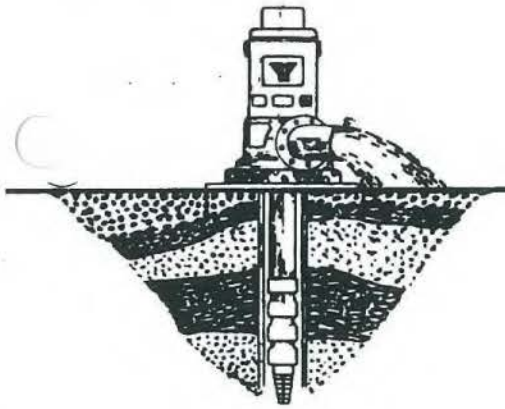
License No. 534298 Date of this report 12-13-88

DWR 188 (REV. 12-86) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

86 96355

COPY
NOT FOR PUBLIC USE
WATER CODE SEC. 13752


Hidden Heights Dr.
Butterfly Drive
N 41°58'29"W 269.07
L=206.37
R=350.00
L=225.71
L=245.06
68.97
N 32°33'00"W
111.64
68.98
N55°12'44"W 323.16
R=390.00
L=221.18
L=194.66
L=305.43
L=109.70
R=350.00
N 89°56'37"E 503.79
230.72
N 48°09'20"E 305.92
81.87
97.59
862.86
N 01°05'10"E 664.38
FAD = 3568.0
3732
3144
3564
3732
3144
3564
3732
3564



Miller Pump Service

Deep Well Turbine Specialists

January 16, 1989

[redacted]
Los Angeles,Ca. 90004

SUBJECT: Well test information:

Dear Mr. [redacted];

Please find enclosed test reports on Wells # 25, and # 26, tested on January 12th., and 13th., 1989.

Well # 25 - I would suggest a pump setting of 300 feet at 150 GPM. Pressure above ground would determine the horse-power of the pump.

Well # 26 - I would suggest a pump setting of 300 feet at 550 GPM maximum in order to stay away from the air being produced from cascading water. I believe the well is capable of producing 800 GPM on a daily basis, 24 hours a day. Pressure above ground would determine the horse-power of the pump.

If you have any questions, please feel free to call me.

Sincerely,

Robert W. Miller

RWM/gf

24041 Mesa View Street • San Jacinto, California 92383 • Telephone (714) 654-8466

Well-61

LICATE
Owner's Copy

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
WATER WELL DRILLERS REPORT

Do not fill in
No. 253143

ice of Intent No. _____
Local Permit No. or Date 014770

State Well No. 025/010-15F01S
Other Well No _____

(1) OWNER: Name [redacted]
Address [redacted]
City LOS ANGELES, CA. ZIP 90004

(2) LOCATION OF WELL (See instructions): W-61
County RIVERSIDE Owner's Well Number #25
Well address if different from above OFF WILDWOOD CYN. RD.
Township 2S Range 1W Section 15F01
Distance from cities, roads, railroads, fences, etc. _____

(3) TYPE OF WORK:
New Well [X] Deepening [ ]
Reconstruction [ ]
Reconditioning [ ]
Horizontal Well [ ]
Destruction [ ] (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:
Domestic [ ]
Irrigation [ ]
Industrial [ ]
Test Well [ ]
Municipal [ ]
Other [X]
(Describe) COMMERCIAL

WELL LOCATION SKETCH

(5) EQUIPMENT:
Rotary [ ] Reverse [ ]
Cable [ ] Air [X]
Other [ ] Bucket [ ]

(6) GRAVEL PACK:
Yes [XX] No [ ] Size 3/8"
Diameter of bore 12"
Packed from 50 ft. to 462 ft.

(7) CASING INSTALLED
Steel [XX] Plastic [ ] Concrete [ ]

From ft	To ft	Dia in	Gage or Wall
0	480	85/8	188

(8) PERFORATIONS
Type of perforation or size of screen

From ft	To ft	Slot size
189	399	.060
399	462	.0120

(9) WELL SEAL:
Was surface sanitary seal provided? Yes [X] No [ ] If yes, to depth DRILLER ft.
Were strata sealed against pollution? Yes [ ] No [X] Interval _____ ft.
Method of sealing STEEL CASING & CEMENT

(10) WATER LEVELS:
Depth of first water, if known 260 ft.
Standing level after well completion 143 ft.

(11) WELL TESTS:
Was well test made? Yes [X] No [ ] If yes, by whom? DRILLER
Type of test Pump [ ] Bailer [ ] Air lift [XX]
Depth to water at start of test 143 ft. At end of test _____ ft.
Yield was large 475 gal/min after 2 hours Water temperature _____
Chemical analysis made? Yes [ ] No [X] If yes, by whom? _____
Was electric log made Yes [ ] No [X] If yes, attach copy to this report

(12) WELL LOG: Total depth 480 ft. Completed depth 480 ft.
from ft. 0 to 480 Formation (Describe by color, character, size or material)

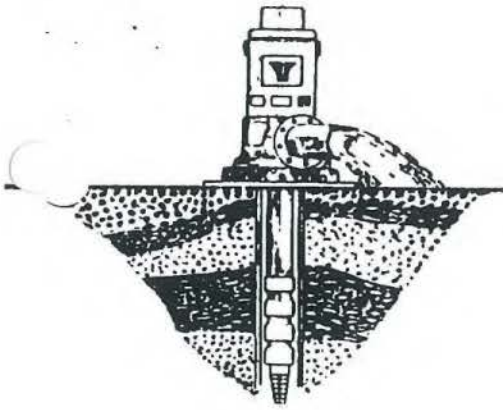
0-40' - SOFT BROWN DG
40-120' FIRM BROWN DG
120-180' FIRM BLUE DG
180-240' HARD BLUE DG
240-260' BROKEN-UP BLUE DG
260-320' BROKEN-UP BLUE & GREEN DG/WATER
320-340' BLUE & BROWN DG MIX
340-380' BROKEN-UP BLUE DG/WHITE QUARTZ & MORE WATER
380-480' BROKEN-UP BLUE & GREEN DG WITH LOTS OF WATER

Work started 12-8 19 88 Completed 12-14 19 88

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
Signed _____ (Well Driller)
NAME SAM CRUM WATER WELL DRILLING (Person, firm or corporation) (Typed or printed)
Address 1803 MARYVALE LN.
City HEMET, CA. ZIP 92344
License No 534298 Date of this report _____

DWR 188 (REV. 12-86) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM 86 26355

VOID
NOT FOR PUBLIC USE
WATER CODE SEC. 13752



Miller Pump Service

Deep Well Turbine Specialists

January 16, 1989

[redacted]
Los Angeles,Ca. 90004

SUBJECT: Well test information:

Dear Mr. Dickinson;

Please find enclosed test reports on Wells # 25, and # 26, tested on January 12th., and 13th., 1989.

Well # 25 - I would suggest a pump setting of 300 feet at 150 GPM. Pressure above ground would determine the horse-power of the pump.

Well # 26 - I would suggest a pump setting of 300 feet at 550 GPM maximum in order to stay away from the air being produced from cascading water. I believe the well is capable of producing 800 GPM on a daily basis, 24 hours a day. Pressure above ground would determine the horse-power of the pump.

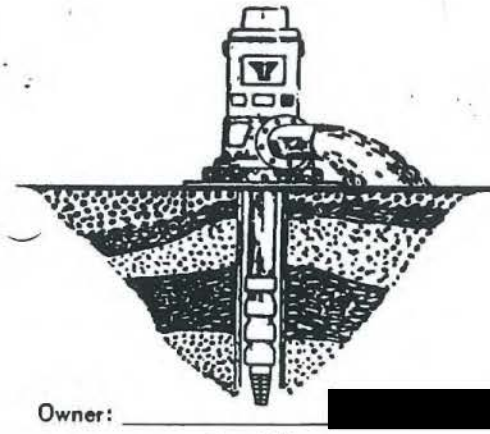
If you have any questions, please feel free to call me.

Sincerely,

Robert W. Miller

RWM/gf

24041 Mesa View Street • San Jacinto, California 92383 • Telephone (714) 654-8466



Miller Pump Service

Deep Well Turbine Specialists

FIELD TEST REPORT

Owner: [redacted] Well No. 25

Pump Mfr. Goulds Ser. No. _____ Well Dia. 8" Depth 462

Motor Mfr. _____ Ser. No. _____ Frame _____

H.P. 25 RPM 3500 Volts 400 Amps _____ Cycle _____

Power Co. _____ Meter No. _____ Kh _____ C.T. Ratio _____

Engine Mfr. Generator

TEST DATES: 1/12/89 1/13/89 _____ _____ _____

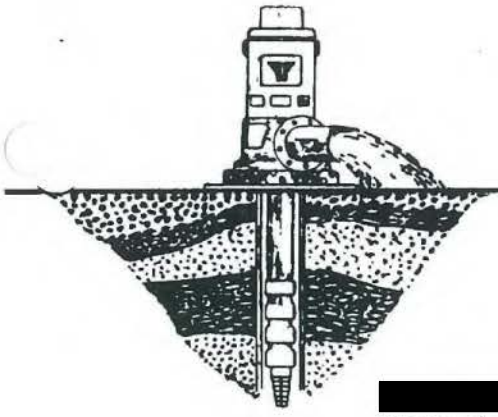
Pressure Readings in Lbs.	Airline, Static	109	104			
	Airline, Pumping					
	Discharge Head					
Airline Length – Feet		395	395			
Airline Static Pressure – Feet						
STATIC WATER LEVEL		144	155			
Airline Length – Feet						
Airline Pumping Pressure – Feet						
PUMPING LEVEL		201	252			
Discharge Head – Feet						
TOTAL HEAD – Feet		Ø	Ø			
Pumping Level – Feet		201	252			
Static Level – Feet		144	155			
DRAWDOWN		57	97			
Flow Reading	Pitot					
	Orifice					
	Other					
CAPACITY	GPM	185	165			
	Miners Inches					
GPM Per Foot Drawdown		3.24	1.70			
METER DATA: Revs/Sec						
KW Input						
HP Input						
BHP Input to Pump @ % Motor eff.						
PUMP RPM						
LOAD Volts						
LOAD Amps						
Water Horsepower						
Pump Efficiency						
Overall Efficiency						
KWH per Acre Foot						

Pump Setting: 395 ft. 395 ft. _____ _____ _____

Column Size: 3" Discharge dia. 4" meter

Bowl Assembly (Stages & Type) _____

Remarks:



Miller Pump Service

Deep Well Turbine Specialists

[redacted]

Well # 25

1/12/89

SWL - standing	water level	144 ft.	
9:30 A:M	100 GPM	109 PSI	144 ft. p/L
10:30 A:M	200 GPM	108 PSI	145 ft.
11:30 A:M	220 GPM	106 PSI	149 ft.
12:30 P:M	220 GPM	106 PSI	149 ft.
1:30 P:M	220 GPM	104 PSI	155 ft.
2:30 P:M	200 GPM	94 PSI	179 ft.
3:30 P:M	190 GPM	88 PSI	192 ft.
4:30 P:M	185 GPM	84 PSI	201 ft.

1/13/89

SWL - standing	water level	155 ft.	
8:30 A:M	220 GPM	104 PSI	155 ft. p/L
9:30 A:M	185 GPM	84 PSI	201 ft.
10:30 A:M	177 GPM	76 PSI	219 ft.
11:30 A:M	170 GPM	72 PSI	229 ft.
12:30 P:M	165 GPM	70 PSI	233 ft.
1:30 P:M	165 GPM	66 PSI	243 ft.
2:30 P:M	165 GPM	62 PSI	252 ft.
4:00 P:M	165 GPM	62 PSI	252 ft.

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Now YVWD Well #64

H

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Owner's Copy

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
WATER WELL DRILLERS REPORT

Do not fill in
No. 074476

tice of Intent No. Well #6
al Permit No. or Date 08037902

State Well No.
Other Well No.

OWNER: Name [redacted]
Address [redacted]
City Los Angeles, Ca. Zip 90057

(2) LOCATION OF WELL (See instructions):
County San Bernardino Owner's Well Number
Well address if different from above
Township 2S Range 1W Section 2
Distance from cities, roads, railroads, fences, etc.

Oak Glen Rd

WELL LOCATION SKETCH

(3) TYPE OF WORK:
New Well ☐ Deepening ☐
Reconstruction ☐
Reconditioning ☐
Horizontal Well ☐
Destruction ☒ (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:
Domestic ☐
Irrigation ☐
Industrial ☐
Test Well ☒
Stock ☐
Municipal ☐
Other ☐

(5) EQUIPMENT:
Rotary ☐ Reverse ☐
Cable ☐ Air ☒
Other ☐ Bucket ☐

(6) GRAVEL PACK:
Yes ☐ No ☑ Size
Diameter of bore 6.25B
Packed from ft. to ft.

(7) CASING INSTALLED:
Steel ☐ Plastic ☐ Concrete ☐

From ft.	To ft.	Dia. in.	Gage or Wall

(8) PERFORATIONS:
Type of perforation or size of screen

From ft.	To ft.	Slot size

(9) WELL SEAL:
Was surface sanitary seal provided? Yes ☐ No ☒ If yes, to depth ft.
Were strata sealed against pollution? Yes ☐ No ☒ Interval ft.
Method of sealing

(10) WATER LEVELS:
Depth of first water, if known ft.
Standing level after well completion ft.

(11) WELL TESTS:
Was well test made? Yes ☐ No ☒ If yes, by whom?
Type of test Pump ☐ Bailer ☐ Air lift ☐
Depth to water at start of test ft. At end of test ft.
Discharge 5-6 gal/min after hours Water temperature
Chemical analysis made? Yes ☐ No ☒ If yes, by whom?
Was electric log made? Yes ☐ No ☒ If yes, attach copy to this report

(12) WELL LOG: Total depth 360 ft. Depth of completed well 360 ft.

from ft.	to ft.	Formation (Describe by color, character, size or material)
0	145	DG
145	168	White Quartz, & black rock
168	200	DG
200	210	Fractured granite & DG
210	230	DG
230	258	Fractured granite & DG
258	265	Firmer DG
265	280	Softer- lots of white clay
280	360	Granite & DG
360		STOP

-Method of Destruction-
Hole filled in with earth & natural cuttings, as per County requirements.

Work started 8-13 19 79 Completed 8-14 19 79

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
Signed Joseph W. Grammer (Well Driller)
NAME Jack Jones Wells & Pumps (Person, firm, or corporation) (Typed or printed)
Address P.O. Box 2031
City Hemet, Ca. Zip 92343
License No. 281601 Date of this report 9-19-79

188 (REV. 7-72) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

COPY PROVIDED BY NOT FOR PUBLIC USE WATER CODE SEC. 13752

Well 5 V Completed

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or's Copy

Well 5

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
WATER WELL DRILLERS REPORT

Very Good

Do not fill in
No. 068637

ice of Intent No.
oeal Permit No. or Date

State Well No.
Other Well No.

(1) OWNER: Name [redacted]
Address [redacted]
City Los Angeles CA. Zip 90057

(2) LOCATION OF WELL (See instructions):
County San Bernardino Owner's Well Number Oak Glen Piggah Peak Truck Tr.
Well address if different from above
Township Range Section
Distance from cities, roads, railroads, fences, etc.

X Oak Glen Rd.

WELL LOCATION SKETCH

(3) TYPE OF WORK:
New Well [X] Deepening [ ]
Reconstruction [ ]
Reconditioning [ ]
Horizontal Well [ ]
Destruction [ ] (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:
Domestic [X]
Irrigation [ ]
Industrial [ ]
Test Well [ ]
Stock [ ]
Municipal [ ]
Other [ ]

(5) EQUIPMENT:
Rotary [ ] Reverse [ ]
Cable [ ] Air [X]
Other [ ] Bucket [ ]

(6) GRAVEL PACK:
Yes [ ] No [ ] Size
Diameter of bore
Packed from ft. to ft.

(7) CASING INSTALLED:
Steel [ ] Plastic [X] Concrete [ ]

From ft.	To ft.	Dia. in.	Gage or Wall
0	200	6	.125

(8) PERFORATIONS:
Type of perforation or size of screen

From ft.	To ft.	Slot size
0	200	.188

(9) WELL SEAL:
Was surface sanitary seal provided? Yes [X] No [ ] If yes, to depth ft.
Were strata sealed against pollution? Yes [ ] No [X] Interval ft.
Method of sealing Concrete & Steel

(10) WATER LEVELS:
Depth of first water, if known 115 ft.
Standing level after well completion 140 ft.

(11) WELL TESTS:
Was well test made? Yes [X] No [ ] If yes, by whom?
Type of test Pump [ ] Bailer [ ] Air lift [X]
Depth to water at start of test ft. At end of test ft
Discharge 120 gal/min after hours Water temperature
Chemical analysis made? Yes [ ] No [X] If yes, by whom?
Was electric log made? Yes [ ] No [ ] If yes, attach copy to this report

(12) WELL LOG: Total depth 200 ft. Depth of completed well 200 ft.

from ft.	to ft.	Formation (Describe by color, character, size or material)
0	50	Sealed Off
50	95	Fractured Granite & DG
95		Hard Granite
98		Broken Up
99		Hard
105		Broken Granite
115	118	Soft Broken (First Water)
120		15 GPM Hard White Rock
122	123	Broken Up
123		Hard Gray Rock
125		Hard Black Rock
127		Broken Up (More Water)
128		Hard
135		Softer Black (Broken up)
138		DG (Brown) Firm
140		50 GPM
155		Grey DG & Quartz (Firm to Soft)
160		60 GPM
165		Light Gray Rock Almost Quartz (Firm to 50 Ft.)
180		60 GPM
182		Fairly Hard
200		STOP

Work started xxxx-10-3-79 Completed 10-8 19 79

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
Jack Jones Wells & Pumps
SIGNED (Well Driller)
NAME Wayne DeBruyne (Person, firm, or corporation) (Typed or printed)
Address P.O. Box 2 2031
City Hemet Zip Ca. 92343
License No. 281601 Date of this report 10-20-80

DWR 188 (REV. 7-76) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

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NOT FOR PUBLIC USE
WATER CODE 13752

Well 5 Vert

No Good

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Owner's Copy

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
WATER WELL DRILLERS REPORT

Do not fill in
No. 074477

Notice of Intent No. Well #7
Permit No. or Date 08147901

State Well No.
Other Well No.

(1) OWNER: Name [redacted]
Address [redacted]
City Los Angeles, Ca. Zip 90057

(2) LOCATION OF WELL (See instructions):
County San Bernardino Owner's Well Number
Well address if different from above
Township 2S Range 1W Section 2
Distance from cities, roads, railroads, fences, etc.

(3) TYPE OF WORK:
New Well [X] Deepening [ ]
Reconstruction [ ]
Reconditioning [ ]
Horizontal Well [ ]
Destruction [X] (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:
Domestic [ ]
Irrigation [ ]
Industrial [ ]
Test Well [X]
Stock [ ]
Municipal [ ]
Other [ ]

WELL LOCATION SKETCH

(5) EQUIPMENT:
Rotary [ ] Reverse [ ]
Cable [ ] Air [X]
Other [ ] Bucket [ ]

(6) GRAVEL PACK:
Yes [ ] No [ ] Size
Diameter of bore 6.218
Packed from ft. to ft.

(7) CASING INSTALLED:
Steel [ ] Plastic [ ] Concrete [ ]

From ft.	To ft.	Dia. in	Gage or Wall

(8) PERFORATIONS:
Type of perforation or size of screen

From ft.	To ft.	Slot size

(9) WELL SEAL:
Was surface sanitary seal provided? Yes [ ] No [X] If yes, to depth ft.
Were strata sealed against pollution? Yes [ ] No [X] Interval ft.
Method of sealing

(10) WATER LEVELS:
Depth of first water, if known ft.
Standing level after well completion ft.

(11) WELL TESTS:
Was well test made? Yes [ ] No [X] If yes, by whom?
Type of test Pump [ ] Bailer [ ] Air lift [ ]
Depth to water at start of test ft. At end of test ft.
Discharge 125 gal/min after hours Water temperature
Chemical analysis made? Yes [ ] No [X] If yes, by whom?
Was electric log made? Yes [ ] No [X] If yes, attach copy to this report

(12) WELL LOG: Total depth 180 ft. Depth of completed well 180 ft.

ft.	to ft.	Formation (Describe by color, character, size or material)
0	65	Broken rock & clay
65	115	Broken rock & some clay
115	160	Fractured rock (60-120 GPM)
160	180	Hard rock
130		STOP----------

-Method of Destruction-

Hole filled in with earth & Natural cuttings, as per County requirements.

Work started 8-15 19 79 Completed 8-16 19 79

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief

SIGNED (Well Driller)
NAME Jack Jones Wells & Pumps
P.O. Box 2031 (Person, firm, or corporation) (Typed or printed)
Address Hemet, Ca. 92343
City Zip
License No. 281601 Date of this report 9-19-79

(REV. 7-76) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

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Owner's Copy

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
WATER WELL DRILLERS REPORT

Do not fill in
No. 074475

Notice of Intent No. Well #5
cal Permit No. or Date 08107901

State Well No.
Other Well No.

(1) OWNER: Name [redacted]
[redacted]
City Los Angeles, Ca. Zip 90057

(2) LOCATION OF WELL (See instructions):
County San Bernardino Owner's Well Number
Well address if different from above
Township 2S Range 1W Section 2
Distance from cities, roads, railroads, fences, etc.

X) OAK Glen Rd.

WELL LOCATION SKETCH

(3) TYPE OF WORK:
New Well ☒ Deepening ☐
Reconstruction ☐
Reconditioning ☐
Horizontal Well ☐
Destruction ☒ (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:
Domestic ☐
Irrigation ☐
Industrial ☐
Test Well ☒
Stock ☐
Municipal ☐
Other ☐

(5) EQUIPMENT:
Rotary ☐ Reverse ☐
Cable ☐ Air ☒
Other ☐ Bucket ☐

(6) GRAVEL PACK:
Yes ☐ No ☐ Size
Diameter of bore 6 218
Packed from to ft.

(7) CASING INSTALLED:
Steel ☐ Plastic ☐ Concrete ☐

From ft.	To ft.	Dia. in.	Gage or Wall

(8) PERFORATIONS:
Type of perforation or size of screen

From ft.	To ft.	Slot size

(9) WELL SEAL:
Was surface sanitary seal provided? Yes ☐ No ☒ If yes, to depth ft.
Were strata sealed against pollution? Yes ☐ No ☒ Interval ft.
Method of sealing

(10) WATER LEVELS:
Depth of first water, if known ft.
Standing level after well completion ft.

(11) WELL TESTS:
Was well test made? Yes ☐ No ☒ If yes, by whom?
Type of test Pump ☐ Bailer ☐ Air lift ☐
Depth to water at start of test ft. At end of test ft.
Discharge 1 gal/min after hours Water temperature
Chemical analysis made? Yes ☐ No ☒ If yes, by whom?
Was electric log made? Yes ☐ No ☒ If yes, attach copy to this report

(12) WELL LOG: Total depth 240 ft. Depth of completed well 240 ft.

from ft.	to ft.	Formation (Describe by color, character, size of material)
0	18	Clay & Broken rock
18	29	Red clay
29	70	Clay, DG, & broken rock
70	115	Soft brittle rock
115	140	Darker-Broken rock
140	145	Fractured black rock
145	154	Black Rock
154	185	Large fractured area
185	200	Soft black rock
200	210	Fractured rock
210	218	Black rock
218	220	White Quartz
220	230	Soft Rock
230	231	White Quartz
231	240	Granite & fractured rock
240		STOP

Method of Destruction-
Hole filled in with earth & natural cuttings, as per County requirements.

Work started 8-10 19 79 Completed 8-10 19 79

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
SIGNED Joseph W. Crammer (Well Driller)
NAME Jack Jones Wells & Pumps (Person, firm, or corporation) (Typed or printed)
Address P.O. Box 2031
City Hemet, Ca. Zip 92343
License No. 281601 Date of this report 9-19-79

VOID

CONTROLLED PUBLIC RECORD
NOT FOR PUBLIC RELEASE
WATER CODE SEC. 13752

FORM DWR 188 (REV. 7-76) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

WELL #3

NOW YVWD WELL 66

WATER WELL DRILLERS REPORT

(Sections 7879, 7880, 7881, 7882, Water Code)

THE RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES

Do Not Fill In

No 48782

State Well No.

Other Well No.

(1) OWNER:

Name [redacted]

Address [redacted]

ANAHEIM, CA. 92807

(2) LOCATION OF WELL:

County SAN BERNARDINO Owner's number, if any 3

Township, Range, and Section T1S, R4W, SEC. 2

Distance from cities, roads, railroads, etc. ANAHEIM, 1/2 MI. IN A NORTHERLY DIRECTION FROM INTERSECTION OF

(3) TYPE OF WORK (check): MONONGO CYN & CAMERON RDS.

New Well ☑ Deepening ☐ Reconditioning ☐ Destroying ☐

If destruction, describe material and procedure in Item 11.

(4) PROPOSED USE (check):

Domestic ☑ Industrial ☐ Municipal ☐

Irrigation ☐ Test Well ☐ Other ☐

(5) EQUIPMENT:

Rotary ☑

Cable ☐

Other ☐

(6) CASING INSTALLED:

STEEL ☑ OTHER:

SINGLE ☑ DOUBLE ☐

~~If gravel packed~~

From ft.	To ft.	Diam.	Gage or Wall	Diameter of Bore	From ft.	To ft.
0	180	2" I.D.	STD.	2 7/8"	0	180
		GALV.	PIPE	2"	180	506
				1 1/2"	506	550

Size of shoe or well ring:

Size of gravel

Describe joint COUPLED

(7) PERFORATIONS OR SCREEN:

Type of perforation or name of screen 1/8" ED. STD. GALV. PIPE

From ft.	To ft.	Perf. per row	Rows per ft.	Size in. x in.
300	394 1/2	7	13	3/16" DRILLED HOLES
		(PERFORATIONS FROM 311' TO 378')		

(8) CONSTRUCTION:

Was a surface sanitary seal provided? Yes ☑ No ☐ To what depth 150 ft

Were any strata sealed against pollution? Yes ☑ No ☐ If yes, note depth of strata

ALL STRATA - ft. 0 TO 180 FT

From ft. to ft.

Method of sealing

(9) WATER LEVELS: SEE NOTE ——— *

Depth at which water was first found, if known ft

Standing level before perforating, if known ft

Standing level after perforating or developing ft

(10) WELL TESTS: SEE NOTE ——— *

Was a pump test made? Yes ☑ No ☐ If yes, by whom? PIERSON DRILLING

Yield: 44 gal./min. with ft. drawdown after hrs.

Temperature of water 60° Was a chemical analysis made? Yes ☐ No ☑

Was electric log made of well? Yes ☐ No ☑ If yes, attach copy

(11) WELL LOG:

Total depth 550 ft. Depth of completed well 550 ft.

Formations: Describe by color, character, size of material, and structure

FT. TO FT.	ft. to ft.
0 - 30 - OVERBURDEN	
30 - 156 FT. - MED. RK.	
156 - 157 FT. - CLAY	
157 - 190 FT. - MED. RK.	
190 - 196 FT. - ALT. MED. & HARD RK.	
196 - 256 FT. - MED. RK.	
256 - 309 1/2 FT. - ALT. MED. & HARD RK.	
309 1/2 FT. - 310 FT. - CLAY	
310 - 325 FT. - ALT. MED. & HARD RK.	
325 - 326 FT. - CLAY	
326 - 497 FT. ALT. MED. & HARD RK.	
497 - 550 FT. - HARD RK.	

** WATER PICKUPS (INITIAL FLOWS)

FROM - TO FLOW

0 - 180 FT. - 1 GPM (SEALED OFF)

180 - 196 FT. - 2 GPM

196 - 310 FT. - 1 GPM

310 - 315 FT. - 2 GPM

315 - 430 FT. - 4 GPM

430 - 480 FT. - 10 GPM

480 - 512 FT. - 2 GPM

512 - 550 FT. - 17 GPM

TOTAL INITIAL FLOW - 44 GPM

NOTE: WHEN CAPPED, WELL WILL STORE WATER UNDERGROUND UNTIL THE PRESSURE AT COLLAR LEVEL REACHES 140 PSI.

* DURING DRILLING OPERATIONS AND AFTER COMPLETION, WELL WAS ALLOWED TO FLOW UN-RESTRICTED FOR PERIODS OF UP TO 48 HRS. & FLOW NEVER DROPPED BELOW 28 GPM. WHEN CAPPED, WELL STORED BACK TO MAXIMUM PRESSURE OVER-NIGHT.

Work started 2/2C 1972 . Completed 3/29 19 73

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME PIERSON DRILLING

(Person, firm, or corporation) (Typed or printed)

Address 23003 OAK LN. (P.O. BOX 1028)

CRESTLINE, CALIF. 92325

[SIGNED] Glen P. Pierson

(Well Driller)

License No. 207691 Dated 5/30 19 73

SKETCH LOCATION OF WELL ON REVERSE SIDE

DWR 188 (REV. 9-68)

ORIGINAL File with DWR

WELL # 3

WATER WELL DRILLERS REPORT

(Sections 7079, 7080, 7081, 7082, Water Code)

THE RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES

Do Not Fill In

No 48782

State Well No.

Other Well No.

(1) OWNER:

Name [redacted]

Address [redacted]

[redacted] ANAHEIM, CA. 92803

(2) LOCATION OF WELL:

County SAN BERNARDINO Owner's number, if any 3

Township, Range, and Section T1S, R1W, SEC. 2

Distance from cities, roads, railroads, etc. APPROX. 1/2 MI. IN A NORTHERLY DIRECTION FROM INTERSECTION OF [illegible] AVE. & [illegible]

(3) TYPE OF WORK (check): NEW WOOD CYN & OAK GLEN RDS.

New Well ☑ Deepening ☐ Reconditioning ☐ Destroying ☐

If destruction, describe material and procedure in Item 11.

(4) PROPOSED USE (check):

Domestic ☑ Industrial ☐ Municipal ☐

Irrigation ☐ Test Well ☐ Other ☐

(5) EQUIPMENT:

Rotary ☑

Cable ☐

Other ☐

(6) CASING INSTALLED:

STEEL ✓ OTHER:

SINGLE ☑ DOUBLE ☐

~~If gravel packed~~

From ft.	To ft.	Diam.	Gage or Wall	Diameter of Bore	From ft.	To ft.
0	180	2" I.D.	STD.	2 7/8"	0	180
		PLAST.	PIPE	2"	180	506
				1 1/2"	506	550

Size of shoe or well ring:

Size of gravel

Describe joint COUPLED

(7) PERFORATIONS OR SCREEN:

Type of perforation or name of screen 1/4" STD. SCH. PLAST. PIPE

From ft.	To ft.	Perf. per row	Rows per ft	Size in. x in.
300	394	2	13	1/4" DRILLED HOLES
		(PERFORATIONS FROM 311' TO 378')		

(8) CONSTRUCTION:

Was a surface sanitary seal provided? Yes ☑ No ☐ To what depth 180 ft

Were any strata sealed against pollution? Yes ☑ No ☐ If yes, note depth of strata

ALL STRATA - ft 0 TO 180 FT

From ft. to ft.

Method of sealing

(9) WATER LEVELS: SEE NOTE

Depth at which water was first found, if known ft

Standing level before perforating, if known ft

Standing level after perforating and developing ft

(10) WELL TESTS: SEE NOTE

Was a pump test made? Yes ☑ No ☐ If yes, by whom? PIERSON DRILLING

Yield: 44 gal./min. with ft. drawdown after hrs.

Temperature of water 60° Was a chemical analysis made? Yes ☐ No ☑

Was electric log made of well? Yes ☐ No ☑ If yes, attach copy

(11) WELL LOG:

Total depth 550 ft. Depth of completed well 550 ft.

Formation Describe by color, character, size of material, and structure

ft. to ft.	
0 - 30	OVERBURDEN
30 - 156 FT.	MED. RK.
156 - 157 FT.	CLAY
157 - 190 FT.	MED. RK.
190 - 196 FT.	ALT. MED. & HARD RK.
196 - 256 FT.	MED. RK.
256 - 307½ FT.	ALT. MED. & HARD RK.
307½ FT. - 310 FT.	CLAY
310 - 325 FT.	ALT. MED. & HARD RK.
325 - 376 FT.	CLAY
376 - 497 FT.	ALT. MED. & HARD RK.
497 - 550 FT.	HARD RK.

** WATER PICKUPS (INITIAL FLOWS)

CRACK TO 1" FLOW

0 - 180 FT. - 1 GPM (SEALED OFF)

180 - 196 FT. - 2 GPM

196 - 310 FT. - 1 GPM

310 - 315 FT. - 2 GPM

315 - 430 FT. - 4 GPM

430 - 480 FT. - 10 GPM

480 - 512 FT. - 2 GPM

512 - 550 FT. - 17 GPM

TOTAL INITIAL FLOW - 44 GPM

NOTE: WHEN CAPPED, WELL WILL STORE WATER UNDERGROUND UNTIL THE PRESSURE AGAINST LEVEL REACHES 45-50 PSI.

** DURING DRILLING OPERATIONS AND AFTER COMPLETION, WELL WAS ALLOWED TO FLOW UN-RESTRICTED FOR PERIODS OF UP TO 48 HRS. & FLOW NEVER DROPPED BELOW 20 GPM. WHEN CAPPED, WELL STORED BACK TO MAXIMUM PRESSURE OVER NIGHT.

Work started 2/20 19 72 Completed 3/29 19 73

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME PIERSON DRILLING

(Person, firm, or corporation) (Typed or printed)

Address 23023 OAK AVE. (P.O. BOX 1028)

CRESTLINE, CALIF. 92325

[SIGNED] Glenn P. Pierson

(Well Driller)

License No. 207691 Dated 5/30 19 73

SKETCH LOCATION OF WELL ON REVERSE SIDE

DWR 188 (REV 9-69)

ARROWHEAD

TRIPLICATE
Owner's Copy

NOW YVWD
WELL #68

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
WATER WELL DRILLERS REPORT

JUL 6 - 1982

SAN BERNARDINO COUNTY HEALTH SERVICES DEPARTMENT

Do not fill in

No. 069416

Notice of Intent No. 193717
Permit No. or Date 05068201

State Well No.
Other Well No.

OWNER: Name [redacted]
Address [redacted]
City Los Angeles Zip 90057

(2) LOCATION OF WELL (See instructions):
County San Berdo. Owner's Well Number 10
Well address if different from above In S.W. ¼ of N.W. ¼
Township 2S Range 1W Section 2
Distance from cities, roads, railroads, fences, etc. Approx. ½ mi. N. of intersection of Oak Glen rd. & Wildwood Cyn. rd.



WELL LOCATION SKETCH

(3) TYPE OF WORK:
New Well [X] Deepening [ ]
Reconstruction [ ]
Reconditioning [ ]
Horizontal Well [X]
Destruction [ ] (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:
Domestic [X]
Irrigation [ ]
Industrial [ ]
Test Well [ ]
Stock [X]
Municipal [ ]
Other [ ]

(5) EQUIPMENT:
Rotary [X] Reverse [ ]
Cable [ ] Air [ ]
Other [ ] Bucket [ ]

(6) GRAVEL PACK:
Yes [ ] No [ ] 2½" - 0 to 284
Diameter of bore 2" - 284 to 400
Packed from ft. to ft.

(7) CASING INSTALLED:
Steel [X] Plastic [ ] Concrete [ ]

From ft.	To ft.	Dia. in.	Gage or Wall	From ft.	To ft.	Slot size
0	284	2	sch. 40	283	400	3/16" drilled holes

(8) PERFORATIONS: 7½" stdl. galv. pipe
Type of perforation or size of screen

(9) WELL SEAL:
Was surface sanitary seal provided? Yes [X] No [ ] If yes, to depth 284 ft.
Were strata sealed against pollution? Yes [ ] No [X] Interval ft.
Method of sealing Grout under pressure

(10) WATER LEVELS: See note - - - - - - #
Depth of first water, if known ft.
Standing level after well completion ft.

(11) WELL TESTS: See note - - - - - - - ##
Was well test made? Yes [X] No [ ] If yes, by whom? Pierson Drilling
Type of test Flow Pump [ ] Bailer [ ] Air lift [ ]
Depth to water at start of test 67 ft At end of test 60 ft
Discharge 1 gal/min after 1 hours Water temperature
Chemical analysis made? Yes [ ] No [X] If yes, by whom?
Was electric log made? Yes [ ] No [X] If yes, attach copy to this report

(12) WELL LOG: Total depth 400 ft. Depth of completed well 400 ft.

from ft.	to ft.	Formation (Describe by color, character, size or material)
0	10	- rky overburden
10	30	- decomposed granite
30	201	- med. hard rk
201	203	- clay
203	282	- alt. med. & hard rk
282	283	- clay
283	344	- alt. med. & hard rk
344	354	- unstable fault material
354	380	- fract. med. rk
380	400	- med. hard rk

\# Water Pick-ups (Initial Flows)

From	To	Flow
0	283	- ½ gpm (sealed off)
283	344	- 4 gpm
344	350	- 55 gpm
350	380	- 8 gpm
380	400	- 0

Total initial flow - 67 gpm

Note: When capped, well will store water underground until the pressure at collar level reaches 28+ psi.

\## After completion, well was allowed to flow unrestricted for 72 hrs. During this time, flow dropped to 64 gpm. where it appeared to be holding steady.

Work started 5/10 19 82 Completed 5/21 19 82

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief

Signed (Well Driller)
NAME Pierson Drilling (Person, firm, or corporation) (Typed or printed)
Address P.O. Box 1028
City Crestline Zip 92325
License No. 304075 Date of this report 6/5/82

188 (REV. 7-76) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

YVWD #68

TRIPLICATE
Owner's Copy

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
WATER WELL DRILLERS REPORT

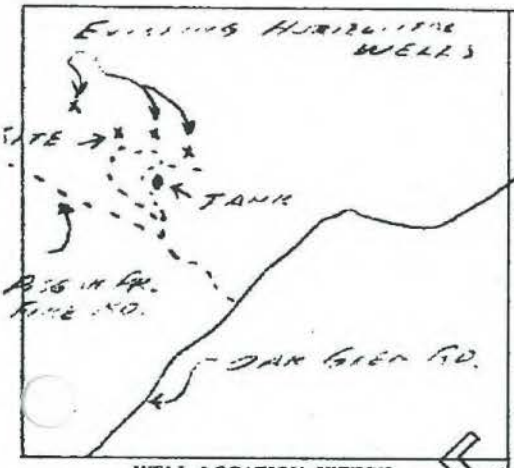
Do not fill in
No. 069416

Intent No. 193717
Local Permit No. or Date 05068201

State Well No.
Other Well No.

(1) OWNER: Name [redacted]
Address [redacted]
City Los Angeles Zip 90057

(2) LOCATION OF WELL (See instructions):
County San Bardo. Owner's Well Number 10
Well address if different from above In S.W. ¼ of N.W. ¼
Township 2S Range 1W Section 2
Distance from cities, roads, railroads, fences, etc. Approx. 1½ mi. N. of intersection of Oak Glen rd. & Wildwood Cyn. rd.



WELL LOCATION SKETCH

(3) TYPE OF WORK:
New Well X Deepening ☐
Reconstruction ☐
Reconditioning ☐
Horizontal Well X
Destruction ☐ (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:
Domestic X
Irrigation ☐
Industrial ☐
Test Well ☐
Stock ☐
Municipal ☐
Other ☐

(5) EQUIPMENT:
Rotary X Reverse ☐
Cable ☐ Air ☐
Other ☐ Bucket ☐

(6) CONSTRUCTION:
Yes ☐ No ☐
Depth of bore 2½" - 0 to 284
2" - 284 to 400
Casing installed from to ft.

(7) CASING INSTALLED:
Steel X Plastic ☐ Concrete ☐

From ft.	To ft.	Dia. in.	Gage or Wall	Slot size
0	284	2	sched. 80	

(8) PERFORATIONS:
Type of perforation or size of screen: ½" gvl. galv. pipe

From ft.	To ft.	Slot size
283	400	3/16" drilled holes

(9) WELL SEAL:
Was surface sanitary seal provided? Yes X No ☐ If yes, to depth 284 ft.
Were strata sealed against pollution? Yes ☐ No X Interval ft.
Method of sealing Grout under pressure

(10) WATER LEVELS: See note - - - - - #
Depth of first water, if known ft.
Standing level after well completion Ft.

(11) WELL TESTS: See note - - - - - - ##
Was well test made? Yes X No ☐ If yes, by whom: Pierson Drilling
Type of test Flow Pump ☐ Bailer ☐ Air lift ☐
Depth to water at start of test ft. At end of test ft
Discharge 67 gal. min after 1 hours Water temperature 60°
Chemical analysis made? Yes ☐ No X If yes, by whom?
Electric log made? Yes ☐ No X If yes, attach copy to this report

(12) WELL LOG: Total depth 400 ft. Depth of completed well 400 ft.

from ft.	to ft.	Formation (Describe by color, character, size or material)
0	10	- rky overburden
10	30	- decomposed granite
30	201	- med. hard rk
201	203	- clay
203	282	- alt. med. & hard rk
282	283	- clay
283	344	- alt. med. & hard rk
344	354	- unstable fault material
354	380	- fract. med. rk
380	400	- med. hard rk

Water Pick-ups (Initial Flows)

From	To	Flow
0	283	- ½ gpm (sealed off)
283	344	- 4 gpm
344	350	- 55 gpm
350	380	- 8 gpm
380	400	- 0

Total initial flow = 67 gpm

Note: When capped, well will store water underground until the pressure at collar level reaches 28± psi.

After completion, well was allowed to flow unrestricted for 72 hrs. During this time, flow dropped to 64 gpm. where it appeared to be holding steady.

Work started 5/10 19 82 Completed 5/21 19 82

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief

SIGNED [signature] (Well Driller)
NAME Pierson Drilling (Person, firm, or corporation) (Typed or printed)
Address P.O. Box 1028
City Crestline Zip 92325
License No. 304075 Date of this report 6/5/82

DWR 188 REV 7-76) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

COPY NOT FOR PUBLIC USE
WATER CONSERVATION

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Owner's Copy

4 Horiz

YVWD # 69

THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
WATER WELL DRILLERS REPORT

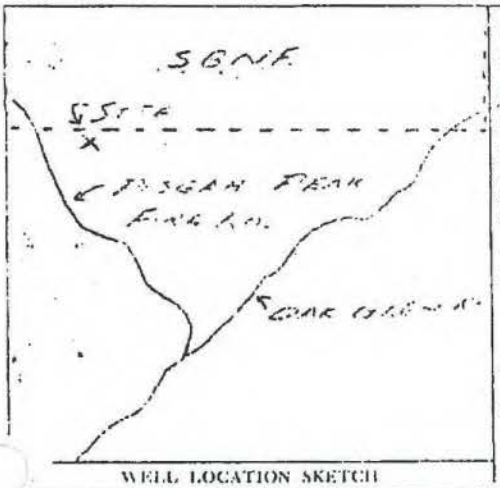
No. 04281

Source of Intent No. 10583
Local Permit No. or Date 09217802

State Well No.
Other Well No.

(1) OWNER: Name [redacted]
Address [redacted]
City Los Angeles Zip 90057

(2) LOCATION OF WELL (See instructions):
County San Berdo. Owner's Well Number #2
Well address if different from above Old Oak Glen Ranch
Township 2S. Range 1W. Section 2
Distance from cities, roads, railroads, fences, etc. Approx. 1⅓ mi. N. of intersection of Wildwood Cyn. Rd. & Oak Glen Rd.



WELL LOCATION SKETCH

(3) TYPE OF WORK:
New Well [X] Deepening [ ]
Reconstruction [ ]
Recondtioning [ ]
Horizontal Well [X]
Destruction [ ] (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:
Domestic [X]
Irrigation [ ]
Industrial [ ]
Test Well [ ]
Stock [ ]
Municipal [ ]
Other [ ]

(5) EQUIPMENT:
Rotary [X] Reverse [ ]
Cable [ ] Air [ ]
Other [X] Horizontal [ ]

(6) CASING RATS:
Yes [ ] No [ ] Size
Diameter of bore 2½" 0 to 333½'
2" 333½ to 455'
1½" 455 to 520'
Packed from

(7) CASING INSTALLED:
Steel [X] Plastic [ ] Concrete [ ]

(8) PERFORATIONS:
Type ⅛" perf. std. galv. pipe

From ft.	To ft.	Dia. in.	Cage or Wall	From ft.	To ft.	Slot size
0	333½ std.	2" galv.	I.D.	328-8	455 drilled	3/16" holes

(9) WELL SEAL:
Was surface sanitary seal provided? Yes [X] No [ ] If yes, to depth 333-6 ft.
Were strata sealed against pollution? Yes [ ] No [ ] Interval ft.
Method of sealing Grout under pressure

(10) WELL LEVELS: See note - - - - - - - *
Depth of first water, if known ft.
Standing level after well completion ft.

(11) WELL TESTS: See note - - - - - - - **
Was well test made? Yes [X] No [ ] If yes, by whom? Pierson Drilling
Type of test Flow Pump [ ] Bailer [ ] Air lift [ ]
Depth to water at start of test ft. At end of test ft.
Discharge 30 gal/min after hours Water temperature 59°
Chemical analysis made? Yes [ ] No [X] If yes, by whom?
Electric log made? Yes [ ] No [X] If yes, attach copy to this report

(12) WELL LOG: Total depth 520 ft. Depth of completed well 520 ft.

from ft.	to ft.	Formation (Describe by color, character, size or material)
0	5	loose fractured rk.
5	47	Med. hard rk.
47	49	tough clay
49	160	Med. hard rk.
160	196	alt. med. and hard rk.
196	200	very hard rk.
200	332	alt. med. & hard rk.
332	333	tough clay
333	452	Med. hard rk.
452	466	very hard rk.
466	520	alt. med.hard & hard rk.

* Water pick-ups (Initial Flows)

From	To	Flow
0	333	3 G.P.M. (sealed off)
333	390	35 G.P.M.
390	430	15 G.P.M.
430	470	10 G.P.M.

Total initial flow - 60 G.P.M.

Note - When capped, well will store water underground until the pressure at collar level reaches 30+ p.s.i.

** After completion, well was allowed to run unrestricted for periods of up to 72 hrs. several times. During these periods, the flow dropped off from its initial flow of 60 G.P.M. to approx. 30 G.P.M. within 12 hrs. and then held steady for the remainder of the test.

Work started 3/26 19 79 Completed 8/27 19 79

WELL DRILLERS STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
SIGNED (Well Driller)
NAME Pierson Drilling (Person, firm, or corporation) (Typed or printed)
Address P.O.Box 1028
City Crestline Zip 92325
License No. 304075 Date of this report 5/8/79

WR 188 (REV. 7-76) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM 43M1 SCO 7-76 SCM QUAD OUT OSP

Well 4 1-1 NOW YVWD WELL #69

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Owner's Copy

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES

Do not fill in
No. 04281

WATER WELL DRILLERS REPORT

Notice of Intent No. 10583
Permit No. or Date 0921780?

State Well No.
Other Well No.

(1) OWNER: Name [redacted]
[redacted]
City Los Angeles Zip 90057

(2) LOCATION OF WELL (See instructions):
County San Berdo. Owner's Well Number #2
Well address if different from above Old Oak Glen Ranch
Township 2S. Range 1W. Section 2
Distance from cities, roads, railroads, fences, etc. Approx. 1½ mi. N. of intersection of Wildwood Cyn. Rd. & Oak Glen Rd.



WELL LOCATION SKETCH

(3) TYPE OF WORK:
New Well [X] Deepening [ ]
Reconstruction [ ]
Recondituoning [ ]
Horizontal Well [X]
Destruction [ ] (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:
Domestic [X]
Irrigation [ ]
Industrial [ ]
Test Well [ ]
Stock [ ]
Municipal [ ]
Other [ ]

(5) EQUIPMENT:
Rotary [X] Reverse [ ]
Cable [ ] Air [ ]
Other [X] Horizontal [ ]

(6) GRAVEL PACK:
Yes [ ] No [ ] Size
Diameter of hole 2½" 0 to 333½'
Packed from 2" 333½ to 455'
1½" 455 to 520'

(7) CASING INSTALLED:
Steel [X] Plastic [ ] Concrete [ ]
Type & gauge std. galv. pipe

(8) PERFORATIONS:
1½"

From ft.	To ft.	Dia. in.	Gage or Wall	From ft.	To ft.	Slot size
0	333½ std.	2" galv.	I.D.	328-8	455 drilled	3/16" holes

(9) WELL SEAL:
Was surface sanitary seal provided? Yes [X] No [ ] If yes, to depth 333-6 ft.
Were strata sealed against pollution? Yes [ ] No [ ] Interval ft.
Method of sealing Grout under pressure

(10) WATER LEVELS: See note - - - - - - - *
Depth of first water, if known ft.
Standing level after well completion ft.

(11) WELL TESTS: See note - - - - - - - **
Was well test made? Yes [X] No [ ] If yes, by whom? Pierson Drilling
Type of test Flow Pump [ ] Bailer [ ] Air [ ]
Depth to water at start of test ft. At end of test ft.
Discharge 30 gal/min after hours Water temperature 59°
Chemical analysis made? Yes [ ] No [X] If yes, by whom?
Was electric log made? Yes [ ] No [X] If yes, attach copy to this report

(12) WELL LOG: Total depth 520 ft. Depth of completed well 520 ft.
From ft. to ft. Formation (Describe by color, character, size or material)

From	To	Formation
0	5	- loose fractured rk.
5	47	- Med. hard rk.
47	49	- tough clay
49	160	- Med. hard rk.
160	196	- alt. med. and hard rk.
196	200	- very hard rk.
200	332	- alt. med. & hard rk.
332	333	- tough clay
333	452	- Med. hard rk.
452	466	- very hard rk.
466	520	- alt. med.hard & hard rk.

* Water pick-ups (Initial Flows)

From	To	Flow
0	333	- 3 G.P.M. (sealed off)
333	390	- 35 G.P.M.
390	430	- 15 G.P.M.
430	470	- 10 G.P.M.

Total initial flow - 60 G.P.M.

Note - When capped, well will store water underground until the pressure at collar level reaches 30+ p.s.i.

** After completion, well was allowed to run unrestricted for periods of up to 72 hrs. several times. During these periods, the flow dropped off from its initial flow of 60 G.P.M. to approx. 30 G.P.M. within 12 hrs. and then held steady for the remainder of the test.

Work started 3/26 19 79 Completed 4/27 19 79

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief

SIGNED (Well Driller)
NAME Pierson Drilling (Person, firm, or corporation) (Typed or printed)
Address P.O.Box 1028
City Crestline Zip 92325
License No. 304075 Date of this report 5/8/79

DWR 188 (REV. 7-76) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

NOW YVWD WELL # 70

TRIPLICATE
Owner's Copy

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES

WATER WELL DRILLERS REPORT

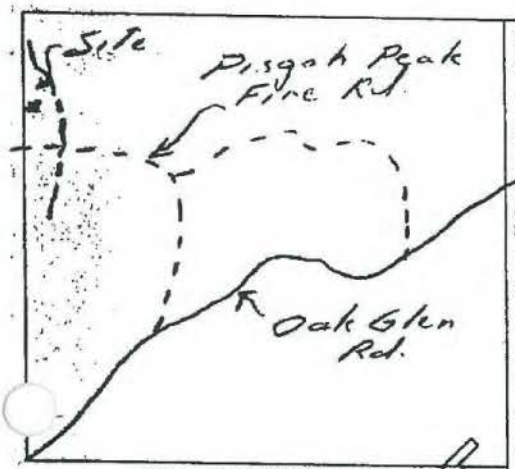
Do not fill in
No. 069452

State Well No.
Other Well No.

4 Intent No. 173755
Local Permit No. or Date 01288601

(1) OWNER: Name [redacted]
Address [redacted]
City Los Angeles Zip 90057

(2) LOCATION OF WELL (See instructions):
County San Bern. Owner's Well Number 13
Well address if different from above
Township 2S Range 1W Section 2
Distance from cities, roads, railroads, fences, etc. In the westerly portion of the SW¼ of NW¼ of NW¼, Sec. 2



WELL LOCATION SKETCH

(3) TYPE OF WORK:
New Well ☒ Deepening ☐
Reconstruction ☐
Reconditioning ☐
Horizontal Well ☐
Destruction ☐ (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:
Domestic ☐
Irrigation ☐
Industrial ☐
Test Well ☐
Stock ☐
Municipal ☐
Other ☐

(5) EQUIPMENT:
Rotary ☒ Reverse ☐
Cable ☐ Air ☐
Other Mud Rotary Bucket ☐

(6) GRAVEL PACK:
Yes ☐ No ☒ Size
Diameter of bore 7" 273-496
Packed from to ft.

(7) CASING INSTALLED:
Steel ☒ Plastic ☐ Concrete ☐

From ft.	To ft.	Dia. in.	Gage or Wall
0	273	8"	std.

(8) PERFORATIONS:
Type of perforation or size of screen 10 gauge

From ft.	To ft.	Slot size
272	476	5/16"
		drilled holes

(9) WELL SEAL:
Was surface sanitary seal provided? Yes ☒ No ☐ If yes, to depth 273 ft.
Were strata sealed against pollution? Yes ☐ No ☐ Interval ft.
Method of sealing Grout under pressure

(10) WATER LEVELS: See note **
Depth of first water, if known ft.
Standing level after well completion ft.

(11) WELL TESTS: See note **
Was well test made? Yes ☒ No ☐ If yes, by whom? Pierson Drlg.
Type of test Flow ☐ Pump ☐ Bailer ☐ Air lift ☐
Depth to water at start of test ft. At end of test ft.
Yield 38 gal/min after 72 hours Water temperature 66°
Chemical analysis made? Yes ☐ No ☒ If yes, by whom?
Was electric log made? Yes ☐ No ☒ If yes, attach copy to this report

(12) WELL LOG: Total depth 496 ft. Depth of completed well 476 ft.

from ft.	to ft.	Formation (Describe by color, character, size or material)
0	3	overburden
3	70	decomposed granite
70	128-6	Med. hk.
128-6	129	clay
129	272-6	alt. Med. & hard hk.
272-6	273	clay
273	330	Med. hk.
330	410	alt. Med. hard & hard hk.
410	456	Med. hk.
456 & 467		fault zone
467	476	alt. Med. & hard hk.

Water Pickups (Initial Flows)

From	To	Flow
0	273	0
273	370	2 gpm
374	456	2 gpm
456	467	38 gpm
467	480	45 gpm
488	496	45 gpm

Total Initial Flow - 45 gpm

Note: When capped, well will store water underground until the pressure at total level rises 214 P.S.I.

** During drilling operations and after completion, well was allowed to flow unrestricted for periods of up to 72 hrs. Initial flow of 45 gpm drops to 42 gpm in 1 hr and 38 gpm after 24 hrs. Thus no further drop was noted.

Work started 1/27 19 86 Completed 2/10 19 86

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
SIGNED [signature] (Well Driller)
NAME Pierson Drilling (Person, firm, or corporation) (Typed or printed)
Address P.O. Box 1028
City Crestline Zip 92325
License No. 304075 Date of this report 3/4/86

DWR 188 (REV. 7-76) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

SUPERSEDED BY WELL 70

YVWD # 71

TRIPLICATE
Owner's Copy

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
WATER WELL DRILLERS REPORT

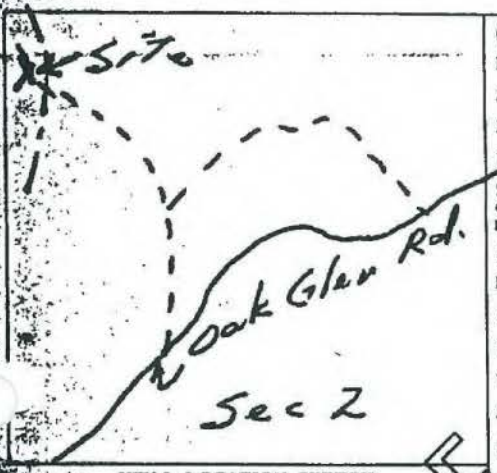
Do not fill in
No. 069445

State Well No.
Other Well No.

Notice of Intent No. 193748
Local Permit No. or Date 030885O1

(1) OWNER: Name [redacted]
Address [redacted]
City Los Angeles Zip 90057

(2) LOCATION OF WELL (See instructions):
County San Bernardino Owner's Well Number 12
Well address if different from above
Township 2N Range 1W Section 2
Distance from cities, roads, railroads, fences, etc. In SW¼ of NW¼ of NW¼, Sec. 2, T2S, R1W.



WELL LOCATION SKETCH

(3) TYPE OF WORK:
New Well ☒ Deepening ☐
Reconstruction ☐
Reconditioning ☐
Horizontal Well ☒
Destruction ☐ (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:
Domestic
Irrigation ☐
Industrial ☐
Test Well ☐
Stock ☐
Municipal ☒
Other ☐

(5) EQUIPMENT:
Rotary ☒ Reverse ☐
Cable ☐ Air ☐
Other ☐ Bucket ☐

(6) GRAVEL PACK:
Yes ☐ No ☒ Size
Diameter of hole 3"-295 2"-445
Packed from to ft.

(7) CASING INSTALLED:
Steel ☒ Plastic ☐ Concrete ☐

From ft.	To ft.	Dia. in.	Gage or Wall
0	295	3"	std.
0	399	2"	Galv. pipe

(8) PERFORATIONS:
Type of perforation or size of screen: 3" Galv. pipe

From ft.	To ft.	Slot size
294	394	none
399	445	3/16"
		drilled holes

(9) WELL SEAL:
Was surface sanitary seal provided? Yes ☒ No ☐ If yes, to depth 295 ft.
Were strata sealed against pollution? Yes ☐ No ☐ Interval ft.
Method of sealing Grout under pressure

(10) WATER LEVELS: See note — *
Depth of first water, if known ft.
Standing level after well completion ft.

(11) WELL TESTS: See note — **
Was well test made? Yes ☐ No ☐ If yes, by whom? Pierson Drilling
Type of test Pump ☐ Bailer ☐ Air lift ☐
Depth to water at start of test ft. At end of test ft.
Discharge 50 gal/min after 72 hours Water temperature 60°
Chemical analysis made? Yes ☐ No ☒ If yes, by whom?
Was electric log made? Yes ☐ No ☒ If yes, attach copy to this report

(12) WELL LOG: Total depth 445 ft. Depth of completed well 445 ft.

from ft.	to ft.	Formation (Describe by color, character, size or material)
0	3	overburden
3	105	decomposed granite
105	291	alt. Med. & Med Hard rk.
291	294	clay (fault)
294	380	alt. Hard & hard rk
380	400	hard rk & unstable (fault)
400	445	Hard rk.

*Water Pick-ups (Initial Flows)

From	To	Flow
0	294	4 gpm (sealed off)
294	350	4 gpm
350	400	4 gpm
400	410	25 gpm
410	445	10 gpm

Total Initial Flow - 60 gpm

Note: When stopped, well will store water underground until the pressure at bottom level reaches 24 psi.

**After completion, well was allowed to flow unrestricted for 72 hrs. During first 12 hrs, initial flow dropped to 50 gpm. Then no further drop was noted.

Work started 3/10 19 85 Completed 3/31 19 85

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
SIGNED Gene P. Pierson (Well Driller)
NAME Pierson Drilling (Person, firm, or corporation) (Typed or printed)
Address P.O. Box 1028
City Crestline Zip 92325
License No. 304075 Date of this report 6/6/85

DWR 188 (REV. 7-76) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

VOID FOR PUBLIC RECORDS
SOLD FOR WATER USE

NOW YVWD WELL # 72

TRIPLICATE
Owner's Copy 2S/1W-3H1

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES

WATER WELL DRILLERS REPORT

Do not fill in
No. 322799

Notice of Intent No. _____
Local Permit No. or Date 02279013

State Well No. _____
Other Well No. _____

(1) OWNER: Name [redacted]
Address [redacted]
City SAN ANGELES, CA. ZIP 90004

(2) LOCATION OF WELL (See instructions):
County SAN BERNARDINO Owner's Well Number 28
Well address if different from above OFF OAK GLEN RD IN
Township 2S Range 1W Section 3
Distance from cities, roads, railroads, fences, etc. APP. 3 MILES OFF OAK GLEN RD. IN OAK GLEN CA.

WELL LOCATION SKETCH

(3) TYPE OF WORK:
New Well [X] Deepening [ ]
Reconstruction [ ]
Reconditioning [ ]
Horizontal Well [ ]
Destruction [ ] (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:
Domestic [ ]
Irrigation [ ]
Industrial [X]
Test Well [ ]
Municipal [ ]
Other [ ]
(Describe)

(5) EQUIPMENT:
Rotary [ ] Reverse [ ]
Cable [ ] Air [X]
Other [ ] Bucket [ ]

(6) GRAVEL PACK:
Yes [X] No [ ] Size 3/8"
Diameter of bore 8"
Packed from 50 ft. 500 ft.

(7) CASING INSTALLED:
Steel [X] Plastic [X] Concrete [ ]

From ft.	To ft.	Dia. in.	Gage or Wall
0	10	8-5/8"	.250
0	500	5"	200

(8) PERFORATIONS:
Type of perforation or size of screen

From ft.	To ft.	Slot size
300	500	.032

(9) WELL SEAL:
Was surface sanitary seal provided? Yes [X] No [ ] If yes, to depth 50 ft.
Were strata sealed against pollution? Yes [ ] No [X] Interval _____ ft.
Method of sealing STEEL & CONCRETE

(10) WATER LEVELS:
Depth of first water, if known 320 ft.
Standing level after well completion 300 ft.

(11) WELL TESTS:
Was well test made? Yes [X] No [ ] If yes, by whom? DRILLER
Type of test Pump [ ] Bailer [ ] Air lift [X]
Depth to water at start of test _____ ft. At end of test _____ ft.
Discharge 60 gal/min after _____ hours Water temperature _____
Chemical analysis made? Yes [ ] No [X] If yes, by whom? _____
Was electric log made Yes [ ] No [X] If yes, attach copy to this report

(12) WELL LOG: Total depth 500 ft. Completed depth 500 ft.
from ft. 0 to 500 ft. Formation (Describe by color, character, size or material)

0-160' - FIRM BROWN DG
160-200' BROKENUP BLUE GRANITE
200-280' BROKENUP BLACK GRANITE
280-360' BROKENUP BLUE GRANITE/WATER
360-440' BROKENUP BLUE & BLACK GRANITE
440-460' BROKENUP BLUE/GREEN GRANITE/WATER
460-500' BROKENUP BLACK & BLUE GRANITE
500' - STOP

Work started 2-8 19 90 Completed 313-90 19

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
Signed _____ (Well Driller)
NAME SAM CRUM WATER WELL DRILLING, INC.
(Person, firm, or corporation) (Typed or printed)
Address 1803 MARYVALE LN.
City HEMET, CA. ZIP 92344
License No. 534298 Date of this report 3-16-90

DWR 188 (REV. 12-86) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM 86 96355

CONFIDENTIAL NOTICE PUBLIC USE WATER CODE SEC. 13752

#28

County of San Bernardino — Environmental Public Works Agency
ENVIRONMENTAL HEALTH SERVICES DEPARTMENT
385 North Arrowhead Avenue, San Bernardino, CA 92415-0160

Do Not Fill In
Permit No. 022 79013
Expiration 2-27-91
FF
FA
SN

WELL PERMIT

Well #72
2S/1W-3H1

PLEASE PRINT:

1. OWNER: Name [redacted]
Mailing Address [redacted]
City Los Angeles Zip 90004
Phone No. (213) 463-1181

2. DATE OF WORK *(approximate)*:
Start 3/1/90 Complete 3/6/90

3. WELL DRILLER *(Check One)*:
☐ Owner ☒ Contractor SAM CRUM WATER WELL DRILLING
Name

4. WELL USE *(check)*:
☐ Community ☐ Horizontal ☐ Other
☐ Individual ☒ Test
☐ Agricultural ☐ Monitoring
☐ Dairy ☐ Public Water Supply

5. TYPE OF WORK *(check)*:
☒ New ☐ Reconstruction ☐ Destruction

Items 6 through 10 to be estimated for new wells, and exact for all other wells.

6. ANNULAR SEAL: Seal Depth _____ ft.
Furnished by: ☐ Owner ☐ Contractor
☐ Driven Conductor Dia. _____ in., Wall (Gage) _____
☐ Sealing Material _____, Thickness _____ in.

7. DEPTH OF WELL *(feet)*:
Proposed 500 Existing _____
DIAMETER OF BORE *(in.)*: 8

8. CASING INSTALLED:
☐ Steel ☐ Plastic ☐ Other

From (ft.)	To (ft.)	Dia. (in.)	Wall (Gage)

GRAVEL PACK: ☐ Yes ☐ No
From _____ to _____ ft.

9. PERFORATIONS *(if applicable)*:
From _____ to _____ ft.

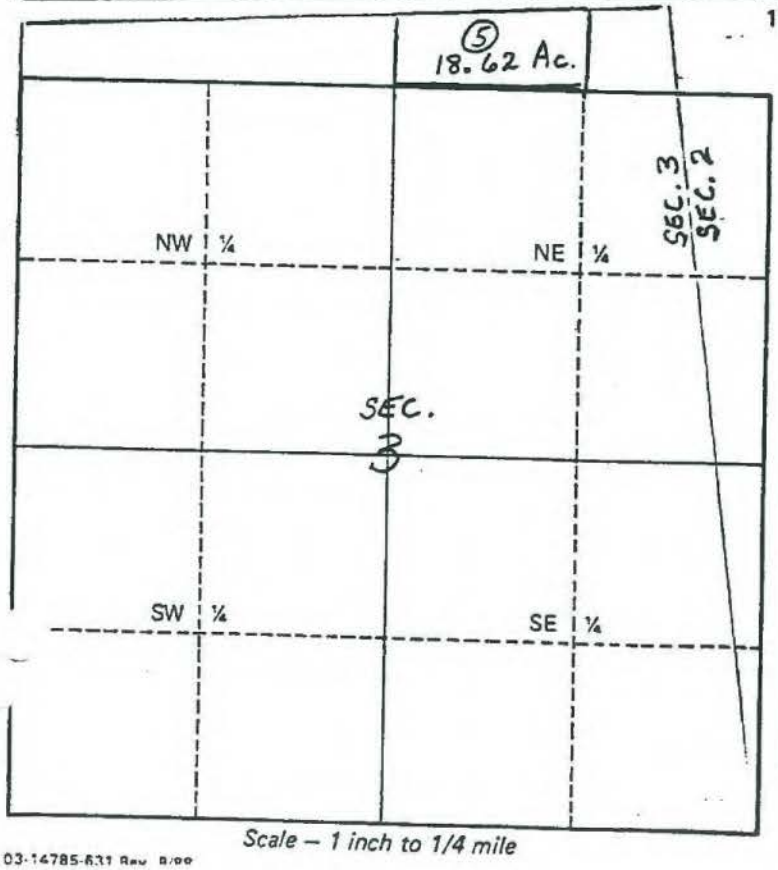
10. SEALED ZONES *(if applicable)*:
From _____ to _____ ft.

11. LOCATION INFORMATION: 20C-6D

(a) Township 2S N/S Range 1W E/W
Section 3

(b) Assessor's Parcel No. 325 011 05

(c) Solid or liquid waste disposal site within two miles?
☐ Yes ☒ No
Location: Gov. Lot #2 - Off Pisgah Peak Fire R



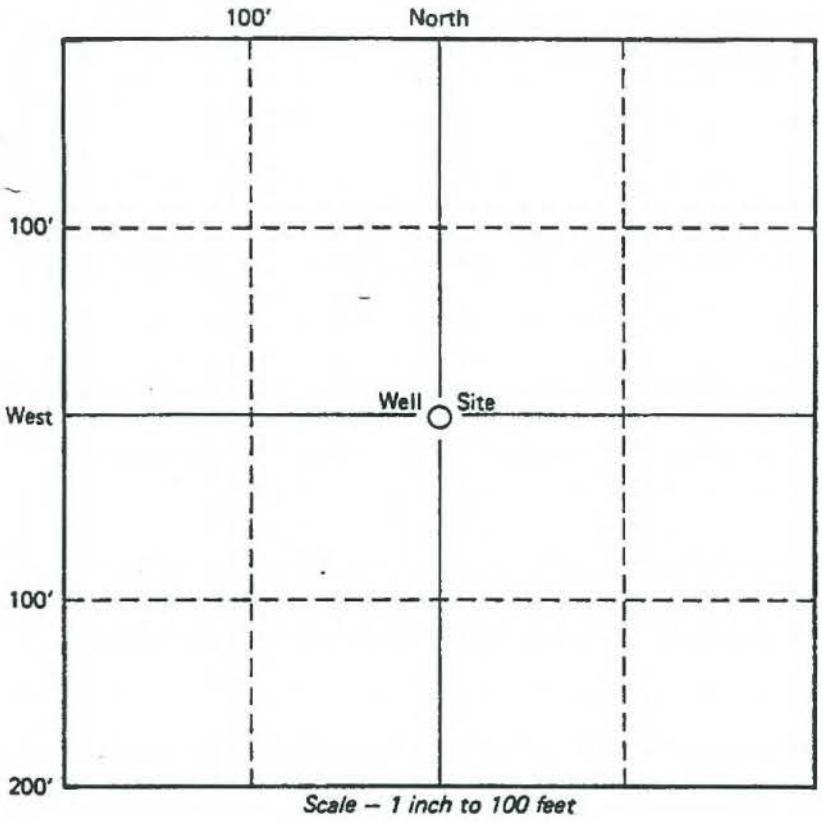
Scale – 1 inch to 1/4 mile

Do Not Fill In

SAN BERNARDINO CO.
LAND MANAGEMENT - E.P.W.A.
01 00027239 0045 CHR 02/20/90 15:01 F
005 ENV HEALTH SERV TOT PAID: 110.00
0 00000000
561 EHS 110.00

03-14785-631 Rev 8/90

well #12 2S/1W-34J



Scale – 1 inch to 100 feet

12. PLOT PLAN:

(a) In perspective to the well site, sketch and label the following items: well lot property lines, other wells *(include abandoned wells)*, sewage disposal systems *(sewers, septic tanks, leaching fields, seepage pits, cesspools)*, lakes and ponds, water courses and animals or fowl kept.

(b) Indicate the distance in *feet*, of any of the following which are within 200 ft. of the well site:

Other wells	_____
Sewers	_____
Septic tanks	_____
Leaching fields	_____
Seepage pits	_____
Cesspools	_____
Lakes and ponds	_____
Water courses	_____
Animals or fowl kept	_____

(c) ☒ None of the above are within 200 feet of the well site.

13. I have read this application and agree to comply with all laws regulating the type of work being performed. The California Labor Code requires Workers' Compensation Insurance as a prerequisite to permit issuance unless the applicant signs the following certificate:

☐ I certify that in the performance of the work for which this permit is issued, I shall not employ any person in any manner so as to become subject to the Workers' Compensation laws of California.

Owner's Signature _____ Date _____

☒ Contractor's Signature Sam Cuen Date 2/7/90 Reg. No. 134

DISPOSITION OF PERMIT

(Do Not Fill In)

☒ Approved subject to the following:

A. Notify the Department, Jon Tracey (714) 387-4666, twenty-four (24) hours in advance to make an inspection of the following operations:

☒ Prior to sealing of the annular space or filling of the conductor casing.

2/26/90 ☐ Verify the depth of the conductor (outer) casing prior to further drilling and installation of the inner casing.

AB ☒ After installation of the surface protective slab and pumping equipment.

☐ During destruction of wells, prior to pouring the sealing material.

B. Submit to the Department within thirty (30) days after completion of work, a copy of:

☒ Water Well Driller's Report ☐ Bacteriological Analysis ☐ Inorganic Chemical Analysis

☐ Radiological Analysis ☐ General Mineral ☐ Organic Chemical Analysis ☐ General Physical

C. Other Test wells shall be amended or destroyed under permit within 24 hours of completion of test work.

☐ DENIED _____

Well #18 NOW YVWD WELL #73

TRIPLICATE
Owner's Copy 2S/W-3B1

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES

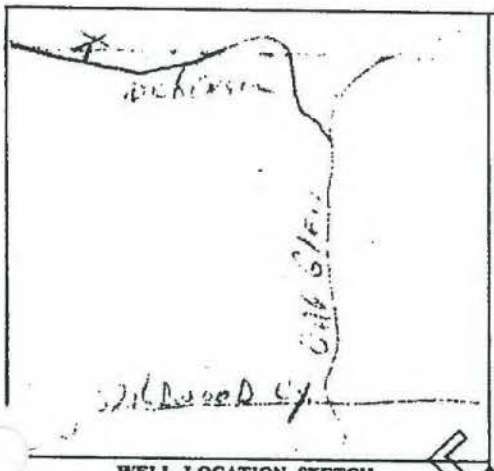
WATER WELL DRILLERS REPORT

Do not fill in
No. 204467

Notice of Intent No.
Permit No. or Date
State Well No.
Other Well No.

(1) OWNER: Name [redacted]
Address [redacted]
City Los Angeles, CA Zip 90057

(2) LOCATION OF WELL (See instructions):
County San Bernadino Owner's Well Number 18
Well address if different from above Wildwood Cyan Rd.
Township Range Section
Distance from cities, roads, railroads, fences, etc.



WELL LOCATION SKETCH

(3) TYPE OF WORK:
New Well ☒ Deepening ☐
Reconstruction ☐
Reconditioning ☐
Horizontal Well ☐
Destruction ☐ (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:
Domestic ☒
Irrigation ☐
Industrial ☐
Test Well ☐
Stock ☐
Municipal ☐
Other ☐

(5) EQUIPMENT:
Rotary ☐ Reverse ☐
Cable ☐ Air ☒
Other ☐ Bucket ☐

(6) GRAVEL PACK:
Yes ☐ No ☐ Size
Diameter of bore
Packed from to ft.

(7) CASING INSTALLED:
Steel ☐ Plastic ☒ Concrete ☐

From ft.	To ft.	Dia. in.	Gage or Wall
0	400	8	

(8) PERFORATIONS:
Type of perforation or size of screen

From ft.	To ft.	Slot size

(9) WELL SEAL:
Was surface sanitary seal provided? Yes ☒ No ☐ If yes, to depth 50 ft.
Were strata sealed against pollution? Yes ☐ No ☐ Interval ft.
Method of sealing Steel- cement

(10) WATER LEVELS:
Depth of first water, if known 240 XXXXX ft.
Standing level after well completion 145 ft.

(11) WELL TESTS:
Was well test made? Yes ☐ No ☐ If yes, by whom?
Type of test Pump ☐ Bailer ☐ Air lift ☐
Depth to water at start of test ft. At end of test ft
Discharge gal/min after hours Water temperature
Chemical analysis made? Yes ☐ No ☐ If yes, by whom?
electric log made? Yes ☐ No ☐ If yes, attach copy to this report

(12) WELL LOG: Total depth 400 ft. Depth of completed well 400 ft.

from ft.	to ft.	Formation (Describe by color, character, size or material)
0	- 20	Broken brown DG
20	- 60	Broken to hard blue green roc
60	- 80	Broken up blue green rock
80	-120	clay brown white mix
1200	-140	Blck granite
140	-180	Broken up blue/green
180	-200	Brown & green boke up
200	-240	water brown
240	-280	brown & green broken up
280	-320	water- green broken up
320	-340	green & brown broken up
340	-400	Black granite- STOP

Work started 1-10 19 88 Completed 1-26 19 88

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
SIGNED (Well Driller)
NAME Jack Jones WElls & Pumps
(Person, firm, or corporation) (Typed or printed)
Address P.O. Box 250
City Hemet, CA 92343
License No. 436011 Date of this report 3-18-88

VOID
NOT FOR PUBLIC USE
WATER CODE SEC. 13752
COPY

DWR 188 (REV. 7-76) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

2S/1W-3A1 NOW YVWD WELL # 74

ORIGINAL

File with DWR

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
WATER WELL DRILLERS REPORT

Do not fill in
No. 217126

Notice of Intent No.
Permit No. or Date 08158807

State Well No.
Other Well No.

(1) OWNER: Name [redacted]
Address [redacted]
City Los Angeles, CA Zip 90004

(2) LOCATION OF WELL (See instructions):
County San Bernardino Owner's Well Number 20
Well address if different from above Parcel 325-011-08
Township 2S Range 1W Section 3
Distance from cities, roads, railroads, fences, etc.

WELL LOCATION SKETCH

(3) TYPE OF WORK:
New Well [X] Deepening [ ]
Reconstruction [ ]
Reconditioning [ ]
Horizontal Well [ ]
Destruction [ ] (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:
Domestic [X]
Irrigation [ ]
Industrial [ ]
Test Well [ ]
Stock [ ]
Municipal [ ]
Other [ ]

(5) EQUIPMENT:
Rotary [ ] Reverse [ ]
Cable [ ] Air [X]
Other [ ] Bucket [ ]

(6) GRAVEL PACK:
Yes [X] No [ ] Size 6x4 Well Rock
Diameter of bore 12½"
Packed from 50 to 583 ft.

(7) CASING INSTALLED:
Steel [X] Plastic [ ] Concrete [ ]

From ft.	To ft.	Dia. in.	Gage or Wall
0	200	8-5/8	.188

(8) PERFORATIONS:
Type of perforation or size of screen

From ft.	To ft.	Slot size
200	583	.100

(9) WELL SEAL:
Was surface sanitary seal provided? Yes [X] No [ ] If yes, to depth 50 ft.
Were strata sealed against pollution? Yes [X] No [ ] Interval ft.
Method of sealing

(10) WATER LEVELS:
Depth of first water, if known ft.
Standing level after well completion 232 ft.

(11) WELL TESTS:
Was well test made? Yes [X] No [ ] If yes, by whom?
Type of test Pump [ ] Bailer [ ] Air lift [ ]
Depth to water at start of test ft. At end of test ft.
Discharge gal/min after hours Water temperature
Chemical analysis made? Yes [ ] No [ ] If yes, by whom?
Electric log made? Yes [ ] No [ ] If yes, attach copy to this report

(12) WELL LOG: Total depth 0 ft. Depth of completed well 583 ft.
from ft. to ft. Formation (Describe by color, character, size or material)

0 - 18 - Fine sand & brown clay.
18 - 39 - Fine sand & shale.
39 - 78 - Fine sand & rock with shale mix.
78 - 129 - Fine & medium coarse sand with streaks of shale & granite.
129 - 318 - Decomposed granite - blue in color.
318 - 583 - Decomposed granite - solid formation - blue green in color.

Work started 19 Completed 19

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
SIGNED (Well Driller)
NAME William Steese - SoCal Pump & Well Service (Person, firm, or corporation) (Typed or printed)
Address 585 W. Valley Blvd.
City Bloomington, CA Zip 92316
License No. 510836 Date of this report 11/29/88

DWR 188 (REV 7-76) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

VOID UNLESS USED FOR PUBLIC WATER SUPPLY
VOID UNLESS USED FOR PUBLIC WATER SUPPLY 1752

Well #16 NOW YVWD WELL # 75

TRIPLICATE
Owner's Copy

1S/1W-34Q1

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
WATER WELL DRILLERS REPORT

Do not fill in
No. 193900

Notice of Intent No.
Permit No. or Date.

State Well No.
Other Well No.

(1) OWNER: Name [redacted]
Address [redacted]
City Los Angeles, Ca. Zip 90057

(2) LOCATION OF WELL (See instructions):
County San Bernadino Owner's Well Number
Well address if different from above
Township Range Section
Distance from cities, roads, railroads, fences, etc.

WELL LOCATION SKETCH

(3) TYPE OF WORK:
New Well ☒ Deepening ☐
Reconstruction ☐
Reconditioning ☐
Horizontal Well ☐
Destruction ☐ (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:
Domestic ☐
Irrigation ☐
Industrial ☐
Test Well ☐
Stock ☐
Municipal ☐
Other ☐

(5) EQUIPMENT:
Rotary ☐ Reverse ☐
Cable ☐ Air ☒
Other ☐ Bucket ☐

(6) GRAVEL PACK:
Yes ☐ No ☐ Size
Diameter of bore
Packed from to ft.

(7) CASING INSTALLED:
Steel ☐ Plastic ☒ Concrete ☐

From ft.	To ft.	Dia. in.	Gage or Wall
	420	8"	

(8) PERFORATIONS:
Type of perforation or size of screen

From ft.	To ft.	Slot size

(9) WELL SEAL:
Was surface sanitary seal provided? Yes ☒ No ☐ If yes, to depth 50 ft.
Were strata sealed against pollution? Yes ☐ No ☒ Interval ft.
Method of sealing Cement-Steel/10"

(10) WATER LEVELS:
Depth of first water, if known 240 ft.
Standing level after well completion 145 ft.

(11) WELL TESTS:
Was well test made? Yes ☒ No ☐ If yes, by whom?
Type of test Pump ☐ Bailer ☐ Air lift ☒
Depth to water at start of test ft. At end of test ft.
Discharge 150 gal/min after hours Water temperature
Chemical analysis made? Yes ☐ No ☒ If yes, by whom?
Electric log made? Yes ☐ No ☒ If yes, attach copy to this report

(12) WELL LOG: Total depth 420 ft. Depth of completed well 420 ft.

from ft.	to ft.	Formation (Describe by color, character, size or material)
0	20	Broke Up Brown DG
20	40	Broke Up blue/green rock
40	60	Hard blue/green rock
60	80	Broke Up Blue/green rock
80	100	Hard blue/green rock
100	120	Clay brown/white mix broke up
120	140	Black gran. & blue/green mix
140	160	Broke Up Blue/Green
160	180	Brke Up Blue/ Green
180	200	Broke Up blue/green rock
200	220	Brown & green broke up
220	240	" " water
240	260	water " "
260	280	" " water
280	300	" " water
300	320	" " water
320	340	" " water
340	360	" " water
360	380	" " water
380	400	" " water
400	420	Hard black granite

Work started 3-13 19 87 Completed 4-1 19 87

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

SIGNED (Well Driller)

NAME Ron Engeldinger (Person, firm, or corporation) (Typed or printed)
Address P.O. Box 250
City Hemet, Ca. Zip 92343
License No. 294625 Date of this report 4-16-878

188 (REV. 7-76) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

Well 10b

*The free Adobe Reader may be used to view and complete this form. However, software must be purchased to complete, save, and reuse a saved form.

File Original with DWR

State of California

Well Completion Report

Refer to Instruction Pamphlet

No. e0107583

Page 1 of 1

Owner's Well Number MW-4

Date Work Began 11/18/2009 Date Work Ended 11/18/2009

Local Permit Agency Riverside County Department of Environmental Health

Permit Number WP 20441 Permit Date 11/10/09

DWR Use Only – Do Not Fill In

State Well Number/Site Number

N W

Latitude Longitude

APN/TRS/Other

Geologic Log

Orientation ◉ Vertical ○ Horizontal ○ Angle Specify

Drilling Method Hollow Stem Auger Drilling Fluid Air

Depth from Surface Feet	to Feet	Description (Describe material, grain size, color, etc)
0	4	Silty sand, fine to medium with gravel, light brown
4	9	Sand, fine to coarse with silt and gravel, brown
9	27	Silty sand, fine with medium and clay, brown
27	46	Silty sand, fine to medium with clay, brown
46	54	Silty sand, fine, gray brown
54	82	Sandy silt, fine with clay, brown

Total Depth of Boring 82 Feet

Total Depth of Completed Well 80 Feet

Well Owner

Name [redacted]

Mailing Address [redacted]

City Yucaipa State CA Zip 92399

Well Location

Address San Timoteo Canyon Road

City Calimesa County Riverside

Latitude 33 Deg. 59 Min. 15 Sec. N Longitude 117 Deg. 8 Min. 4 Sec. W

Datum NAD83 Decimal Lat. 33.987 Decimal Long. 117.134

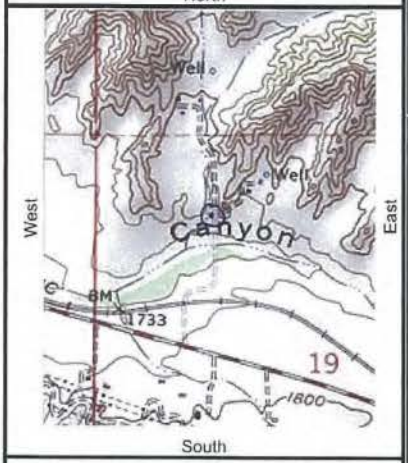
APN Book 413 Page 380 Parcel 004

Township 2S Range 2W Section 19

Location Sketch

(Sketch must be drawn by hand after form is printed.)

North



South

Illustrate or describe distance of well from roads, buildings, fences, rivers, etc. and attach a map. Use additional paper if necessary. **Please be accurate and complete.**

Activity

◉ New Well
○ Modification/Repair
○ Deepen
○ Other
○ Destroy
Describe procedures and materials under "GEOLOGIC LOG"

Planned Uses

○ Water Supply
☐ Domestic ☐ Public
☐ Irrigation ☐ Industrial
○ Cathodic Protection
○ Dewatering
○ Heat Exchange
○ Injection
◉ Monitoring
○ Remediation
○ Sparging
○ Test Well
○ Vapor Extraction
○ Other

Water Level and Yield of Completed Well

Depth to first water 60 (Feet below surface)

Depth to Static Water Level (Feet) Date Measured

Estimated Yield * (GPM) Test Type

Test Length (Hours) Total Drawdown (Feet)

*May not be representative of a well's long term yield.

Casings

Depth from Surface Feet	to Feet	Borehole Diameter (Inches)	Type	Material	Wall Thickness (Inches)	Outside Diameter (Inches)	Screen Type	Slot Size if Any (Inches)
0	65	10	Blank	PVC Sch. 40		4		
65	80	10	Screen	PVC Sch. 40		4	Milled Slots	0.020

Annular Material

Depth from Surface Feet	to Feet	Fill	Description
0	51	Cement	seal
51	55	Bentonite	seal
55	80	Filter Pack	sand

Attachments

☐ Geologic Log
☐ Well Construction Diagram
☐ Geophysical Log(s)
☐ Soil/Water Chemical Analyses
☐ Other

Attach additional information, if it exists.

Certification Statement

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief

Name Jay J. Martin for C.H.J., Incorporated, Vice President, CEG 1529
Person, Firm or Corporation

1355 E. Cooley Drive Colton CA 92324
Address City State Zip

Signed [signature] 3/18/2010 766402
C-57 Licensed Water Well Contractor Date Signed C-57 License Number

DWR 188 REV. 1/2006

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

MONITORING WELL NO. MW-4

Date Drilled: 11/18/09 Client: [redacted]

Equipment: B-61 Hollow-Stem Auger Driving Weight / Drop: 140 lbs./30 in.

Coordinates: 33.987°-117.134° Logged by: VJR Groundwater First Encountered (ft): 60.0

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	SAMPLE NO.	SAMPLES: DRIVE	SAMPLES: BULK	BLOWS/FOOT (Equiv. SPT)	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
		(SM) Silty Sand, fine to medium, gravel, light brown	Native	X		4 4 4			SPT
5		(SP-SM) Sand, fine to coarse with silt, gravel, brown		X		5 7 10			SPT
10		(SM) Silty Sand, fine with medium, clay, brown		X		5 8 13			SPT
15				X		6 9 13			SPT
20				X		6 10 18			SPT
25		(SM) Silty Sand, fine to medium, clay, brown							
30				X		9 15 19			SPT

MONITORING_WELL_09631-8.GPJ CHJ.GDT 11/24/09

C.H.J.

WELLS - SAN TIMOTEO & LIVE OAK CANYONS
RIVERSIDE COUNTY, CALIFORNIA

Job No. 09631-8

Enclosure B-4a

MONITORING WELL NO. MW-4

Date Drilled: 11/18/09 Client: [redacted]

Equipment: B-61 Hollow-Stem Auger Driving Weight / Drop: 140 lbs./30 in.

Coordinates: 33.987°-117.134° Logged by: VJR Groundwater First Encountered (ft): 60.0

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	SAMPLE NO.	SAMPLES: DRIVE	SAMPLES: BULK	BLOWS/FOOT (Equiv. SPT)	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
40				X		10 20 26			SPT
45		(SM) Silty Sand, fine, gray brown							
50				X		8 14 28			SPT
55		(ML) Sandy Silt, fine with clay, brown							
60			▼ Groundwater	X		9 16 24			SPT
65									

MONITORING_WELL 09631-8.GPJ CHJ.GDT 11/24/09

C.H.J.

WELLS - SAN TIMOTEO & LIVE OAK CANYONS
RIVERSIDE COUNTY, CALIFORNIA

Job No. 09631-8

Enclosure B-4b

MONITORING WELL NO. MW-4

Date Drilled: 11/18/09 Client: [redacted]

Equipment: B-61 Hollow-Stem Auger Driving Weight / Drop: 140 lbs./30 in.

Coordinates: 33.987°-117.134° Logged by: VJR Groundwater First Encountered (ft): 60.0

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	SAMPLE NO.	SAMPLES: DRIVE	SAMPLES: BULK	BLOWS/FOOT (Equiv. SPT)	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
				X		45 50/3"			SPT
75									
80				X		14 27 46			SPT
		END OF BORING	Refusal						
		REFUSAL AT 81.5', NO BEDROCK NO FILL, SLIGHT CAVING PERCHED LAYER OF GROUNDWATER ENCOUNTERED AT 60.0'							
85									
90									
95									
100									

MONITORING_WELL 09631-8.GPJ CHJ.GDT 11/24/09

C.H.J.

WELLS - SAN TIMOTEO & LIVE OAK CANYONS
RIVERSIDE COUNTY, CALIFORNIA

Job No. 09631-8

Enclosure B-4c

MW 107

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File Original with DWR

State of California

Well Completion Report

Refer to Instruction Pamphlet

No. e0115380

Page 1 of 2

Owner's Well Number

Date Work Began 07/29/2010 Date Work Ended 8/4/2010

Local Permit Agency San Bernardino Department of Public Health

Permit Number 7010070342 Permit Date 7/23/10

DWR Use Only – Do Not Fill In

State Well Number/Site Number

Latitude N Longitude W

APN/TRS/Other

Geologic Log

Orientation ◉ Vertical ○ Horizontal ○ Angle Specify

Drilling Method Reverse Rotary Drilling Fluid Fresh Water

Depth from Surface Feet	to Feet	Description Describe material, grain size, color, etc
35	90	Sand Gravel
90	120	Sand Clay
120	200	Sand Gravel
200	250	Sand Gravel Clay
250	310	Sand Gravel
310	340	Sand Gravel Clay
340	417	Sand Gravel

Total Depth of Boring 417 Feet

Total Depth of Completed Well 415 Feet

Well Owner

Name [redacted]

Mailing Address [redacted]

City [redacted] State CA. Zip 92399

Well Location

Address San Timoteo Canyon Road

City Yucaipa County San Bernardino

Latitude Deg. Min. Sec. N Longitude Deg. Min. Sec. W

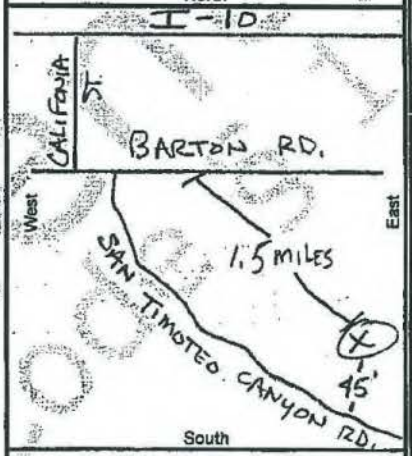
Datum Decimal Lat. Decimal Long.

APN Book 0175 Page 221 Parcel 06

Township 2S Range 3W Section 4

Location Sketch

(Sketch must be drawn by hand after form is printed.)



Illustrate or describe distance of well from roads, buildings, fences, rivers, etc. and attach a map. Use additional paper if necessary. Please be accurate and complete.

Activity

◉ New Well
○ Modification/Repair
○ Deepen
○ Other
○ Destroy
Describe procedures and materials under "GEOLOGIC LOG"

Planned Uses

○ Water Supply
☐ Domestic ☐ Public
☐ Irrigation ☐ Industrial
○ Cathodic Protection
○ Dewatering
○ Heat Exchange
○ Injection
◉ Monitoring
○ Remediation
○ Sparging
○ Test Well
○ Vapor Extraction
○ Other

Water Level and Yield of Completed Well

Depth to first water (Feet below surface)

Depth to Static Water Level (Feet) Date Measured

Estimated Yield* (GPM) Test Type

Test Length (Hours) Total Drawdown (Feet)

*May not be representative of a well's long term yield.

Casings

Depth from Surface Feet	to Feet	Borehole Diameter (Inches)	Type	Material	Wall Thickness (Inches)	Outside Diameter (Inches)	Screen Type	Slot Size if Any (Inches)
0	35	32	Conductor	Low Carbon Steel	.250	20		
0	340	17.5	Blank	PVC Sch. 80	.214	5		
340	360	17.5	Screen	PVC Sch. 80	.214	5		0.050
0	285	17.5	Blank	PVC Sch. 80	.214	5		
285	305	17.5	Screen	PVC Sch. 80	.214	5		0.050
0	120	17.7	Blank	PVC Sch. 80	.214	5		

Annular Material

Depth from Surface Feet	to Feet	Fill	Description
0	225	Filter Pack	8x16 Midcal
225	230	Fill	Sand
230	250	Bentonite	Seal
250	255	Fill	Sand
255	310	Filter Pack	8x16 Gravel
310	315	Fill	Sand

Attachments

☐ Geologic Log
☐ Well Construction Diagram
☐ Geophysical Log(s)
☐ Soil/Water Chemical Analyses
☐ Other

Attach additional information, if it exists.

Certification Statement

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief

Name Bakersfield Well & Pump Co.
Person, Firm or Corporation

7212 Fruitvale Ave Address Bakersfield City CA State 93308 Zip

Signed C-57 Licensed Water Well Contractor 8/20/2010 Date Signed 440537 C-57 License Number

DWR 188 REV. 1/2006

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

*The free Adobe Reader may be used to view and complete this form. However, software must be purchased to complete, save, and reuse a saved form.

File Original with DWR

State of California

Well Completion Report

Refer to Instruction Pamphlet

No. e0115380

Page 2 of 2

Owner's Well Number

Date Work Began 07/29/2010 Date Work Ended 8/4/2010

Local Permit Agency San Bernardino Department of Public Health

Permit Number 7010070342 Permit Date 7/23/10

DWR Use Only – Do Not Fill In

State Well Number/Site Number

Latitude N Longitude W

APN/TRS/Other

Geologic Log

Orientation ◉ Vertical ○ Horizontal ○ Angle Specify

Drilling Method Reverse Rotary Drilling Fluid Fresh Water

Depth from Surface Feet	to Feet	Description: Describe material, grain size, color, etc
35	90	Sand Gravel
90	120	Sand Clay
120	200	Sand Gravel
200	250	Sand Gravel Clay
250	310	Sand Gravel
310	340	Sand Gravel Clay
340	417	Sand Gravel

Total Depth of Boring 417 Feet

Total Depth of Completed Well 415 Feet

Well Owner

Name [redacted]

Mailing Address [redacted]

City [redacted] State CA Zip 92399

Well Location

Address San Timoteo Canyon Road

City Yucaipa County San Bernardino

Latitude Deg. Min. Sec. N Longitude Deg. Min. Sec. W

Datum Decimal Lat. Decimal Long.

APN Book 0175 Page 221 Parcel 06

Township 2S Range 3W Section 4

Location Sketch

(Sketch must be drawn by hand after form is printed.)

North

West East

South

Illustrate or describe distance of well from roads, buildings, fences, rivers, etc. and attach a map. Use additional paper if necessary. Please be accurate and complete.

Activity

◉ New Well

○ Modification/Repair

○ Deepen

○ Other

○ Destroy

Describe procedures and materials under "GEOLOGIC LOG"

Planned Uses

○ Water Supply

☐ Domestic ☐ Public

☐ Irrigation ☐ Industrial

○ Cathodic Protection

○ Dewatering

○ Heat Exchange

○ Injection

◉ Monitoring

○ Remediation

○ Sparging

○ Test Well

○ Vapor Extraction

○ Other

Water Level and Yield of Completed Well

Depth to first water (Feet below surface)

Depth to Static Water Level (Feet) Date Measured

Estimated Yield * (GPM) Test Type

Test Length (Hours) Total Drawdown (Feet)

*May not be representative of a well's long term yield.

Casings

Depth from Surface Feet	to Feet	Borehole Diameter (Inches)	Type	Material	Wall Thickness (Inches)	Outside Diameter (Inches)	Screen Type	Slot Size If Any (Inches)
120	140	17.5	Screen	PVC Sch. 80	.214	5		0.050

Annular Material

Depth from Surface Feet	to Feet	Fill	Description
315	330	Bentonite	Seal
330	335	Fill	Sand
335	415	Filter Pack	8x16 Midcal

Attachments

☐ Geologic Log

☐ Well Construction Diagram

☐ Geophysical Log(s)

☐ Soil/Water Chemical Analyses

☐ Other

Attach additional information, if it exists.

Certification Statement

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief

Name Bakersfield Well & Pump Co.
Person, Firm or Corporation

7212 Fruitvale Ave Bakersfield CA 93308
Address City State Zip

Signed Kevin Dewalt 8/20/2010 440537
C-57 Licensed Water Well Contractor Date Signed C-57 License Number

WR 188 REV. 1/2006

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

Appendix 3-B

Monitoring Forms and Protocols

WATER-LEVEL MEASUREMENT FIELD FORM

Date (YYYY/MM/DD): Site ID:

Well Type: Production / Monitoring / Private Measuring Agency/Entity:

Well Pumping? Is Water Level Static?

Method of Water Level Measurement (see below): Site Status (see below):

Measuring Equipment ID: Measuring Point Elevation (ft NAVD88):

WATER LEVEL DATA

Time of Measurement					
Measurement (feet)					
Tape Correction (feet)					
Water Level below MP (feet)					
Measuring Point Correction					
Water Level below Land Surface					
Water Elevation (ft NAVD88)					

Measured by: Comments:*

*Comments should include quality concerns and changes that affect the representativeness of the measurements (e.g., changes in MP elevation, ownership, well operations, access to measure DTW, etc.)

Site Status: D = dry; O = obstructed; P = pumping; R = recently pumped and recovering; NP = nearby pumping; V = foreign substance; WD = well destroyed; SW = surface water effects; Z = other; S = Static

Method of Water Level Measurement: A = airline; B = analog; C = calibrated airline; E = estimated; G = pressure gauge; H = calibrated pressure gage; M = manometer; R = reported; S = steel tape; T = electric tape; V = calibrated electric tape; Z = other.

NOTES:

Measuring Protocol:

1. Check circuitry of electrical tape before lowering the probe into the well by dipping probe into tap water.
2. Make all readings using the same indicator for consistency (light intensity or sound).
3. Lower electrode probe slowly into the well until the indicator shows that the circuit is closed and contact with the water surface is made. Place the nail of the index finger on the insulated wire at the MP (Measuring Point) and read the depth-to-water.
4. Record time of measurement. Record depth to water in the row “Measurement (feet)”. If the tape has been repaired and spliced or has a calibration correction, subtract the “Tape Correction” value from the “Measurement” value and record the difference in the row “Water Level below MP”.
5. Pull the tape up and make a check measurement by repeating steps 3-4. Record the check measurement in column 2. If check measurement does not agree with the original measurement within 0.02 foot, continue to make measurements until the reason of lack of agreement is determined or the results are shown to be reliable. If more than 2 measurements are made, use best judgment to select measurement most representative of field conditions.
6. Disinfect and rinse that part of tape that was submerged below water. Dry tape and rewind.

Format instructions and notes:

Site ID:	Well identified or State Well No.
MP:	measuring point
ft NAVD88:	feet above the National Vertical Datum of 1988.
Measuring Equipment ID:	serial number or identifier of measuring equipment

WELL PRODUCTION RECORD

Date	Time	Well ID	Totalizer Reading (Gallons)	Instantaneous Pumping Rate (GPM)	Estimated Pumping Rate (GPM)	Model and Make of Totalizer

WATER QUALITY FIELD FORM

Date (YYYY/MM/DD): Site ID:

Well Type: Production / Monitoring / Private Measuring Agency/Entity:

Well Pumping? If so, how long? Is Initial Water Level Static?

Method of Well Purging (see below): Site Status (see below):

Purging Equipment ID: Water Quality Meter ID:

Purge Volume Calculation:

[A] Total depth of well casing (ft bls): [C] Well Casing Inside Diameter (inches):

[B] Static depth to water, if not pumping (ft bls): [D] Length of Water Column, [A] - [B] (ft):

Purge Volume (3 Casing Volumes), ([D] * π/4 * ([C]/12)^2) * 3 =

WATER QUALITY PARAMETERS

Time	Purge Rate	Temperature (^{o}C)	pH	Conductivity ( )	Oxidation-Reduction Potential (mV)	Dissolved Oxygen (mg/L)	Turbidity (NTUs)

Measured by: Comments:*

WATER QUALITY FIELD FORM

*Comments should include quality concerns and changes that affect the representativeness of the measurements (e.g., changes in pump placement, ownership, well operations, access to sampling port, etc.)

Site Status: D = dry; O = obstructed; P = pumping; R = recently pumped and recovering; NP = nearby pumping; V = foreign substance; WD = well destroyed; SW = surface water effects; Z = other; S = Static

Method of Well Purging: B = bailer; D = dedicated submersible pump; P = portable submersible pump; T = dedicated turbine pump; S = peristaltic pump.

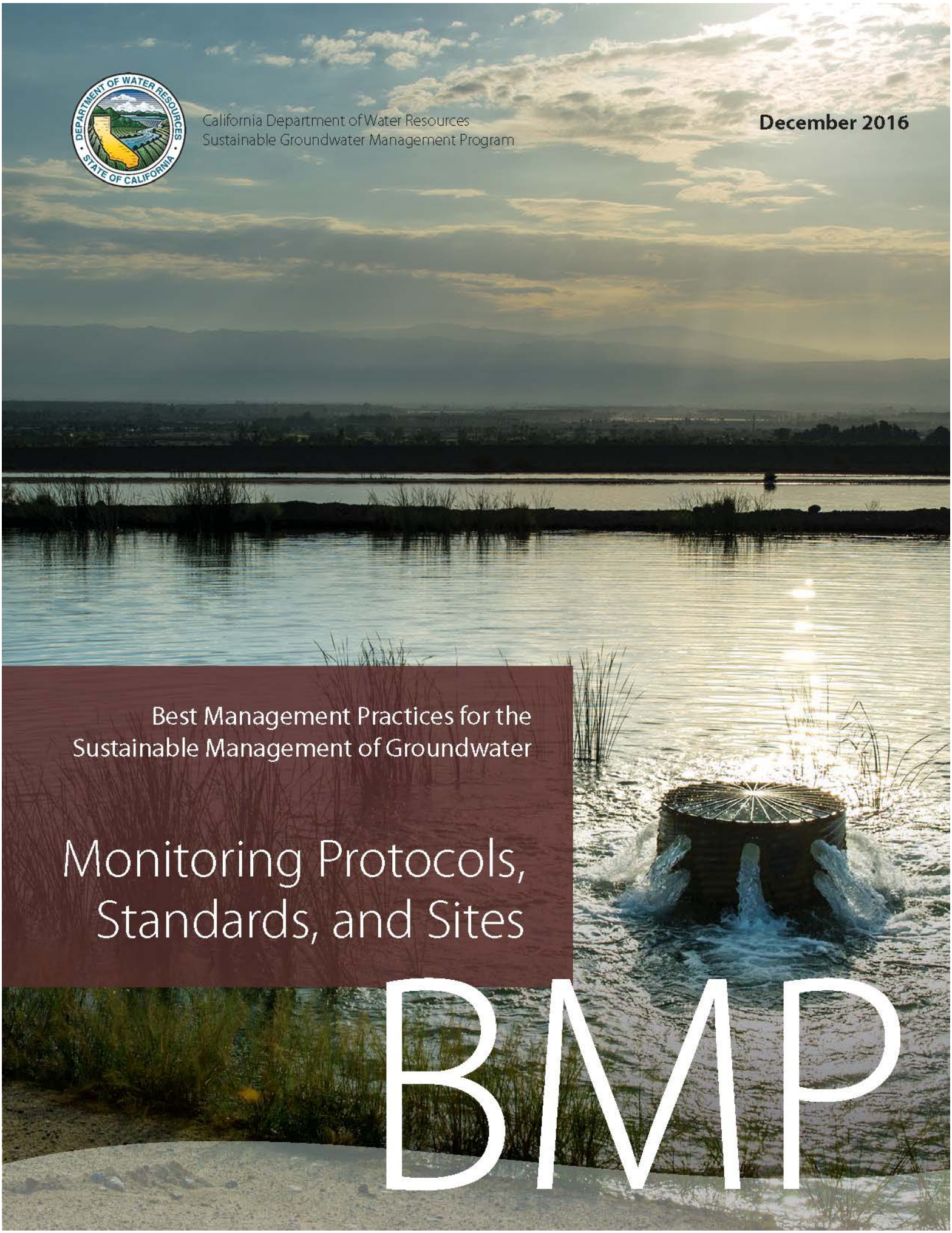
NOTES:

Purging and Sampling Protocol:

1	If the well has a dedicated pump and it is operating, ensure that it has been operating consistently and at least three (3) casing volumes have been pumped. If not, note pumping rate and time to purge 3 casing volumes before collecting representative samples. Measure and record water quality parameters through purging process.
2	If the well does not have a dedicate pump, then use purging equipment (e.g., portable submersible pump, bailer) to purge well. If using a portable submersible pump, lower pump to depth (consistent with previous smapling events) that ensures pump will not draw water level down to intake and, if possible, is positioned above the top of the well screen.
3	Ensure that portable purging equipment is properly decontaminated prior to use. Any decontamination must be documented (e.g., material used to decontaminate equipment, rinsing method, containment of waste, waste disposal).
4	Measure and/or record purge rate periodically. Collect purge sample to measure parameters periodically. Parameters should stablize (within 10% of previous three readings) before collecting the water quality sample.
5	Use the appropriate sample containers provided by the analytical laboratory. Sample containers shoud be labeled prior to sample collection. The sample label should include: Sample ID (often well ID), sample date and time of collection, sampling personnel, preservative used (if any), and the analytical method to be used on the sample.
6	All samples should be preserved as soon as possible in an ice chest containing ice. The samples should be chilled and maintained at 4 ^{o}C.
7	The Chain-of-Custory form should be filled out as the sample is collected and preserved.

Format instructions and notes:

Site ID:	Well identifier or State Well No.
ft bls:	feet below land surface
Purging Equipment ID/description:	serial number or identifier of measuring equipment



California Department of Water Resources
Sustainable Groundwater Management Program

December 2016

Best Management Practices for the Sustainable Management of Groundwater

Monitoring Protocols, Standards, and Sites

BMP

State of California
Edmund G. Brown Jr., Governor

California Natural Resources Agency
John Laird, Secretary for Natural Resources

Department of Water Resources
Mark W. Cowin, Director

Carl A. Torgersen, Chief Deputy Director

Office of the Chief Counsel Spencer Kenner	Public Affairs Office Ed Wilson	Government and Community Liaison Anecita S. Agustinez
Office of Workforce Equality Stephanie Varrelman	Policy Advisor Waiman Yip	Legislative Affairs Office Kasey Schimke, Ass't Dir.

Deputy Directors

Gary Bardini	**Integrated Water Management**
William Croyle	**Statewide Emergency Preparedness and Security**
Mark Anderson	**State Water Project**
John Pacheco (Acting)	**California Energy Resources Scheduling**
Kathie Kishaba	**Business Operations**
Taryn Ravazzini	**Special Initiatives**

Division of Integrated Regional Water Management

Arthur Hinojosa Jr., Chief

Prepared under the direction of:

David Gutierrez, Sustainable Groundwater Management Program Manager
Rich Juricich, Sustainable Groundwater Management Branch

Prepared by:

Trevor Joseph, BMP Project Manager

Timothy Godwin
Dan McManus
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Groundwater Monitoring Protocols, Standards, and Sites
Best Management Practice

1. OBJECTIVE

The objective of this *Best Management Practice* (BMP) is to assist in the development of Monitoring Protocols. The California Department of Water Resources (the Department or DWR) has developed this document as part of the obligation in the Technical Assistance chapter (Chapter 7) of the Sustainable Groundwater Management Act (SGMA) to support the long-term sustainability of California's groundwater *basins*. Information provided in this BMP provides technical assistance to Groundwater Sustainability Agencies (GSAs) and other stakeholders to aid in the establishment of consistent data collection processes and procedures. In addition, this BMP can be used by GSAs to adopt a set of sampling and measuring procedures that will yield similar data regardless of the monitoring personnel. Finally, this BMP identifies available resources to support the development of monitoring protocols.

This BMP includes the following sections:

1. Objective. A brief description of how and where monitoring protocols are required under SGMA and the overall objective of this BMP.
2. Use and Limitations. A brief description of the use and limitations of this BMP.
3. Monitoring Protocol Fundamentals. A description of the general approach and background of groundwater monitoring protocols.
4. Relationship of Monitoring Protocols to other BMPs. A description of how this BMP is connected with other BMPS.
5. Technical Assistance. Technical content providing guidance for regulatory sections.
6. Key Definitions. Descriptions of definitions identified in the GSP Regulations or SGMA.
7. Related Materials. References and other materials that provide supporting information related to the development of Groundwater Monitoring Protocols.

2. USE AND LIMITATIONS

BMPs developed by the Department provide technical guidance to GSAs and other stakeholders. Practices described in these BMPs do not replace the GSP Regulations, nor do they create new requirements or obligations for GSAs or other stakeholders. In addition, using this BMP to develop a GSP does not equate to an approval determination by the Department. All references to GSP Regulations relate to Title 23 of the California Code of Regulations (CCR), Division 2, Chapter 1.5, and Subchapter 2. All references to SGMA relate to California Water Code sections in Division 6, Part 2.74.

3. MONITORING PROTOCOL FUNDAMENTALS

Establishing data collection protocols that are based on best available scientific methods is essential. Protocols that can be applied consistently across all basins will likely yield comparable data. Consistency of data collection methods reduces uncertainty in the comparison of data and facilitates more accurate communication within basins as well as between basins.

Basic minimum technical standards of accuracy lead to quality data that will better support implementation of GSPs.

4. RELATIONSHIP OF MONITORING PROTOCOL TO OTHER BMPS

Groundwater monitoring is a fundamental component of SGMA, as each GSP must include a sufficient network of data that demonstrates measured progress toward the achievement of the sustainability goal for each basin. For this reason, a standard set of protocols need to be developed and utilized.

It is important that data is developed in a manner consistent with the basin setting, planning, and projects/management actions steps identified on **Figure 1** and the GSP Regulations. The inclusion of monitoring protocols in the GSP Regulations also emphasizes the importance of quality empirical data to support GSPs and provide comparable information from basin to basin.

Figure 1 provides a logical progression for the development of a GSP and illustrates how monitoring protocols are linked to other related BMPs. This figure also shows the context of the BMPs as they relate to various steps to sustainability as outlined in the GSP Regulations. The monitoring protocol BMP is part of the Monitoring step identified in **Figure 1**.

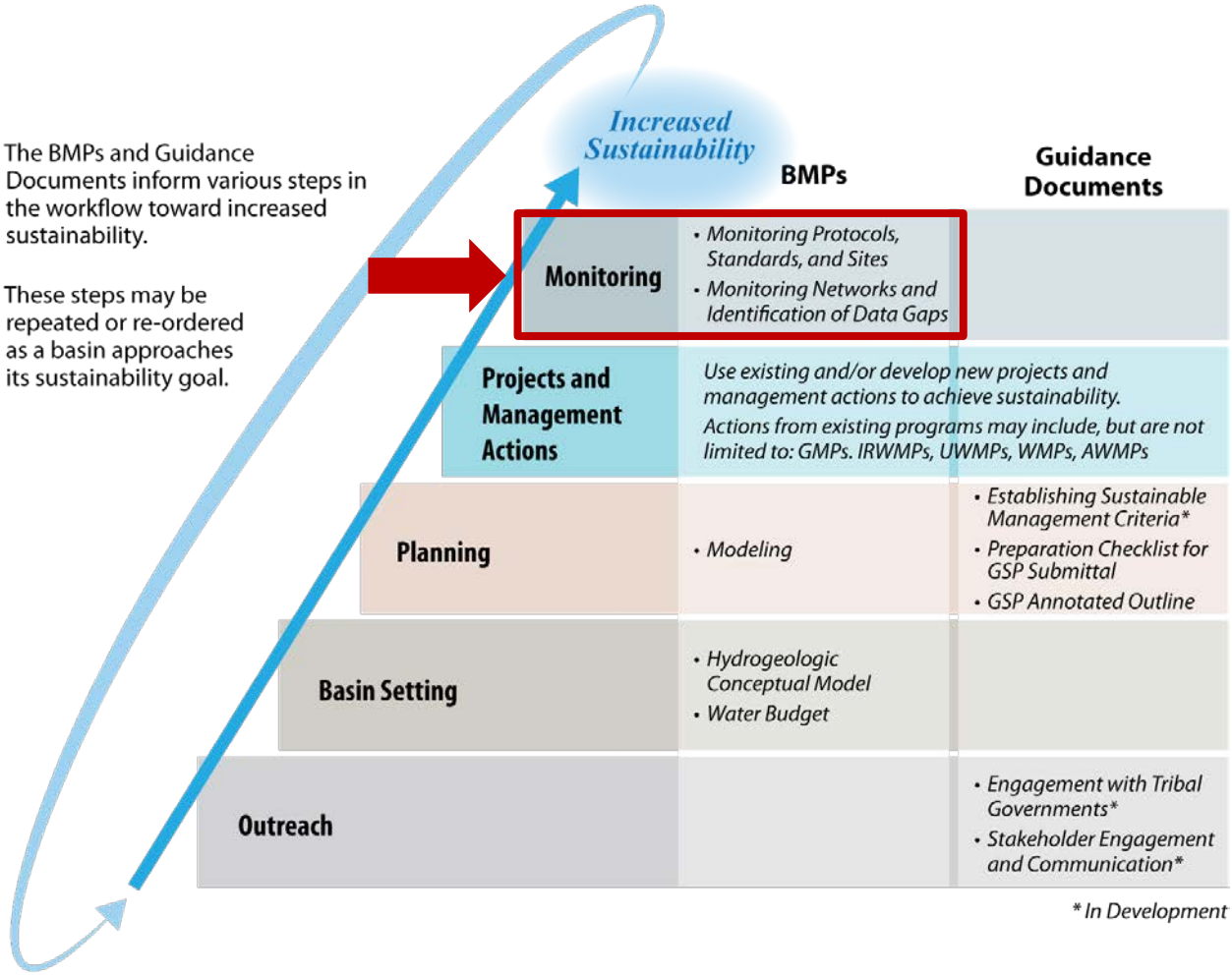


Figure 1 – Logical Progression of Basin Activities Needed to Increase Basin Sustainability

5. TECHNICAL ASSISTANCE

23 CCR §352.2. Monitoring Protocols. Each Plan shall include monitoring protocols adopted by the Agency for data collection and management, as follows:
(a) Monitoring protocols shall be developed according to best management practices.
(b) The Agency may rely on monitoring protocols included as part of the best management practices developed by the Department, or may adopt similar monitoring protocols that will yield comparable data.
(c) Monitoring protocols shall be reviewed at least every five years as part of the periodic evaluation of the Plan, and modified as necessary.

The GSP Regulations specifically call out the need to utilize protocols identified in this BMP, or develop similar protocols. The following technical protocols provide guidance based upon existing professional standards and are commonly adopted in various groundwater-related programs. They provide clear techniques that yield quality data for use in the various components of the GSP. They can be further elaborated on by individual GSAs in the form of standard operating procedures which reflect specific local requirements and conditions. While many methodologies are suggested in this BMP, it should be understood that qualified professional judgment should be used to meet the specific monitoring needs.

The following BMPs may be incorporated into a GSP's monitoring protocols section for collecting groundwater elevation data. A GSP that adopts protocols that deviate from these BMPs must demonstrate that they will yield comparable data.

PROTOCOLS FOR ESTABLISHING A MONITORING PROGRAM

The protocol for establishment of a monitoring program should be evaluated in conjunction with the *Monitoring Network and Identification of Data Gaps* BMP and other BMPs. Monitoring protocols must take into consideration the *Hydrogeologic Conceptual Model, Water Budget, and Modeling* BMPs when considering the data needs to meet GSP objectives and the sustainability goal.

It is suggested that each GSP incorporate the Data Quality Objective (DQO) process following the U.S. EPA *Guidance on Systematic Planning Using the Data Quality Objectives Process* (EPA, 2006). Although strict adherence to this method is not required, it does provide a robust approach to consider and assures that data is collected with a specific purpose in mind, and efforts for monitoring are as efficient as possible to achieve the objectives of the GSP and compliance with the GSP Regulations.

The DQO process presents a method that can be applied directly to the sustainability criteria quantitative requirements through the following steps.

1. State the problem – Define sustainability indicators and planning considerations of the GSP and sustainability goal.
2. Identify the goal – Describe the quantitative measurable objectives and minimum thresholds for each of the sustainability indicators.
3. Identify the inputs – Describe the data necessary to evaluate the sustainability indicators and other GSP requirements (i.e. water budget).
4. Define the boundaries of the study – This is commonly the extent of the Bulletin 118 groundwater basin or subbasin, unless multiple GSPs are prepared for a given basin. In that case, evaluation of the coordination plan and specifically how the monitoring will be comparable and meet the sustainability goals for the entire basin.
5. Develop an analytical approach – Determine how the quantitative sustainability indicators will be evaluated (i.e. are special analytical methods required that have specific data needs).
6. Specify performance or acceptance criteria – Determine what quality the data must have to achieve the objective and provide some assurance that the analysis is accurate and reliable.
7. Develop a plan for obtaining data – Once the objectives are known determine how these data should be collected. Existing data sources should be used to the greatest extent possible.

These steps of the DQO process should be used to guide GSAs to develop the most efficient monitoring process to meet the measurable objectives of the GSP and the sustainability goal. The DQO process is an iterative process and should be evaluated regularly to improve monitoring efficiencies and meet changing planning and project needs. Following the DQO process, GSAs should also include a data quality control and quality assurance plan to guide the collection of data.

Many monitoring programs already exist as part of ongoing groundwater management or other programs. To the extent possible, the use of existing monitoring data and programs should be utilized to meet the needs for characterization, historical record documentation, and continued monitoring for the SGMA program. However, an evaluation of the existing monitoring data should be performed to assure the data being collected meets the DQOs, regulatory requirements, and data collection protocol described in this BMP. While this BMP provides guidance for collection of various

regulatory based requirements, there is flexibility among the various methodologies available to meet the DQOs based upon professional judgment (local conditions or project needs).

At a minimum, for each monitoring site, the following information or procedure should be collected and documented:

- Long-term access agreements. Access agreements should include year-round site access to allow for increased monitoring frequency.
- A unique identifier that includes a general written description of the site location, date established, access instructions and point of contact (if necessary), type of information to be collected, latitude, longitude, and elevation. Each monitoring location should also track all modifications to the site in a modification log.

PROTOCOLS FOR MEASURING GROUNDWATER LEVELS

This section presents considerations for the methodology of collection of groundwater level data such that it meets the requirements of the GSP Regulations and the DQOs of the specific GSP. Groundwater levels are a fundamental measure of the status of groundwater conditions within a basin. In many cases, relationships of the sustainability indicators may be able to be correlated with groundwater levels. The quality of this data must consider the specific aquifer being monitored and the methodology for collecting these levels.

The following considerations for groundwater level measuring protocols should ensure the following:

- Groundwater level data are taken from the correct location, well ID, and screen interval depth
- Groundwater level data are accurate and reproducible
- Groundwater level data represent conditions that inform appropriate basin management DQOs
- All salient information is recorded to correct, if necessary, and compare data
- Data are handled in a way that ensures data integrity

General Well Monitoring Information

The following presents considerations for collection of water level data that include regulatory required components as well as those which are recommended.

- Groundwater elevation data will form the basis of basin-wide water-table and piezometric maps, and should approximate conditions at a discrete period in time. Therefore, all groundwater levels in a basin should be collected within as short a time as possible, preferably within a 1 to 2 week period.
- Depth to groundwater must be measured relative to an established Reference Point (RP) on the well casing. The RP is usually identified with a permanent marker, paint spot, or a notch in the lip of the well casing. By convention in open casing monitoring wells, the RP reference point is located on the north side of the well casing. If no mark is apparent, the person performing the measurement should measure the depth to groundwater from the north side of the top of the well casing.
- The elevation of the RP of each well must be surveyed to the North American Vertical Datum of 1988 (NAVD88), or a local datum that can be converted to NAVD88. The elevation of the RP must be accurate to within 0.5 foot. It is preferable for the RP elevation to be accurate to 0.1 foot or less. Survey grade global navigation satellite system (GNSS) global positioning system (GPS) equipment can achieve similar vertical accuracy when corrected. Guidance for use of GPS can be found at USGS http://water.usgs.gov/osw/gps/. Hand-held GPS units likely will not produce reliable vertical elevation measurement accurate enough for the casing elevation consistent with the DQOs and regulatory requirements.
- The sampler should remove the appropriate cap, lid, or plug that covers the monitoring access point listening for pressure release. If a release is observed, the measurement should follow a period of time to allow the water level to equilibrate.
- Depth to groundwater must be measured to an accuracy of 0.1 foot below the RP. It is preferable to measure depth to groundwater to an accuracy of 0.01 foot. Air lines and acoustic sounders may not provide the required accuracy of 0.1 foot.
- The water level meter should be decontaminated after measuring each well.

Where existing wells do not meet the base standard as described in the GSP Regulations or the considerations provided above, new monitoring wells may need to be constructed to meet the DQOs of the GSP. The design, installation, and documentation of new monitoring wells must consider the following:

- Construction consistent with California Well Standards as described in Bulletins 74-81 and 74-90, and local permitting agency standards of practice.
- Logging of borehole cuttings under the supervision of a California Professional Geologist and described consistent with the Unified Soil Classification System methods according to ASTM standard D2487-11.
- Written criteria for logging of borehole cuttings for comparison to known geologic formations, principal aquifers and aquitards/aquicludes, or specific marker beds to aid in consistent stratigraphic correlation within and across basins.
- Geophysical surveys of boreholes to aid in consistency of logging practices. Methodologies should include resistivity, spontaneous potential, spectral gamma, or other methods as appropriate for the conditions. Selection of geophysical methods should be based upon the opinion of a professional geologist or professional engineer, and address the DQOs for the specific borehole and characterization needs.
- Prepare and submit State well completion reports according to the requirements of §13752. Well completion report documentation should include geophysical logs, detailed geologic log, and formation identification as attachments. An example well completion as-built log is illustrated in **Figure 2.** DWR well completion reports can be filed directly at the Online System for Well Completion Reports (OSWCR) http://water.ca.gov/oswcr/index.cfm.

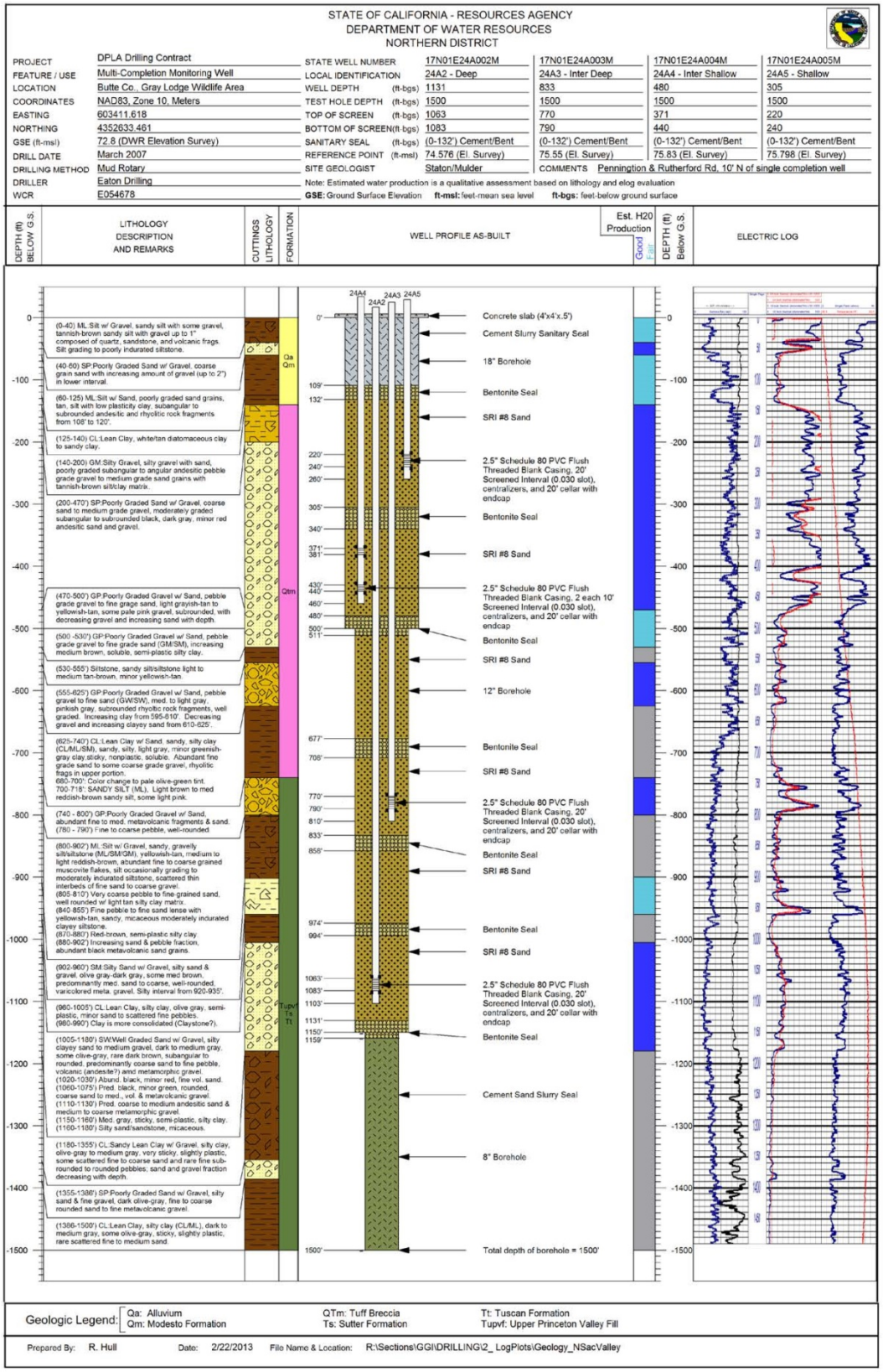


Figure 2 – Example As-Built Multi-Completion Monitoring Well Log

Measuring Groundwater Levels

Well construction, anticipated groundwater level, groundwater level measuring equipment, field conditions, and well operations should be considered prior collection of the groundwater level measurement. The USGS *Groundwater Technical Procedures* (Cunningham and Schalk, 2011) provide a thorough set of procedures which can be used to establish specific Standard Operating Procedures (SOPs) for a local agency. **Figure 3** illustrates a typical groundwater level measuring event and simultaneous pressure transducer download.

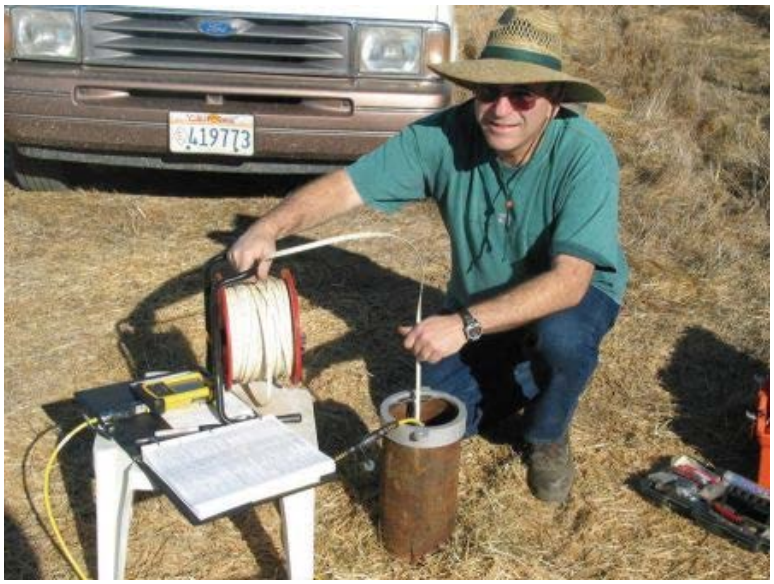


Figure 3 – Collection of Water Level Measurement and Pressure Transducer Download

The following points provide a general approach for collecting groundwater level measurements:

- Measure depth to water in the well using procedures appropriate for the measuring device. Equipment must be operated and maintained in accordance with manufacturer's instructions. Groundwater levels should be measured to the nearest 0.01 foot relative to the RP.
- For measuring wells that are under pressure, allow a period of time for the groundwater levels to stabilize. In these cases, multiple measurements should be collected to ensure the well has reached equilibrium such that no significant changes in water level are observed. Every effort should be made to ensure that a representative stable depth to groundwater is recorded. If a well does not stabilize, the quality of the value should be appropriately qualified as a

questionable measurement. In the event that a well is artesian, site specific procedures should be developed to collect accurate information and be protective of safety conditions associated with a pressurized well. In many cases, an extension pipe may be adequate to stabilize head in the well. Record the dimension of the extension and document measurements and configuration.

- The sampler should calculate the groundwater elevation as:

$$GWE = RPE - DTW$$

Where:

GWE = Groundwater Elevation
RPE = Reference Point Elevation
DTW = Depth to Water

The sampler must ensure that all measurements are in consistent units of feet, tenths of feet, and hundredths of feet. Measurements and RPEs should not be recorded in feet and inches.

Recording Groundwater Levels

- The sampler should record the well identifier, date, time (24-hour format), RPE, height of RP above or below ground surface, DTW, GWE, and comments regarding any factors that may influence the depth to water readings such as weather, nearby irrigation, flooding, potential for tidal influence, or well condition. If there is a questionable measurement or the measurement cannot be obtained, it should be noted. An example of a field sheet with the required information is shown in **Figure 4**. It includes questionable measurement and no measurement codes that should be noted. This field sheet is provided as an example. Standardized field forms should be used for all data collection. The aforementioned USGS *Groundwater Technical Procedures* offers a number of example forms.
- The sampler should replace any well caps or plugs, and lock any well buildings or covers.
- All data should be entered into the GSA data management system (DMS) as soon as possible. Care should be taken to avoid data entry mistakes and the entries should be checked by a second person for compliance with the DQOs.

STATE OF CALIFORNA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES

WELL DATA

STATE WELL NUMBER	COUNTY	REFERENCE POINT ELEV.	MEASURING AGENCY
			DWR

NO MEASUREMENT	QUESTIONABLE MEASUREMENT
0. Measurement discontinued	0. Caved or deepened
1. Pumping	1. Pumping
2. Pump house locked	2. Nearby pump operating
3. Tape hung up	3. Casing leaky or wet
4. Can't get tape in casing	4. Pumped recently
5. Unable to locate well	5. Air or pressure gauge measurement
6. Well has been destroyed	6. Other
7. Special	7. Recharge operation at or nearby well
8. Casing leaky or wet	8. Oil in casing
9. Temporarily inaccessible	

DATE	N M	Q M	TAPE AT RP	TAPE AT WS	RP to WS	OBSR VR	COMMENTS

DWR 1213

Figure 4 – Example of Water Level Well Data Field Collection Form

Pressure Transducers

Groundwater levels and/or calculated groundwater elevations may be recorded using pressure transducers equipped with data loggers installed in monitoring wells. When installing pressure transducers, care must be exercised to ensure that the data recorded by the transducers is confirmed with hand measurements.

The following general protocols must be followed when installing a pressure transducer in a monitoring well:

- The sampler must use an electronic sounder or chalked steel tape and follow the protocols listed above to measure the groundwater level and calculate the groundwater elevation in the monitoring well to properly program and reference the installation. It is recommended that transducers record measured groundwater level to conserve data capacity; groundwater elevations can be calculated at a later time after downloading.
- The sampler must note the well identifier, the associated transducer serial number, transducer range, transducer accuracy, and cable serial number.
- Transducers must be able to record groundwater levels with an accuracy of at least 0.1 foot. Professional judgment should be exercised to ensure that the data being collected is meeting the DQO and that the instrument is capable. Consideration of the battery life, data storage capacity, range of groundwater level fluctuations, and natural pressure drift of the transducers should be included in the evaluation.
- The sampler must note whether the pressure transducer uses a vented or non-vented cable for barometric compensation. Vented cables are preferred, but non-vented units provide accurate data if properly corrected for natural barometric pressure changes. This requires the consistent logging of barometric pressures to coincide with measurement intervals.
- Follow manufacturer specifications for installation, calibration, data logging intervals, battery life, correction procedure (if non-vented cables used), and anticipated life expectancy to assure that DQOs are being met for the GSP.
- Secure the cable to the well head with a well dock or another reliable method. Mark the cable at the elevation of the reference point with tape or an indelible marker. This will allow estimates of future cable slippage.
- The transducer data should periodically be checked against hand measured groundwater levels to monitor electronic drift or cable movement. This should happen during routine site visits, at least annually or as necessary to maintain data integrity.

- The data should be downloaded as necessary to ensure no data is lost and entered into the basin's DMS following the QA/QC program established for the GSP. Data collected with non-vented data logger cables should be corrected for atmospheric barometric pressure changes, as appropriate. After the sampler is confident that the transducer data have been safely downloaded and stored, the data should be deleted from the data logger to ensure that adequate data logger memory remains.

PROTOCOLS FOR SAMPLING GROUNDWATER QUALITY

The following protocols can be incorporated into a GSP's monitoring protocols for collecting groundwater quality data. More detailed sampling procedures and protocols are included in the standards and guidance documents listed at the end of this BMP. A GSP that adopts protocols that deviate from these BMPs must demonstrate that the adopted protocols will yield comparable data.

In general, the use of existing water quality data within the basin should be done to the greatest extent possible if it achieves the DQOs for the GSP. In some cases it may be necessary to collect additional water quality data to support monitoring programs or evaluate specific projects. The USGS *National Field Manual for the Collection of Water Quality Data* (Wilde, 2005) should be used to guide the collection of reliable data. **Figure 5** illustrates a typical groundwater quality sampling setup.



Figure 5 – Typical Groundwater Quality Sampling Event

All analyses should be performed by a laboratory certified under the State Environmental Laboratory Accreditation Program. The specific analytical methods are beyond the scope of this BMP, but should be commiserate with other programs evaluating water quality within the basin for comparative purposes.

Groundwater quality sampling protocols should ensure that:

- Groundwater quality data are taken from the correct location
- Groundwater quality data are accurate and reproducible
- Groundwater quality data represent conditions that inform appropriate basin management and are consistent with the DQOs
- All salient information is recorded to normalize, if necessary, and compare data
- Data are handled in a way that ensures data integrity

The following points are general guidance in addition to the techniques presented in the previously mentioned USGS *National Field Manual for the Collection of Water Quality Data.*

Standardized protocols include the following:

- Prior to sampling, the sampler must contact the laboratory to schedule laboratory time, obtain appropriate sample containers, and clarify any sample holding times or sample preservation requirements.
- Each well used for groundwater quality monitoring must have a unique identifier. This identifier must appear on the well housing or the well casing to avoid confusion.
- In the case of wells with dedicated pumps, samples should be collected at or near the wellhead. Samples should not be collected from storage tanks, at the end of long pipe runs, or after any water treatment.
- The sampler should clean the sampling port and/or sampling equipment and the sampling port and/or sampling equipment must be free of any contaminants. The sampler must decontaminate sampling equipment between sampling locations or wells to avoid cross-contamination between samples.
- The groundwater elevation in the well should be measured following appropriate protocols described above in the groundwater level measuring protocols.
- For any well not equipped with low-flow or passive sampling equipment, an adequate volume of water should be purged from the well to ensure that the groundwater sample is representative of ambient groundwater and not stagnant water in the well casing. Purging three well casing volumes is generally

considered adequate. Professional judgment should be used to determine the proper configuration of the sampling equipment with respect to well construction such that a representative ambient groundwater sample is collected. If pumping causes a well to be evacuated (go dry), document the condition and allow well to recover to within 90% of original level prior to sampling. Professional judgment should be exercised as to whether the sample will meet the DQOs and adjusted as necessary.

- Field parameters of pH, electrical conductivity, and temperature should be collected for each sample. Field parameters should be evaluated during the purging of the well and should stabilize prior to sampling. Measurements of pH should only be measured in the field, lab pH analysis are typically unachievable due to short hold times. Other parameters, such as oxidation-reduction potential (ORP), dissolved oxygen (DO) (in situ measurements preferable), or turbidity, may also be useful for meeting DQOs of GSP and assessing purge conditions. All field instruments should be calibrated daily and evaluated for drift throughout the day.
- Sample containers should be labeled prior to sample collection. The sample label must include: sample ID (often well ID), sample date and time, sample personnel, sample location, preservative used, and analytes and analytical method.
- Samples should be collected under laminar flow conditions. This may require reducing pumping rates prior to sample collection.
- Samples should be collected according to appropriate standards such as those listed in the *Standard Methods for the Examination of Water and Wastewater*, USGS *National Field Manual for the Collection of Water Quality Data,* or other appropriate guidance. The specific sample collection procedure should reflect the type of analysis to be performed and DQOs.
- All samples requiring preservation must be preserved as soon as practically possible, ideally at the time of sample collection. Ensure that samples are appropriately filtered as recommended for the specific analyte. Entrained solids can be dissolved by preservative leading to inconsistent results of dissolve analytes. Specifically, samples to be analyzed for metals should be field-filtered prior to preservation; do not collect an unfiltered sample in a preserved container.
- Samples should be chilled and maintained at 4 °C to prevent degradation of the sample. The laboratory's Quality Assurance Management Plan should detail appropriate chilling and shipping requirements.

- Samples must be shipped under chain of custody documentation to the appropriate laboratory promptly to avoid violating holding time restrictions.
- Instruct the laboratory to use reporting limits that are equal to or less than the applicable DQOs or regional water quality objectives/screening levels.

Special protocols for low-flow sampling equipment

In addition to the protocols listed above, sampling using low-flow sample equipment should adopt the following protocols derived from EPA's *Low-flow (minimal drawdown) ground-water sampling procedures* (Puls and Barcelona, 1996). These protocols apply to low-flow sampling equipment that generally pumps between 0.1 and 0.5 liters per minute. These protocols are not intended for bailers.

Special protocols for passive sampling equipment

In addition to the protocols listed above, passive diffusion samplers should follow protocols set forth in USGS Fact Sheet 088-00.

PROTOCOLS FOR MONITORING SEAWATER INTRUSION

Monitoring seawater intrusion requires analysis of the chloride concentrations within groundwater of each principal aquifer subject to seawater intrusion. While no significant standardized approach exists, the methodologies described above for degraded water quality can be applied for the collection of groundwater samples. In addition to the protocol described above, the following protocols should be followed:

- Water quality samples should be collected and analyzed at least semi-annually. Samples will be analyzed for dissolved chloride at a minimum. It may be beneficial to include analyses of iodide and bromide to aid in determination of salinity source. More frequent sampling may be necessary to meet DQOs of GSP. The development of surrogate measures of chloride concentration may facilitate cost-effective means to monitor more frequently to observe the range of conditions and variability of the flow dynamics controlling seawater intrusion.
- Groundwater levels will be collected at a frequency adequate to characterize changes in head in the vicinity of the leading edge of degraded water quality in each principal aquifer. Frequency may need to be increased in areas of known preferential pathways, groundwater pumping, or efficacy evaluation of mitigation projects.
- The use of geophysical surveys, electrical resistivity, or other methods may provide for identification of preferential pathways and optimize monitoring well placement and evaluation of the seawater intrusion front. Professional judgment

should be exercised to determine the appropriate methodology and whether the DQOs for the GSP would be met.

PROTOCOLS FOR MEASURING STREAMFLOW

Monitoring of streamflow is necessary for incorporation into water budget analysis and for use in evaluation of stream depletions associated with groundwater extractions. The use of existing monitoring locations should be incorporated to the greatest extent possible. Many of these streamflow monitoring locations currently follow the protocol described below.

Establishment of new streamflow discharge sites should consider the existing network and the objectives of the new location. Professional judgment should be used to determine the appropriate permitting that may be necessary for the installation of any monitoring locations along surface water bodies. Regular frequent access will be necessary to these sites for the development of ratings curves and maintenance of equipment.

To establish a new streamflow monitoring station special consideration must be made in the field to select an appropriate location for measuring discharge. Once a site is selected, development of a relationship of stream stage to discharge will be necessary to provide continuous estimates of streamflow. Several measurements of discharge at a variety of stream stages will be necessary to develop the ratings curve correlating stage to discharge. The use of Acoustic Doppler Current Profilers (ADCPs) can provide accurate estimates of discharge in the correct settings. Professional judgment must be exercised to determine the appropriate methodology. Following development of the ratings curve a simple stilling well and pressure transducer with data logger can be used to evaluate stage on a frequent basis. A simple stilling well and staff gage is illustrated in **Figure 6**.

Streamflow measurements should be collected, analyzed, and reported in accordance with the procedures outlined in USGS Water Supply Paper 2175, *Volume 1. – Measurement of Stage Discharge* and *Volume 2. – Computation of Discharge.* This methodology is currently being used by both the USGS and DWR for existing streamflow monitoring throughout the State.



Figure 6 – Simple Stilling Well and Staff Gage Setup

PROTOCOLS FOR MEASURING SUBSIDENCE

Evaluating and monitoring inelastic land subsidence can utilize multiple data sources to evaluate the specific conditions and associated causes. To the extent possible, the use of existing data should be utilized. Subsidence can be estimated from numerous techniques, they include: level surveying tied to known stable benchmarks or benchmarks located outside the area being studied for possible subsidence; installing and tracking changes in borehole extensometers; obtaining data from continuous GPS (CGPS) locations, static GPS surveys or Real-Time-Kinematic (RTK) surveys; or analyzing Interferometric Synthetic Aperture Radar (InSAR) data. No standard procedures exist for collecting data from the potential subsidence monitoring approaches. However, an approach may include:

- Identification of land subsidence conditions.
    - Evaluate existing regional long-term leveling surveys of regional infrastructure, i.e. roadways, railroads, canals, and levees.
    - Inspect existing county and State well records where collapse has been noted for well repairs or replacement.
    - Determine if significant fine-grained layers are present such that the potential for collapse of the units could occur should there be significant depressurization of the aquifer system.

    - Inspect geologic logs and the hydrogeologic conceptual model to aid in identification of specific units of concern.
    - Collect regional remote-sensing information such as InSAR, commonly provided by USGS and NASA. Data availability is currently limited, but future resources are being developed.
- Monitor regions of suspected subsidence where potential exists.
    - Establish CGPS network to evaluate changes in land surface elevation.
    - Establish leveling surveys transects to observe changes in land surface elevation.
    - Establish extensometer network to observe land subsidence. An example of a typical extensometer design is illustrated in **Figure 7**. There are a variety of extensometer designs and they should be selected based on the specific DQOs.

Various standards and guidance documents for collecting data include:

- Leveling surveys must follow surveying standards set out in the California Department of Transportation's Caltrans Surveys Manual.
- GPS surveys must follow surveying standards set out in the California Department of Transportation's Caltrans Surveys Manual.
- USGS has been performing subsidence surveys within several areas of California. These studies are sound examples for appropriate methods and should be utilized to the extent possible and where available:
    - http://ca.water.usgs.gov/land_subsidence/california-subsidence-measuring.html
- Instruments installed in borehole extensometers must follow the manufacturer's instructions for installation, care, and calibration.
- Availability of InSAR data is improving and will increase as programs are developed. This method requires expertise in analysis of the raw data and will likely be made available as an interpretative report for specific regions.

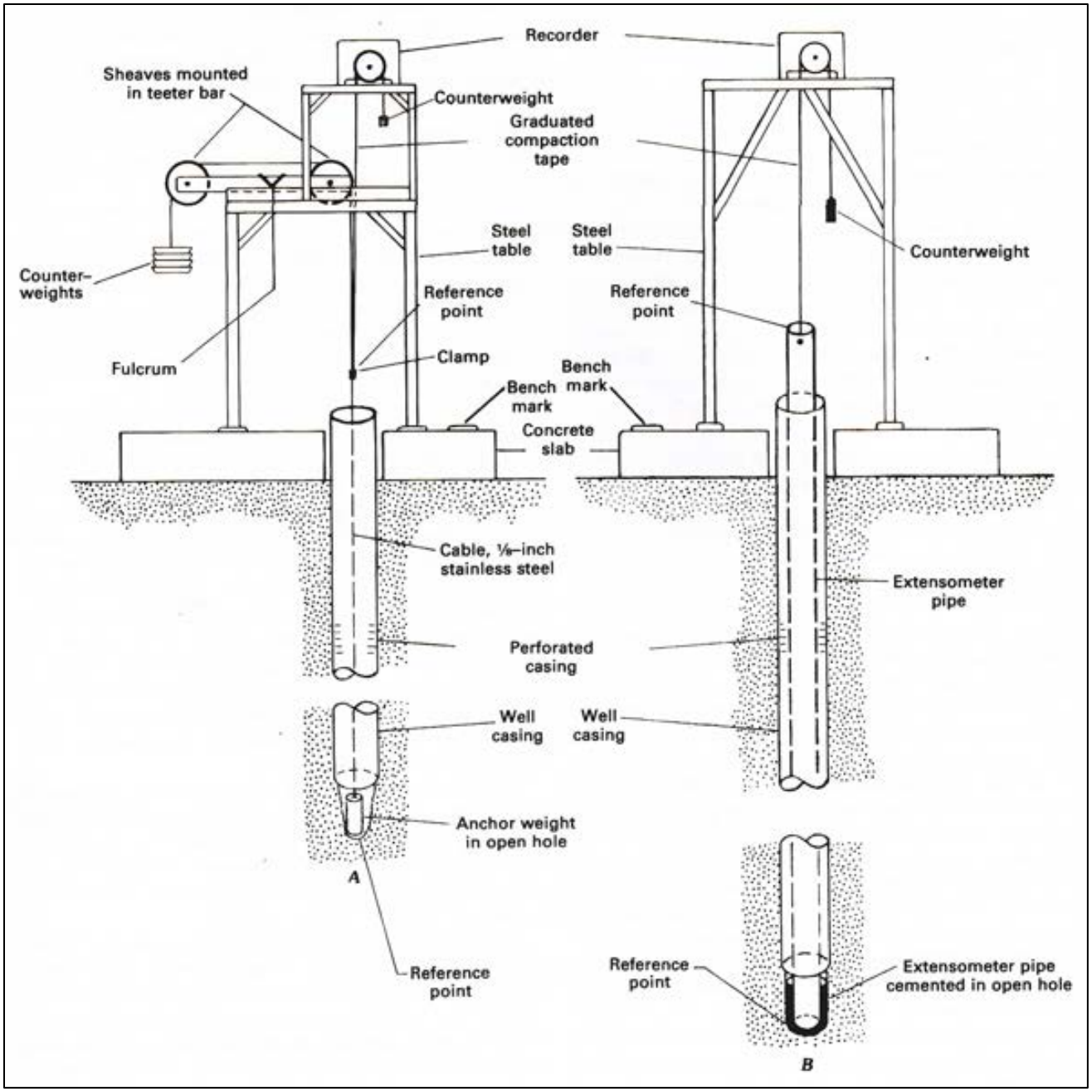


Figure 7 – Simplified Extensometer Diagram

6. KEY DEFINITIONS

The key definitions and sections related to Groundwater Monitoring Protocols, Standards, and Sites outlined in applicable SGMA code and regulations are provided below for reference.

Groundwater Sustainability Plan Regulations (California Code of Regulations §351)

- §351(h) "Best available science" refers to the use of sufficient and credible information and data, specific to the decision being made and the time frame available for making that decision, that is consistent with scientific and engineering professional standards of practice.
- §351(i) "Best management practice" refers to a practice, or combination of practices, that are designed to achieve sustainable groundwater management and have been determined to be technologically and economically effective, practicable, and based on best available science.

Monitoring Protocols Reference

§352.2. Monitoring Protocols

Each Plan shall include monitoring protocols adopted by the Agency for data collection and management, as follows:

(a) Monitoring protocols shall be developed according to best management practices.

(b) The Agency may rely on monitoring protocols included as part of the best management practices developed by the Department, or may adopt similar monitoring protocols that will yield comparable data.

(c) Monitoring protocols shall be reviewed at least every five years as part of the periodic evaluation of the Plan, and modified as necessary.

SGMA Reference

§10727.2. Required Plan Elements

(f) Monitoring protocols that are designed to detect changes in groundwater levels, groundwater quality, inelastic surface subsidence for basins for which subsidence has been identified as a potential problem, and flow and quality of surface water that directly affect groundwater levels or quality or are caused by groundwater extraction in the basin. The monitoring protocols shall be designed to generate information that promotes efficient and effective groundwater management.

7. RELATED MATERIALS

CASE STUDIES

Luhdorff & Scalmanini Consulting Engineers, J.W. Borchers, M. Carpenter. 2014. *Land Subsidence from Groundwater Use in California*. Full Report of Findings prepared for California Water Foundation. April 2014. 151 p. http://ca.water.usgs.gov/land_subsidence/california-subsidence-cause-effect.html

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California Statewide Groundwater Elevation Monitoring (CASGEM) Program

Procedures for Monitoring Entity Reporting

December 2010

Department of Water Resources (DWR) will use the internet as the primary communication tool to notify interested parties and groundwater Monitoring Entities of the status of the CASGEM program on an ongoing basis. Information will be posted at the following website: http://www.water.ca.gov/groundwater/casgem

In addition to the above-referenced website, DWR will distribute information via email. In order to be placed on the CASGEM contact list, please register your contact information at the following website: http://www.water.ca.gov/groundwater/casgem/register/

For questions about the Reporting Procedures, or other technical issues, please contact:

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mscruggs@water.ca.gov

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INTRODUCTION TO CASGEM PROGRAM

In November 2009 Part 2.11 (Groundwater Monitoring) was added to Division 6 of the Water Code by Senate Bill 6 (7th Extraordinary Session) (SB 6), a copy of which is included in the Appendix. (All statutory references in this document are to the Water Code.) The new law directs that groundwater elevations in all basins and subbasins in California be regularly and systematically monitored, preferably by local entities, with the goal of demonstrating seasonal and long-term trends in groundwater elevations. The Department of Water Resources (DWR) is directed to make the resulting information readily and widely available.

DWR developed the California Statewide Groundwater Elevation Monitoring (CASGEM) program in accordance with SB 6 to establish a permanent, locally-managed system to monitor groundwater elevation in California's alluvial groundwater basins and subbasins identified in DWR Bulletin 118. The CASGEM program will rely and build on the many, established local long-term groundwater monitoring and management programs. DWR's role is to coordinate information collected locally through the CASGEM program and to maintain the collected groundwater elevation data in a readily and widely available public database. DWR will also continue measuring its current network of groundwater monitoring wells as funding allows.

The goals of the CASGEM program are to:

- Establish procedures for notification and data reporting by prospective Monitoring Entities (this document)
- Verify local Monitoring Entities in accordance with the Water Code
- Develop an interface for local entities to enter data into a database compatible with DWR's Water Data Library
- Maintain the database and make it easily accessible to the public and local entities for use in water supply planning and management

If no local entities volunteer to monitor groundwater elevations in a basin or part of a basin, DWR may be required to develop a monitoring program for that part. If DWR takes over monitoring of a basin, certain entities in the basin may not be eligible for water grants or loans administered by the state.

During August and September 2010, DWR held 10 workshops throughout the state in cooperation with Association of California Water Agencies (ACWA) to introduce the CASGEM program and explain the purpose and process of the program to local agencies and stakeholders. A copy of the DWR presentation is available on the CASGEM website (http://www.water.ca.gov/groundwater/casgem). A summary of

Frequently Asked Questions (FAQs), primarily from the workshops, is provided in on the CASGEM website.

DWR's main role is to administer the CASGEM program through providing public outreach; creating and maintaining the CASGEM website and online data submittal system; and, supporting local entities through the process of becoming a Monitoring Entity and preparing Monitoring Plans. DWR will use the CASGEM website to provide up-to-date information on the program. The website will also be the access point for the online notification and data submittal systems.

Staff from the DWR regional offices will be available to assist potential Monitoring Entities with the online notification submittal process. After receiving notification from prospective Monitoring Entities, DWR will review them for completeness, verify the authority of the applying entity under Section 10927, and check for overlapping monitoring areas. DWR will advise each party on the status of their notification within three months of submittal and will work with entities to address any deficiencies in their submittals.

DWR encourages local agencies and groups to collaborate to determine who will serve as the Monitoring Entity for the area. However, if more than one party seeks to become the Monitoring Entity for the same area and overlapping monitoring area issues cannot be resolved locally, DWR will make a final determination of the Monitoring Entity for the area. DWR's determinations will consider the order in which entities are identified in Section 10927 and other factors as described in the Water Code.

DWR will post the selection of each Monitoring Entity and its monitoring area on the CASGEM website and will notify each Monitoring Entity in writing. A map-based interface will be available for users to identify the Monitoring Entity for each basin in the state.

DWR will prepare the first status report on the CASGEM program for the Governor and Legislature by January 1, 2012. In this initial report, DWR will report on the extent of groundwater elevation monitoring within each basin. This report will include a statewide prioritization of basins based on water supply, water demand, and other factors identified in Section 10933. DWR will explore options for basins without identified monitoring, with a focus on identifying options for local monitoring. Future status reports on the CASGEM program will be prepared by DWR in years ending in 5 or 0.

PURPOSE OF MONITORING ENTITY REPORTING PROCEDURES

The purpose of these procedures is to introduce the CASGEM program and its components as the framework for implementing SB 6, with particular emphasis on the initial step of establishing Monitoring Entities for each Bulletin 118 basin in the state.

A summary of the requirements of local entities to comply with the CASGEM program is presented in Table 1.

Table 1. Quick Guide for Local Entities

- Determine whether you qualify as a potential Monitoring Entity (see "Requirements to become Monitoring Entity" on pages 9-13)
- Identify the basins within your area (see Bulletin 118)
- Collaborate with other local entities to identify and choose the prospective Monitoring Entity (or Entities) for your area
- Submit Monitoring Entity notification to DWR through CASGEM website (http://www.water.ca.gov/groundwater/casgem) on or before January 1, 2011
- DWR will review the notification and advise the prospective Monitoring Entity of the status of the notification within 3 months of submittal
- Work with staff of the DWR regional office to address any deficiencies in the submittal
- If more than one party seeks to become the Monitoring Entity for the same area, work with staff of the DWR regional office to resolve
- Check the CASGEM website for a listing of the selected Monitoring Entities
- Develop and submit a Monitoring Plan to DWR through the CASGEM website
- Staff from the DWR regional office are available to assist with the Monitoring Plan and to recommend changes
- Submit monitoring data to DWR through the CASGEM website on or before January 1, 2012

CASGEM SCHEDULE



A timetable for implementing the CASGEM schedule is shown above.

MONITORING ENTITIES

The CASGEM program establishes the framework for collaboration between local monitoring parties and DWR to collect groundwater elevation data throughout the state's 515 basins as defined in Bulletin 118. A Monitoring Entity is a local agency or group that voluntarily takes responsibility for conducting or coordinating groundwater elevation monitoring and reporting for all or part of a groundwater basin.

To determine if you are within a Bulletin 118 basin, please refer to maps and descriptions in Bulletin 118, available online at: http://www.water.ca.gov/groundwater/bulletin118/gwbasin_maps_descriptions.cfm. Geographic Information System (GIS) shapefiles of the basins are also available at this website. DWR can assist in identifying other potential local monitoring parties in each basin.

ROLES AND RESPONSIBILITIES OF MONITORING ENTITIES

Through the CASGEM program, local entities with appropriate authority may notify DWR of their intent to be a Monitoring Entity. Monitoring Entities will have specific responsibilities, including:

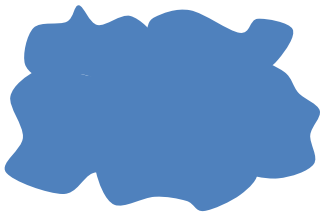
- Coordinate with DWR to establish a Monitoring Plan
- Conduct or coordinate the regular and systematic monitoring of groundwater elevations as specified in the Monitoring Plan
- Submit monitoring data to DWR in a timely manner

A Monitoring Entity can perform monitoring for any number of basins or portions thereof, but no area can have more than one Monitoring Entity. While the Monitoring Entity is responsible for compiling the data and submitting it to DWR for a particular area, the actual measurements can be taken by any number of agencies that would work under the direction of the Monitoring Entity. (Cooperating agencies would submit data to the Monitoring Entity, not to DWR.) Thus, assuming there are no overlapping areas or gaps in basin coverage for a given area, there are three possible basic scenarios, illustrated in Figure 1:

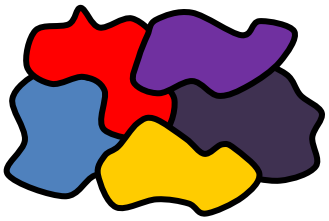
- A single Monitoring Entity that collects and reports groundwater elevation data for the entire basin (Scenario A);
- Multiple Monitoring Entities that collect and report groundwater elevation data for their portion of the basin (Scenario B); or

- An umbrella Monitoring Entity that coordinates and reports groundwater elevation data collected by multiple agencies within the basin (Scenario C).

Scenario A. One Monitoring Entity collects and reports data for entire basin



Scenario B. One basin, several Monitoring Entities collecting and submitting data



Scenario C. One basin, one Monitoring Entity coordinating and submitting data collected by several agencies

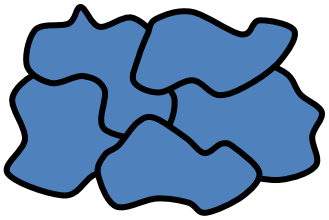


Figure 1. Illustration of possible Monitoring Entity scenarios for a monitored basin.

DWR currently monitors water elevations in about 4,000 wells statewide and cooperates with local and federal agencies to monitor roughly an additional 6,000 wells. DWR plans to continue monitoring groundwater elevations, contingent upon available funding. In some basins DWR currently does most, if not all, of the water-elevation monitoring. In these basins, a local entity still needs to notify DWR of their intent to become the Monitoring Entity. The Monitoring Entity must determine which DWR wells will be included in their CASGEM monitoring network. As long as DWR continues its monitoring program, the department will transmit its groundwater elevation data to the CASGEM system. However, if DWR is unable to continue monitoring for any reason, the Monitoring Entity will be required to re-evaluate its monitoring network to determine which wells to retain in its monitoring network.

REQUIREMENTS TO BECOME MONITORING ENTITY

Section 10927 of the Water Code defines the types of entities that may assume responsibility for monitoring and reporting groundwater elevations as part of the CASGEM program.

A summary list of eligible entities, in order of priority, and notification requirements for each entity is provided below:

1. A **watermaster or water management engineer** appointed by a court or pursuant to statute to administer a final judgment determining rights to groundwater [Section 10927(a)].
   Notification Requirements:
   - Name of Agency
   - Agency Contact Name
   - Address
   - Telephone Number
   - Email Address
   - Any other relevant contact information
   - Authority (as listed in Section 10927)
   - Name and number of basin to be monitored (from Bulletin 118)
   - Map and shapefile showing area to be monitored (Shapefiles do not need to be submitted by the initial January 1, 2011 notification date; Regional Offices can provide assistance to potential Monitoring Entities with shapefiles.)
   - Statement that the entity will comply with the requirements of Water Code Part 2.11
   - Additional information deemed necessary by DWR to identify monitoring area or qualifications of the Monitoring Entity

2. A **groundwater management agency** with statutory authority to manage groundwater pursuant to its principal act that is monitoring groundwater elevations in all or a part of a groundwater basin on or before January 1, 2010 [Section 10927(b)(1)].
   Notification Requirements:
   - Name of Agency
   - Agency Contact Name
   - Address
   - Telephone Number
   - Email Address
   - Any other relevant contact information
   - Authority (as listed in Section 10927)

- Name and number of basin to be monitored (from Bulletin 118)
- Map and shapefile showing area to be monitored (Shapefiles do not need to be submitted by the initial January 1, 2011 notification date; Regional Offices can provide assistance to potential Monitoring Entities with shapefiles.)
- Statement that the entity will comply with the requirements of Water Code Part 2.11
- Additional information deemed necessary by DWR to identify monitoring area or qualifications of the Monitoring Entity

3. A **water replenishment district** established pursuant to Water Code Division 18 (commencing with Section 60000). This part does not expand or otherwise affect the authority of a water replenishment district relating to monitoring elevations [Section 10927(b)(2)].

   Notification Requirements:
   - Name of Agency
   - Agency Contact Name
   - Address
   - Telephone Number
   - Email Address
   - Any other relevant contact information
   - Authority (as listed in Section 10927)
   - Name and number of basin to be monitored (from Bulletin 118)
   - Map and shapefile showing area to be monitored (Shapefiles do not need to be submitted by the initial January 1, 2011 notification date; Regional Offices can provide assistance to potential Monitoring Entities with shapefiles.)
   - Statement that the entity will comply with the requirements of Water Code Part 2.11
   - Additional information deemed necessary by DWR to identify monitoring area or qualifications of the Monitoring Entity

4. A **local agency that is managing all or part of a groundwater basin pursuant to Water Code Part 2.75** (commencing with Section 10750) and that was monitoring groundwater elevations in all or part of a groundwater basin on or before January 1, 2010, or a local agency or county that is managing all or part of a groundwater basin pursuant to any other legally enforceable groundwater management plan with provisions that are substantively similar to those described in that part and that was monitoring groundwater elevations in all or a part of a groundwater basin on or before January 1, 2010 [Section 10927(c)].

Notification Requirements:

- Name of Agency
- Agency Contact Name
- Address
- Telephone Number
- Email Address
- Any other relevant contact information
- Authority (as listed in Section 10927)
- Name and number of basin to be monitored (from Bulletin 118)
- Map and shapefile showing area to be monitored (Shapefiles do not need to be submitted by the initial January 1, 2011 notification date; Regional Offices can provide assistance to potential Monitoring Entities with shapefiles.)
- Statement that the entity will comply with the requirements of Water Code Part 2.11
- Copy of current groundwater management plan
- Statement describing the ability or qualifications of the entity to conduct the groundwater monitoring functions required
- Additional information deemed necessary by DWR to identify monitoring area or qualifications of the Monitoring Entity

5. A **local agency that is managing all or part of a groundwater basin pursuant to an integrated regional water management plan** prepared pursuant to Water Code Part 2.2 (commencing with Section 10530) that includes a groundwater management component that complies with the requirements of Section 10753.7 [Section 10927(d)].

   Notification Requirements:

   - Name of Agency
   - Agency Contact Name
   - Address
   - Telephone Number
   - Email Address
   - Any other relevant contact information
   - Authority (as listed in Section 10927)
   - Name and number of basin to be monitored (from Bulletin 118)
   - Map and shapefile showing area to be monitored (Shapefiles do not need to be submitted by the initial January 1, 2011 notification date; Regional Offices can provide assistance to potential Monitoring Entities with shapefiles.)
   - Statement that the entity will comply with the requirements of Water Code Part 2.11
   - Copy of current groundwater component of integrated regional water management plan
   - Statement describing the ability or qualifications of the entity to conduct the groundwater monitoring functions required

- Additional information deemed necessary by DWR to identify monitoring area or qualifications of the Monitoring Entity

6. A **county** that is not managing all or a part of a groundwater basin pursuant to a legally enforceable groundwater management plan with provisions that are substantively similar to those described in Water Code Part 2.75 (commencing with Section 10750) [Section 10927(e)].
   Notification Requirements:
   - Name of County
   - County Contact Name
   - Address
   - Telephone Number
   - Email Address
   - Any other relevant contact information
   - Authority (as listed in Section 10927)
   - Name and number of basin to be monitored (from Bulletin 118)
   - Map and shapefile showing area to be monitored (Shapefiles do not need to be submitted by the initial January 1, 2011 notification date; Regional Offices can provide assistance to potential Monitoring Entities with shapefiles.)
   - Statement that the entity will comply with the requirements of Water Code Part 2.11
   - Statement describing the ability or qualifications of the entity to conduct the groundwater monitoring functions required
   - Additional information deemed necessary by DWR to identify monitoring area or qualifications of the Monitoring Entity

7. A **voluntary cooperative groundwater monitoring association** formed pursuant to Section 10935 [Section 10927(f)]. As described in the Water Code Section 10935, the voluntary associations may be established by contract, a joint powers agreement, a memorandum of agreement, or other form of agreement deemed acceptable by DWR, so long as it contains: the names of the participants; the boundaries of the area covered by the agreement; the name or names of the parties responsible for meeting the requirements; the method of recovering the costs associated with meeting the requirements; and other provisions that may be required by DWR. Entities seeking to form a voluntary association should notify DWR, which will work cooperatively with the interested parties to facilitate the formation of the association.

Notification Requirements:

- Name of Association
- Association Contact Name
- Address
- Telephone Number
- Email Address
- Any other relevant contact information
- Authority (as listed in Section 10927)
- Name and number of basin to be monitored (from Bulletin 118)
- Map and shapefile showing area to be monitored (Shapefiles do not need to be submitted by the initial January 1, 2011 notification date; Regional Offices can provide assistance to potential Monitoring Entities with shapefiles.)
- Statement that the entity will comply with the requirements of Water Code Part 2.11
- Statement describing the ability or qualifications of the entity to conduct the groundwater monitoring functions required
- Statement of intent to meet the association formation requirements described in Section 10935
- Additional information deemed necessary by DWR to identify monitoring area or qualifications of the Monitoring Entity

Local agencies are encouraged to coordinate among themselves to determine the proposed Monitoring Entity or Entities that best suits their area. The resulting interested entity (or entities) should notify DWR of its intent to become a groundwater Monitoring Entity for one or more basins, or portions thereof by the January 1, 2011 deadline. Certain basic information is required for notification, including contact information and additional details depending on the authority of the entity desiring to monitor groundwater (Section 10928), as listed above. This notification information will be submitted to DWR using an online system that will be available by mid-December 2010.

MONITORING PLANS

Monitoring Entities will each develop a Monitoring Plan that includes the following sections: Monitoring Sites and Timing, Field Methods, and Data Reporting. Monitoring Plans should be completed and submitted to DWR by summer 2011. Staff from the DWR regional offices will be available to assist Monitoring Entities with the development of Monitoring Plans, if needed. In determining what information should be reported to DWR, the department will defer to existing monitoring programs if those programs result in information that demonstrates seasonal (annual high and low groundwater elevations) and long-term trends in groundwater elevations. Staff from the DWR regional offices will assist Monitoring Entities to address any gaps in basin coverage

(see below) and other monitoring issues and may make recommendations for the location of additional wells. However, the department has no authority to require a Monitoring Entity to install additional wells unless funds are provided for that purpose. Once a Monitoring Plan is established with DWR, Monitoring Entities should notify DWR of any changes to the plan.

Key Components of Monitoring Plans

Submit to DWR by summer 2011

- Monitoring Sites and Timing
  - Well Network Design
  - Selected wells (current)
  - Planned (future) wells
  - Frequency to capture seasonal highs and lows
  - Map and shapefile of monitoring area and well locations

Field Methods for groundwater monitoring

- Methods for measuring
  - Reference Point
  - Static water level
  - Depth to water
  - Standardized form for data collection

Data Reporting

- Online data submittal, minimum July & January each year

Data Gaps

A data gap refers to a basin or portion of a basin that is not included in any of the Monitoring Plans submitted to DWR. This is essentially an area that lacks the density of monitoring wells that would allow seasonal and long-term trends in groundwater elevations to be determined for the basin, subbasin, or a portion thereof. Among the 515 basins defined by Bulletin 118, data gaps may exist for a variety of reasons, including a lack of suitable monitoring wells, lack of groundwater use, access issues, and jurisdictional issues, among others.

If no local entity is able and/or willing to fill a data gap, the department may be required to perform groundwater monitoring functions. If DWR performs this monitoring, local agencies and the county that have the authority under Section 10927 to monitor the area of the data gap would be potentially ineligible for a water grant or loan awarded or administered by the state. The Monitoring Entity or entities with the authority to monitor the area of the data gap should provide detailed information regarding the nature of and reason for the data gap so that DWR may include such information in the prioritization of groundwater basins and subbasins as appropriate.

Agencies and counties that are eligible to be designated Monitoring Entities but choose not participate in the CASGEM program will not lose their state water grant and loan eligibility if their entire service area qualifies as a disadvantaged community (Water Code Section 10933.7(b)). It will be the responsibility of the local agency or county applying for a state water grant or loan to demonstrate their disadvantaged community status at the time they are applying for the grant or loan.

MONITORING SITES AND TIMING

The Monitoring Plan will identify the wells to be monitored and the frequency with which they will be monitored. The Monitoring Plan should explain how proposed monitoring will be sufficient to demonstrate the seasonal and long-term groundwater elevation trends in the monitored area. The density of monitoring locations will depend on the complexity of the basin.

Because of security concerns, the California Department of Public Health (DPH) routinely limits the disclosure of detailed public water supply well location information. Pursuant to Water Code Section 10931, the DWR is required to collaborate with DPH to ensure that the information reported to the CASGEM program will not result in the inappropriate disclosure of information of concern to DPH. At this time, DWR has reached no agreement with DPH regarding the appropriate treatment of public water supply well data. As a result, CASGEM does not currently plan to use such well information in its database.

The Monitoring Plan should contain a table identifying the wells to be monitored and the timing of that monitoring. Because the law specifies that information should demonstrate seasonal and long-term trends in groundwater elevations, at a minimum monitoring should be conducted at each location for the yearly high and low for the basin. The yearly high and low groundwater elevations typically occur in spring and fall, but this may vary from basin to basin. It is very important that the timing of all the measurements in the basin is coordinated. Rationale for selection of the timing (seasonal highs and lows) should be included in the Monitoring Plan.

The information on the monitoring sites and timing to be submitted in the online system should include:

- Well identification number
- State well number
- Location (decimal latitude and longitude, North American Datum (NAD) 83)
- Reference point elevation (feet, North American Vertical Datum (NAVD) 88)
- Land surface datum (feet, NAVD88)
- Map and shapefile with monitoring locations, Bulletin 118 groundwater basin boundary, and boundary of monitoring area
- Frequency and timing of measurements

FIELD METHODS

The consistent and documented collection of groundwater elevation data is important for ensuring that the data can be used across the state, regardless of the Monitoring Entity. The field methods should meet a common set of basic requirements; however, the methods do not have to be exactly the same. Many entities already have in place monitoring efforts that are successful in meeting local needs and that can meet the needs for this program, either as-is or with the incorporation of individual components. The CASGEM program wishes to maintain, to the greatest extent possible, the procedures of high-quality local groundwater elevation monitoring programs, so long as they meet the overall program goals and policies. Of particular concern are the following basic requirements:

- Method(s) to establish the Reference Point, including step-by-step instructions
- Method(s) to ensure static groundwater elevation
- Method(s) to measure depth to water, including step-by-step instructions
- Method(s) and form(s) for recording measurements

It is the responsibility of each Monitoring Entity to develop and implement monitoring protocols that are appropriate to local groundwater basin conditions, protect the water quality of its monitoring wells, and maintain the quality of the data that it submits to the CASGEM Program. DWR has developed field guidelines (Department of Water Resources Groundwater Elevation Monitoring Guidelines) based on a review of existing field methods from DWR and other organizations, which is available on the CASGEM website. Monitoring Entities are welcome to refer to these guidelines when developing field methods for their own Monitoring Plans. However, the DWR guidelines are for internal use in the event that the Department is required to perform groundwater monitoring functions pursuant to Section 10933.5 and are not binding on any other agency. The core of the CASGEM program will rely and build on the many, established local long-term groundwater monitoring and management programs. The department will defer to existing monitoring programs that result in information that demonstrates seasonal and long-term trends in groundwater elevations.

DATA REPORTING

DWR will develop an online data submittal system for Monitoring Entities to submit their groundwater elevation data. Several methods of submitting data will be available, such as direct online data entry, or upload of data files for batch entry. Initial groundwater elevation data should be submitted to DWR by January 1, 2012. Thereafter, data

should be submitted as soon as possible after collection, but no later than January 1st and July 1st of each year, at the minimum. Historical data can also be submitted via the DWR data system to aid in data interpretation. All submitted data will be available to the public, except for confidential data.

Each groundwater elevation data measurement submitted to the online system should include:

- Well identification number
- Measurement date
- Reference point and land surface elevation
- Depth to water
- Method of measuring water depth
- Measurement quality codes

The Monitoring Entity information, well information, and groundwater elevation information is to be provided by the Monitoring Entity. Items labeled as required must be submitted to DWR to report groundwater elevations. Items labeled as recommended should be submitted to DWR if they are available, as they assist in fully evaluating the quality of measurements. DWR will provide standard form(s) for Monitoring Entities to submit groundwater elevation data online. However, if Monitoring Entities cannot use the standard form(s) or provide the data elements listed below, DWR will work cooperatively with Monitoring Entities to develop alternate methods of submitting data.

Entity Information

All entities assuming groundwater monitoring functions as delineated in Section 10927 (a)-(f) are required to submit the following information:

- Monitoring Entity's name, address, telephone number, contact person name and email address, and any other relevant contact information (Section 10928 (a) (1), 10928 (b) (1))
- Name, address, telephone number, email address and any other relevant contact information for entities collecting data that is submitted by a designated submitting entity (Monitoring Entity)
- Groundwater basins being monitored
    - Identify entire basins monitored
    - Identify partial basins monitored

Well Information

The following information about each well is required for the CASGEM online system:

- Unique well identification number. Agencies may use an existing State Well Number, an existing local well designation, or develop their own identification name, using the following protocol:
    - Agency name, abbreviation, or acronym followed by a sequential number (e.g., SGA 01)
    - Groundwater basin – followed by a sequential number (e.g., Llagas 03)
    - Geographic name – followed by a sequential number (e.g., Yolo 12)
    - Well names should be 15 characters long or less
    - Avoid using owner/business names or specific locational information for privacy and security
- Decimal latitude/longitude coordinates of well, using horizontal datum NAD83, and the method of determining coordinates (Actual coordinates are preferred; however, Monitoring Entities may submit approximate locations, as needed, to protect the privacy of well owners. For example, to protect the privacy of a well owner, a Monitoring Entity may submit well coordinate locations that are only within 1000-feet of the actual well location.)
- Groundwater basin or sub-basin
- Reference point elevation of the well (feet) using NAVD88 vertical datum
- Elevation of land surface datum at the well (feet) using NAVD88 vertical datum
- Use of well (e.g., dedicated monitoring, irrigation, domestic, etc)
- Well completion type (e.g. single well, nested, or multi-completion wells)
- Depth of screened interval(s) and total well depth of well, if available (feet)
- Well Completion Report number (DWR Form 188), if available

The following information about each well is recommended for the CASGEM online system:

- State Well Number – assigned by DWR in most cases
- Method by which land surface elevation was determined (for example, topographic map, GPS, etc.)
- Written description of location of well, including distance from nearby landmarks and location of reference point in relation to well appurtenances (DWR Form 429)
- Well information comments

Groundwater Elevation Information

The following information for each groundwater elevation measurement is required for the CASGEM online system:

- Well identification number (see Well Information, above)
- Measurement date
- Reference point elevation of the well (feet) using NAVD88 vertical datum
- Elevation of land surface datum at the well (feet) using NAVD88 vertical datum
- Depth to water below reference point (feet) (unless no measurement was taken)
- Method of measuring water depth
- Measurement Quality Codes

    - If no measurement is taken, a specified “no measurement” code, must be recorded. Standard codes will be provided by the online system. If a measurement is taken, a “no measurement” code is not recorded.)
    - If the quality of a measurement is uncertain, a “questionable measurement” code can be recorded. Standard codes will be provided by the online system. If no measurement is taken, a “questionable measurement” code is not recorded.)
- Measuring agency identification

The following information for each groundwater elevation measurement is recommended for the CASGEM online system:

- Measurement time (PST/PDT with military time/24 hour format)
- Comments about measurement, if applicable

Groundwater elevation data shall be submitted electronically to DWR’s online system. DWR will develop electronic data transmittal (EDT) alternatives and data standards to permit bulk data transfer and assist Monitoring Entities in EDT reporting to DWR. As stated above, if Monitoring Entities cannot use the standard form(s) or provide the necessary groundwater elevation data elements, DWR will work cooperatively with Monitoring Entities to develop alternate methods of submitting data.

The CASGEM online data submittal system will be compatible with the Water Data Library (WDL) (http://www.water.ca.gov/waterdatalibrary/), DWR’s existing groundwater elevation database. The CASGEM system will include data reporting options similar to those in WDL, such as hydrographs, seasonal contour data, and data downloads. The combined accessibility of the WDL and the CASGEM system will be a significant resource for local agencies in making sound groundwater management decisions.

REFERENCES

California Departement of Water Resources. (2003). *California's Groundwater, Bulletin 118-03.*

California Department of Water Resources. (2009). *California Water Plan Update 2009, Bulletin 160-09.*

APPENDIX – SENATE BILL 6 (7TH EXTRAORDINARY SESSION) - GROUNDWATER MONITORING

Senate Bill No. 6

CHAPTER 1

An act to add Part 2.11 (commencing with Section 10920) to Division 6 of, and to repeal and add Section 12924 of, the Water Code, relating to groundwater.

[Approved by Governor November 6, 2009. Filed with Secretary of State November 6, 2009.]

Legislative Counsel's Digest

SB 6, Steinberg. Groundwater.

(1) Existing law authorizes a local agency whose service area includes a groundwater basin that is not subject to groundwater management to adopt and implement a groundwater management plan pursuant to certain provisions of law. Existing law requires a groundwater management plan to include certain components to qualify as a plan for the purposes of those provisions, including a provision that establishes funding requirements for the construction of certain groundwater projects.

This bill would establish a groundwater monitoring program pursuant to which specified entities, in accordance with prescribed procedures, may propose to be designated by the Department of Water Resources as groundwater monitoring entities, as defined, for the purposes of monitoring and reporting with regard to groundwater elevations in all or part of a basin or subbasin, as defined. The bill would require the department to work cooperatively with each monitoring entity to determine the manner in which groundwater elevation information should be reported to the department. The bill would authorize the department to make recommendations for improving an existing monitoring program, and to require additional monitoring wells under certain circumstances. Under certain circumstances, the department would be required to perform groundwater monitoring functions. In that event, prescribed entities with authority to assume groundwater monitoring functions with regard to a basin or subbasin for which the department has assumed those functions would not be eligible for a water grant or loan awarded or administered by the state.

(2) Existing law requires the department to conduct an investigation of the state's groundwater basins and to report its findings to the Governor and the Legislature not later than January 1, 1980.

This bill would repeal that provision. The department would be required to conduct an investigation of the state's groundwater basins and to report its findings to the Governor and the Legislature not later than January 1, 2012, and thereafter in years ending in 5 or 0.

(3) The bill would take effect only if SB 1 and SB 7 of the 2009–10 7th Extraordinary Session of the Legislature are enacted and become effective.

The people of the State of California do enact as follows:

SECTION 1. Part 2.11 (commencing with Section 10920) is added to Division 6 of the Water Code, to read:

PART 2.11. GROUNDWATER MONITORING

Chapter 1. General Provisions

10920. (a) It is the intent of the Legislature that on or before January 1, 2012, groundwater elevations in all groundwater basins and subbasins be regularly and systematically monitored locally and that the resulting groundwater information be made readily and widely available.

(b) It is further the intent of the Legislature that the department continue to maintain its current network of monitoring wells, including groundwater elevation and groundwater quality monitoring wells, and that the department continue to coordinate monitoring with local entities.

10921. This part does not require the monitoring of groundwater elevations in an area that is not within a basin or subbasin.

10922. This part does not expand or otherwise affect the powers or duties of the department relating to groundwater beyond those expressly granted by this part.

Chapter 2. Definitions

10925. Unless the context otherwise requires, the definitions set forth in this section govern the construction of this part.

(a) “Basin” or “subbasin” means a groundwater basin or subbasin identified and defined in the department’s Bulletin No. 118.

(b) “Bulletin No. 118” means the department’s report entitled “California’s Groundwater: Bulletin 118” updated in 2003, or as it may be subsequently updated or revised in accordance with Section 12924.

(c) “Monitoring entity” means a party conducting or coordinating the monitoring of groundwater elevations pursuant to this part.

(d) “Monitoring functions” and “groundwater monitoring functions” means the monitoring of groundwater elevations, the reporting of those elevations to the department, and other related actions required by this part.

(e) “Monitoring groundwater elevations” means monitoring groundwater elevations, coordinating the monitoring of groundwater elevations, or both.

(f) “Voluntary cooperative groundwater monitoring association” means an association formed for the purposes of monitoring groundwater elevations pursuant to Section 10935.

Chapter 3. Groundwater Monitoring Program

10927. Any of the following entities may assume responsibility for monitoring and reporting groundwater elevations in all or a part of a basin or subbasin in accordance with this part:

(a) A watermaster or water management engineer appointed by a court or pursuant to statute to administer a final judgment determining rights to groundwater.

(b) (1) A groundwater management agency with statutory authority to manage groundwater pursuant to its principal act that is monitoring groundwater elevations in all or a part of a groundwater basin or subbasin on or before January 1, 2010.

(2) A water replenishment district established pursuant to Division 18 (commencing with Section 60000). This part does not expand or otherwise affect the authority of a water replenishment district relating to monitoring groundwater elevations.

(c) A local agency that is managing all or part of a groundwater basin or subbasin pursuant to Part 2.75 (commencing with Section 10750) and that was monitoring

groundwater elevations in all or a part of a groundwater basin or subbasin on or before January 1, 2010, or a local agency or county that is managing all or part of a groundwater basin or subbasin pursuant to any other legally enforceable groundwater management plan with provisions that are substantively similar to those described in that part and that was monitoring groundwater elevations in all or a part of a groundwater basin or subbasin on or before January 1, 2010.

(d) A local agency that is managing all or part of a groundwater basin or subbasin pursuant to an integrated regional water management plan prepared pursuant to Part 2.2 (commencing with Section 10530) that includes a groundwater management component that complies with the requirements of Section 10753.7.

(e) A county that is not managing all or a part of a groundwater basin or subbasin pursuant to a legally enforceable groundwater management plan with provisions that are substantively similar to those described in Part 2.75 (commencing with Section 10750).

(f) A voluntary cooperative groundwater monitoring association formed pursuant to Section 10935.

10928. (a) Any entity described in subdivision (a) or (b) of Section 10927 that seeks to assume groundwater monitoring functions in accordance with this part shall notify the department, in writing, on or before January 1, 2011. The notification shall include all of the following information:

(1) The entity's name, address, telephone number, and any other relevant contact information.

(2) The specific authority described in Section 10927 pursuant to which the entity qualifies to assume the groundwater monitoring functions.

(3) A map showing the area for which the entity is requesting to perform the groundwater monitoring functions.

(4) A statement that the entity will comply with all of the requirements of this part.

(b) Any entity described in subdivision (c), (d), (e), or (f) of Section 10927 that seeks to assume groundwater monitoring functions in accordance with this part shall notify the department, in writing, by January 1, 2011. The information provided in the notification shall include all of the following:

(1) The entity's name, address, telephone number, and any other relevant contact information.

(2) The specific authority described in Section 10927 pursuant to which the entity qualifies to assume the groundwater monitoring functions.

(3) For entities that seek to qualify pursuant to subdivision (c) or (d) of Section 10927, the notification shall also include a copy of the current groundwater management plan or the groundwater component of the integrated regional water management plan, as appropriate.

(4) For entities that seek to qualify pursuant to subdivision (f) of Section 10927, the notification shall include a statement of intention to meet the requirements of Section 10935.

(5) A map showing the area for which the entity is proposing to perform the groundwater monitoring functions.

(6) A statement that the entity will comply with all of the requirements of this part.

(7) A statement describing the ability and qualifications of the entity to conduct the groundwater monitoring functions required by this part.
(c) The department may request additional information that it deems necessary for the purposes of determining the area that is proposed to be monitored or the qualifications of the entity to perform the groundwater monitoring functions.

10929. (a) (1) The department shall review all notifications received pursuant to Section 10928.

(2) Upon the receipt of a notification pursuant to subdivision (a) of Section 10928, the department shall verify that the notifying entity has the appropriate authority under subdivision (a) or (b) of Section 10927.

(3) Upon the receipt of a notification pursuant to subdivision (b) of Section 10928, the department shall do both of the following:

(A) Verify that each notification is complete.

(B) Assess the qualifications of the notifying party.

(b) If the department has questions about the completeness or accuracy of a notification, or the qualifications of a party, the department shall contact the party to resolve any deficiencies. If the department is unable to resolve the deficiencies, the department shall notify the party in writing that the notification will not be considered further until the deficiencies are corrected.

(c) If the department determines that more than one party seeks to become the monitoring entity for the same portion of a basin or subbasin, the department shall consult with the interested parties to determine which party will perform the monitoring functions. In determining which party will perform the monitoring functions under this part, the department shall follow the order in which entities are identified in Section 10927.

(d) The department shall advise each party on the status of its notification within three months of receiving the notification.

10930. Upon completion of each review pursuant to Section 10929, the department shall do both of the following if it determines that a party will perform monitoring functions under this part:

(a) Notify the party in writing that it is a monitoring entity and the specific portion of the basin or subbasin for which it shall assume groundwater monitoring functions.

(b) Post on the department's Internet Web site information that identifies the monitoring entity and the portion of the basin or subbasin for which the monitoring entity will be responsible.

10931. (a) The department shall work cooperatively with each monitoring entity to determine the manner in which groundwater elevation information should be reported to the department pursuant to this part. In determining what information should be reported to the department, the department shall defer to existing monitoring programs if those programs result in information that demonstrates seasonal and long-term trends in groundwater elevations. The department shall collaborate with the State Department of Public Health to ensure that the information reported to the department will not result in the inappropriate disclosure of the physical address or geographical location of drinking water sources, storage facilities, pumping operational data, or treatment facilities.

(b) (1) For the purposes of this part, the department may recommend improvements to an existing monitoring program, including recommendations for additional monitoring wells.

(2) The department may not require additional monitoring wells unless funds are provided for that purpose.

10932. Monitoring entities shall commence monitoring and reporting groundwater elevations pursuant to this part on or before January 1, 2012.

10933. (a) On or before January 1, 2012, the department shall commence to identify the extent of monitoring of groundwater elevations that is being undertaken within each basin and subbasin.

(b) The department shall prioritize groundwater basins and subbasins for the purpose of implementing this section. In prioritizing the basins and subbasins, the department shall, to the extent data are available, consider all of the following:

(1) The population overlying the basin or subbasin.

(2) The rate of current and projected growth of the population overlying the basin or subbasin.

(3) The number of public supply wells that draw from the basin or subbasin.

(4) The total number of wells that draw from the basin or subbasin.

(5) The irrigated acreage overlying the basin or subbasin.

(6) The degree to which persons overlying the basin or subbasin rely on groundwater as their primary source of water.

(7) Any documented impacts on the groundwater within the basin or subbasin, including overdraft, subsidence, saline intrusion, and other water quality degradation.

(8) Any other information determined to be relevant by the department.

(c) If the department determines that all or part of a basin or subbasin is not being monitored pursuant to this part, the department shall do all of the following:

(1) Attempt to contact all well owners within the area not being monitored.

(2) Determine if there is an interest in establishing any of the following:

(A) A groundwater management plan pursuant to Part 2.75 (commencing with Section 10750).

(B) An integrated regional water management plan pursuant to Part 2.2 (commencing with Section 10530) that includes a groundwater management component that complies with the requirements of Section 10753.7.

(C) A voluntary groundwater monitoring association pursuant to Section 10935.

(d) If the department determines that there is sufficient interest in establishing a plan or association described in paragraph (2) of subdivision (c), or if the county agrees to perform the groundwater monitoring functions in accordance with this part, the department shall work cooperatively with the interested parties to comply with the requirements of this part within two years.

(e) If the department determines, with regard to a basin or subbasin, that there is insufficient interest in establishing a plan or association described in paragraph (2) of subdivision (c), and if the county decides not to perform the groundwater monitoring and reporting functions of this part, the department shall do all of the following:

(1) Identify any existing monitoring wells that overlie the basin or subbasin that are owned or operated by the department or any other state or federal agency.

(2) Determine whether the monitoring wells identified pursuant to paragraph (1) provide sufficient information to demonstrate seasonal and long-term trends in groundwater elevations.

(3) If the department determines that the monitoring wells identified pursuant to paragraph (1) provide sufficient information to demonstrate seasonal and long-term trends in groundwater elevations, the department shall not perform groundwater monitoring functions pursuant to Section 10934.

(4) If the department determines that the monitoring wells identified pursuant to paragraph (1) provide insufficient information to demonstrate seasonal and long-term trends in groundwater elevations, and the State Mining and Geology Board concurs with

that determination, the department shall perform groundwater monitoring functions pursuant to Section 10934.[1]

10933.5. (a) Consistent with Section 10933, the department shall perform the groundwater monitoring functions for those portions of a basin or subbasin for which no monitoring entity has agreed to perform the groundwater monitoring functions.

(b) Upon determining that it is required to perform groundwater monitoring functions, the department shall notify both of the following entities that it is forming the groundwater monitoring district:

(1) Each well owner within the affected area.

(2) Each county that contains all or a part of the affected area.

(c) The department shall not assess a fee or charge to recover the costs for carrying out its power and duties under this part.

(d) The department may establish regulations to implement this section.

10933.7. (a) If the department is required to perform groundwater monitoring functions pursuant to Section 10933.5, the county and the entities described in subdivisions (a) to (d), inclusive, of Section 10927 shall not be eligible for a water grant or loan awarded or administered by the state.

(b) Notwithstanding subdivision (a), the department shall determine that an entity described in subdivision (a) is eligible for a water grant or loan under the circumstances described in subdivision (a) if the entity has submitted to the department for approval documentation demonstrating that its entire service area qualifies as a disadvantaged community.

10934. (a) For purposes of this part, neither any entity described in Section 10927, nor the department, shall have the authority to do either of the following:

(1) To enter private property without the consent of the property owner.

[1] The reference in Section 10933(e)(4) to Section 10934 has been amended by Stats. 2010, Ch. 328, sec. 237 (S.B. 1330). The new reference will be to Section 10933.5.

(2) To require a private property owner to submit groundwater monitoring information to the entity.

(b) This section does not apply to a county or an entity described in subdivisions (a) to (d), inclusive, of Section 10927 that assumed responsibility for monitoring and reporting groundwater elevations prior to the effective date of this part.

10935. (a) A voluntary cooperative groundwater monitoring association may be formed for the purposes of monitoring groundwater elevations in accordance with this part. The association may be established by contract, a joint powers agreement, a memorandum of agreement, or other form of agreement deemed acceptable by the department.

(b) Upon notification to the department by one or more entities that seek to form a voluntary cooperative groundwater monitoring association, the department shall work cooperatively with the interested parties to facilitate the formation of the association.

(c) The contract or agreement shall include all of the following:

(1) The names of the participants.

(2) The boundaries of the area covered by the agreement.

(3) The name or names of the parties responsible for meeting the requirements of this part.

(4) The method of recovering the costs associated with meeting the requirements of this part.

(5) Other provisions that may be required by the department.

10936. Costs incurred by the department pursuant to this chapter may be funded from unallocated bond revenues pursuant to paragraph (12) of subdivision (a) of Section 75027 of the Public Resources Code, to the extent those funds are available for those purposes.

SEC. 2. Section 12924 of the Water Code is repealed.

SEC. 3. Section 12924 is added to the Water Code, to read:

12924. (a) The department, in conjunction with other public agencies, shall conduct an investigation of the state's groundwater basins. The department shall identify the state's groundwater basins on the basis of geological and hydrological conditions and consideration of political boundary lines whenever practical. The department shall also investigate existing general patterns of groundwater pumping and groundwater recharge within those basins to the extent necessary to identify basins that are subject to critical conditions of overdraft.

(b) The department shall report its findings to the Governor and the Legislature not later than January 1, 2012, and thereafter in years ending in 5 or 0.

SEC. 4. This act shall take effect only if Senate Bill 1 and Senate Bill 7 of the 2009–10 Seventh Extraordinary Session of the Legislature are enacted and become effective.

Appendix 3-B

Monitoring Forms and Protocols

DRAFT

WATER-LEVEL MEASUREMENT FIELD FORM

Date (YYYY/MM/DD): Site ID:

Well Type: Production / Monitoring / Private Measuring Agency/Entity:

Well Pumping? Is Water Level Static?

Method of Water Level Measurement (see below): Site Status (see below):

Measuring Equipment ID: Measuring Point Elevation (ft NAVD88):

WATER LEVEL DATA

Time of Measurement					
Measurement (feet)					
Tape Correction (feet)					
Water Level below MP (feet)					
Measuring Point Correction					
Water Level below Land Surface					
Water Elevation (ft NAVD88)					

Measured by: Comments:*

*Comments should include quality concerns and changes that affect the representativeness of the measurements (e.g., changes in MP elevation, ownership, well operations, access to measure DTW, etc.)

Site Status: D = dry; O = obstructed; P = pumping; R = recently pumped and recovering; NP = nearby pumping; V = foreign substance; WD = well destroyed; SW = surface water effects; Z = other; S = Static

Method of Water Level Measurement: A = airline; B = analog; C = calibrated airline; E = estimated; G = pressure gauge; H = calibrated pressure gage; M = manometer; R = reported; S = steel tape; T = electric tape; V = calibrated electric tape; Z = other.

NOTES:

Measuring Protocol:

1. Check circuitry of electrical tape before lowering the probe into the well by dipping probe into tap water.
2. Make all readings using the same indicator for consistency (light intensity or sound).
3. Lower electrode probe slowly into the well until the indicator shows that the circuit is closed and contact with the water surface is made. Place the nail of the index finger on the insulated wire at the MP (Measuring Point) and read the depth-to-water.
4. Record time of measurement. Record depth to water in the row “Measurement (feet)”. If the tape has been repaired and spliced or has a calibration correction, subtract the “Tape Correction” value from the “Measurement” value and record the difference in the row “Water Level below MP”.
5. Pull the tape up and make a check measurement by repeating steps 3-4. Record the check measurement in column 2. If check measurement does not agree with the original measurement within 0.02 foot, continue to make measurements until the reason of lack of agreement is determined or the results are shown to be reliable. If more than 2 measurements are made, use best judgment to select measurement most representative of field conditions.
6. Disinfect and rinse that part of tape that was submerged below water. Dry tape and rewind.

Format instructions and notes:

Site ID:	Well identified or State Well No.
MP:	measuring point
ft NAVD88:	feet above the National Vertical Datum of 1988.
Measuring Equipment ID:	serial number or identifier of measuring equipment

WELL PRODUCTION RECORD

Date	Time	Well ID	Totalizer Reading (Gallons)	Instantaneous Pumping Rate (GPM)	Estimated Pumping Rate (GPM)	Model and Make of Totalizer

WATER QUALITY FIELD FORM

Date (YYYY/MM/DD): Site ID:

Well Type: Production / Monitoring / Private Measuring Agency/Entity:

Well Pumping? If so, how long? Is Initial Water Level Static?

Method of Well Purging (see below): Site Status (see below):

Purging Equipment ID: Water Quality Meter ID:

Purge Volume Calculation:

[A] Total depth of well casing (ft bls): [C] Well Casing Inside Diameter (inches):

[B] Static depth to water, if not pumping (ft bls): [D] Length of Water Column, [A] - [B] (ft):

Purge Volume (3 Casing Volumes), ([D] * π/4 * ([C]/12)^2) * 3 =

WATER QUALITY PARAMETERS

Time	Purge Rate	Temperature (^{o}C)	pH	Conductivity ( )	Oxidation-Reduction Potential (mV)	Dissolved Oxygen (mg/L)	Turbidity (NTUs)

Measured by: Comments:*

WATER QUALITY FIELD FORM

*Comments should include quality concerns and changes that affect the representativeness of the measurements (e.g., changes in pump placement, ownership, well operations, access to sampling port, etc.)

Site Status: D = dry; O = obstructed; P = pumping; R = recently pumped and recovering; NP = nearby pumping; V = foreign substance; WD = well destroyed; SW = surface water effects; Z = other; S = Static

Method of Well Purging: B = bailer; D = dedicated submersible pump; P = portable submersible pump; T = dedicated turbine pump; S = peristaltic pump.

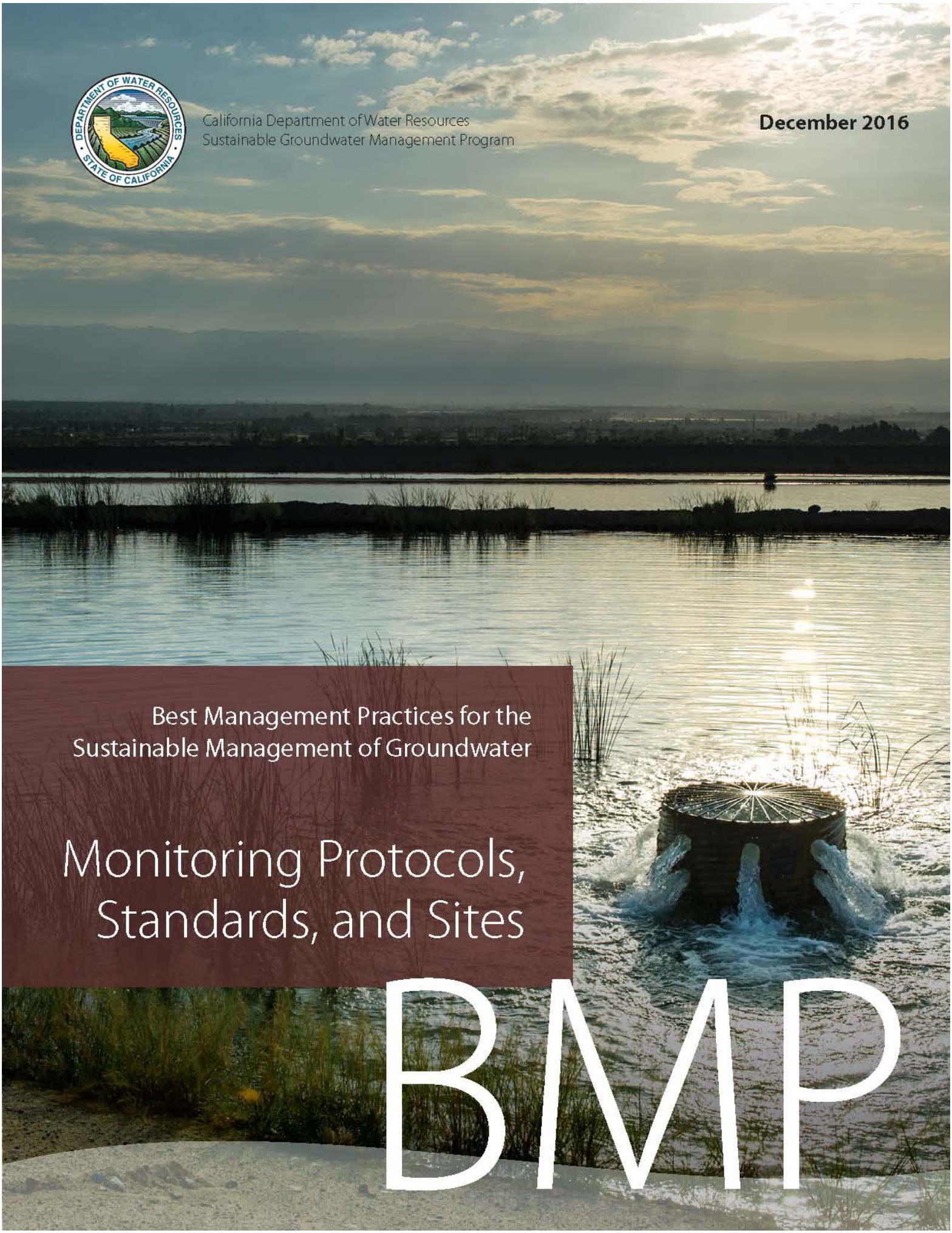
NOTES:

Purging and Sampling Protocol:

1	If the well has a dedicated pump and it is operating, ensure that it has been operating consistently and at least three (3) casing volumes have been pumped. If not, note pumping rate and time to purge 3 casing volumes before collecting representative samples. Measure and record water quality parameters through purging process.
2	If the well does not have a dedicate pump, then use purging equipment (e.g., portable submersible pump, bailer) to purge well. If using a portable submersible pump, lower pump to depth (consistent with previous smapling events) that ensures pump will not draw water level down to intake and, if possible, is positioned above the top of the well screen.
3	Ensure that portable purging equipment is properly decontaminated prior to use. Any decontamination must be documented (e.g., material used to decontaminate equipment, rinsing method, containment of waste, waste disposal).
4	Measure and/or record purge rate periodically. Collect purge sample to measure parameters periodically. Parameters should stablize (within 10% of previous three readings) before collecting the water quality sample.
5	Use the appropriate sample containers provided by the analytical laboratory. Sample containers shoud be labeled prior to sample collection. The sample label should include: Sample ID (often well ID), sample date and time of collection, sampling personnel, preservative used (if any), and the analytical method to be used on the sample.
6	All samples should be preserved as soon as possible in an ice chest containing ice. The samples should be chilled and maintained at 4 ^{o}C.
7	The Chain-of-Custory form should be filled out as the sample is collected and preserved.

Format instructions and notes:

Site ID:	Well identifier or State Well No.
ft bls:	feet below land surface
Purging Equipment ID/description:	serial number or identifier of measuring equipment


California Department of Water Resources
Sustainable Groundwater Management Program
December 2016
Best Management Practices for the
Sustainable Management of Groundwater
Monitoring Protocols,
Standards, and Sites
BMP

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California Natural Resources Agency
John Laird, Secretary for Natural Resources

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Groundwater Monitoring Protocols, Standards, and Sites
Best Management Practice

1. OBJECTIVE

The objective of this *Best Management Practice* (BMP) is to assist in the development of Monitoring Protocols. The California Department of Water Resources (the Department or DWR) has developed this document as part of the obligation in the Technical Assistance chapter (Chapter 7) of the Sustainable Groundwater Management Act (SGMA) to support the long-term sustainability of California's groundwater *basins*. Information provided in this BMP provides technical assistance to Groundwater Sustainability Agencies (GSAs) and other stakeholders to aid in the establishment of consistent data collection processes and procedures. In addition, this BMP can be used by GSAs to adopt a set of sampling and measuring procedures that will yield similar data regardless of the monitoring personnel. Finally, this BMP identifies available resources to support the development of monitoring protocols.

This BMP includes the following sections:

1. Objective. A brief description of how and where monitoring protocols are required under SGMA and the overall objective of this BMP.
2. Use and Limitations. A brief description of the use and limitations of this BMP.
3. Monitoring Protocol Fundamentals. A description of the general approach and background of groundwater monitoring protocols.
4. Relationship of Monitoring Protocols to other BMPs. A description of how this BMP is connected with other BMPS.
5. Technical Assistance. Technical content providing guidance for regulatory sections.
6. Key Definitions. Descriptions of definitions identified in the GSP Regulations or SGMA.
7. Related Materials. References and other materials that provide supporting information related to the development of Groundwater Monitoring Protocols.

2. USE AND LIMITATIONS

BMPs developed by the Department provide technical guidance to GSAs and other stakeholders. Practices described in these BMPs do not replace the GSP Regulations, nor do they create new requirements or obligations for GSAs or other stakeholders. In addition, using this BMP to develop a GSP does not equate to an approval determination by the Department. All references to GSP Regulations relate to Title 23 of the California Code of Regulations (CCR), Division 2, Chapter 1.5, and Subchapter 2. All references to SGMA relate to California Water Code sections in Division 6, Part 2.74.

3. MONITORING PROTOCOL FUNDAMENTALS

Establishing data collection protocols that are based on best available scientific methods is essential. Protocols that can be applied consistently across all basins will likely yield comparable data. Consistency of data collection methods reduces uncertainty in the comparison of data and facilitates more accurate communication within basins as well as between basins.

Basic minimum technical standards of accuracy lead to quality data that will better support implementation of GSPs.

4. RELATIONSHIP OF MONITORING PROTOCOL TO OTHER BMPS

Groundwater monitoring is a fundamental component of SGMA, as each GSP must include a sufficient network of data that demonstrates measured progress toward the achievement of the sustainability goal for each basin. For this reason, a standard set of protocols need to be developed and utilized.

It is important that data is developed in a manner consistent with the basin setting, planning, and projects/management actions steps identified on **Figure 1** and the GSP Regulations. The inclusion of monitoring protocols in the GSP Regulations also emphasizes the importance of quality empirical data to support GSPs and provide comparable information from basin to basin.

Figure 1 provides a logical progression for the development of a GSP and illustrates how monitoring protocols are linked to other related BMPs. This figure also shows the context of the BMPs as they relate to various steps to sustainability as outlined in the GSP Regulations. The monitoring protocol BMP is part of the Monitoring step identified in **Figure 1**.

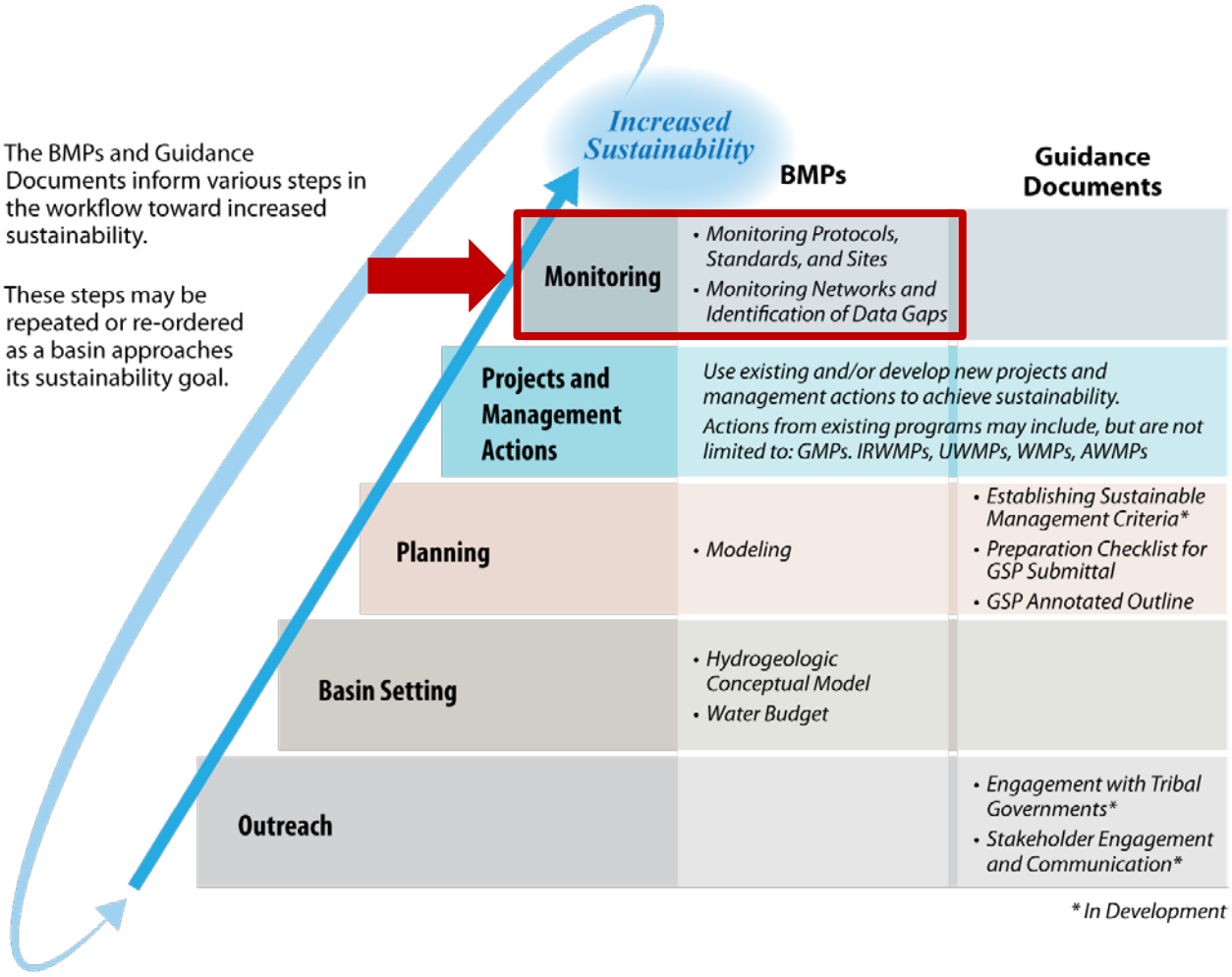


Figure 1 – Logical Progression of Basin Activities Needed to Increase Basin Sustainability

5. TECHNICAL ASSISTANCE

23 CCR §352.2. Monitoring Protocols. Each Plan shall include monitoring protocols adopted by the Agency for data collection and management, as follows:
(a) Monitoring protocols shall be developed according to best management practices.
(b) The Agency may rely on monitoring protocols included as part of the best management practices developed by the Department, or may adopt similar monitoring protocols that will yield comparable data.
(c) Monitoring protocols shall be reviewed at least every five years as part of the periodic evaluation of the Plan, and modified as necessary.

The GSP Regulations specifically call out the need to utilize protocols identified in this BMP, or develop similar protocols. The following technical protocols provide guidance based upon existing professional standards and are commonly adopted in various groundwater-related programs. They provide clear techniques that yield quality data for use in the various components of the GSP. They can be further elaborated on by individual GSAs in the form of standard operating procedures which reflect specific local requirements and conditions. While many methodologies are suggested in this BMP, it should be understood that qualified professional judgment should be used to meet the specific monitoring needs.

The following BMPs may be incorporated into a GSP's monitoring protocols section for collecting groundwater elevation data. A GSP that adopts protocols that deviate from these BMPs must demonstrate that they will yield comparable data.

PROTOCOLS FOR ESTABLISHING A MONITORING PROGRAM

The protocol for establishment of a monitoring program should be evaluated in conjunction with the *Monitoring Network and Identification of Data Gaps* BMP and other BMPs. Monitoring protocols must take into consideration the *Hydrogeologic Conceptual Model, Water Budget, and Modeling* BMPs when considering the data needs to meet GSP objectives and the sustainability goal.

It is suggested that each GSP incorporate the Data Quality Objective (DQO) process following the U.S. EPA *Guidance on Systematic Planning Using the Data Quality Objectives Process* (EPA, 2006). Although strict adherence to this method is not required, it does provide a robust approach to consider and assures that data is collected with a specific purpose in mind, and efforts for monitoring are as efficient as possible to achieve the objectives of the GSP and compliance with the GSP Regulations.

The DQO process presents a method that can be applied directly to the sustainability criteria quantitative requirements through the following steps.

1. State the problem – Define sustainability indicators and planning considerations of the GSP and sustainability goal.
2. Identify the goal – Describe the quantitative measurable objectives and minimum thresholds for each of the sustainability indicators.
3. Identify the inputs – Describe the data necessary to evaluate the sustainability indicators and other GSP requirements (i.e. water budget).
4. Define the boundaries of the study – This is commonly the extent of the Bulletin 118 groundwater basin or subbasin, unless multiple GSPs are prepared for a given basin. In that case, evaluation of the coordination plan and specifically how the monitoring will be comparable and meet the sustainability goals for the entire basin.
5. Develop an analytical approach – Determine how the quantitative sustainability indicators will be evaluated (i.e. are special analytical methods required that have specific data needs).
6. Specify performance or acceptance criteria – Determine what quality the data must have to achieve the objective and provide some assurance that the analysis is accurate and reliable.
7. Develop a plan for obtaining data – Once the objectives are known determine how these data should be collected. Existing data sources should be used to the greatest extent possible.

These steps of the DQO process should be used to guide GSAs to develop the most efficient monitoring process to meet the measurable objectives of the GSP and the sustainability goal. The DQO process is an iterative process and should be evaluated regularly to improve monitoring efficiencies and meet changing planning and project needs. Following the DQO process, GSAs should also include a data quality control and quality assurance plan to guide the collection of data.

Many monitoring programs already exist as part of ongoing groundwater management or other programs. To the extent possible, the use of existing monitoring data and programs should be utilized to meet the needs for characterization, historical record documentation, and continued monitoring for the SGMA program. However, an evaluation of the existing monitoring data should be performed to assure the data being collected meets the DQOs, regulatory requirements, and data collection protocol described in this BMP. While this BMP provides guidance for collection of various

regulatory based requirements, there is flexibility among the various methodologies available to meet the DQOs based upon professional judgment (local conditions or project needs).

At a minimum, for each monitoring site, the following information or procedure should be collected and documented:

- Long-term access agreements. Access agreements should include year-round site access to allow for increased monitoring frequency.
- A unique identifier that includes a general written description of the site location, date established, access instructions and point of contact (if necessary), type of information to be collected, latitude, longitude, and elevation. Each monitoring location should also track all modifications to the site in a modification log.

PROTOCOLS FOR MEASURING GROUNDWATER LEVELS

This section presents considerations for the methodology of collection of groundwater level data such that it meets the requirements of the GSP Regulations and the DQOs of the specific GSP. Groundwater levels are a fundamental measure of the status of groundwater conditions within a basin. In many cases, relationships of the sustainability indicators may be able to be correlated with groundwater levels. The quality of this data must consider the specific aquifer being monitored and the methodology for collecting these levels.

The following considerations for groundwater level measuring protocols should ensure the following:

- Groundwater level data are taken from the correct location, well ID, and screen interval depth
- Groundwater level data are accurate and reproducible
- Groundwater level data represent conditions that inform appropriate basin management DQOs
- All salient information is recorded to correct, if necessary, and compare data
- Data are handled in a way that ensures data integrity

General Well Monitoring Information

The following presents considerations for collection of water level data that include regulatory required components as well as those which are recommended.

- Groundwater elevation data will form the basis of basin-wide water-table and piezometric maps, and should approximate conditions at a discrete period in time. Therefore, all groundwater levels in a basin should be collected within as short a time as possible, preferably within a 1 to 2 week period.
- Depth to groundwater must be measured relative to an established Reference Point (RP) on the well casing. The RP is usually identified with a permanent marker, paint spot, or a notch in the lip of the well casing. By convention in open casing monitoring wells, the RP reference point is located on the north side of the well casing. If no mark is apparent, the person performing the measurement should measure the depth to groundwater from the north side of the top of the well casing.
- The elevation of the RP of each well must be surveyed to the North American Vertical Datum of 1988 (NAVD88), or a local datum that can be converted to NAVD88. The elevation of the RP must be accurate to within 0.5 foot. It is preferable for the RP elevation to be accurate to 0.1 foot or less. Survey grade global navigation satellite system (GNSS) global positioning system (GPS) equipment can achieve similar vertical accuracy when corrected. Guidance for use of GPS can be found at USGS http://water.usgs.gov/osw/gps/. Hand-held GPS units likely will not produce reliable vertical elevation measurement accurate enough for the casing elevation consistent with the DQOs and regulatory requirements.
- The sampler should remove the appropriate cap, lid, or plug that covers the monitoring access point listening for pressure release. If a release is observed, the measurement should follow a period of time to allow the water level to equilibrate.
- Depth to groundwater must be measured to an accuracy of 0.1 foot below the RP. It is preferable to measure depth to groundwater to an accuracy of 0.01 foot. Air lines and acoustic sounders may not provide the required accuracy of 0.1 foot.
- The water level meter should be decontaminated after measuring each well.

Where existing wells do not meet the base standard as described in the GSP Regulations or the considerations provided above, new monitoring wells may need to be constructed to meet the DQOs of the GSP. The design, installation, and documentation of new monitoring wells must consider the following:

- Construction consistent with California Well Standards as described in Bulletins 74-81 and 74-90, and local permitting agency standards of practice.
- Logging of borehole cuttings under the supervision of a California Professional Geologist and described consistent with the Unified Soil Classification System methods according to ASTM standard D2487-11.
- Written criteria for logging of borehole cuttings for comparison to known geologic formations, principal aquifers and aquitards/aquicludes, or specific marker beds to aid in consistent stratigraphic correlation within and across basins.
- Geophysical surveys of boreholes to aid in consistency of logging practices. Methodologies should include resistivity, spontaneous potential, spectral gamma, or other methods as appropriate for the conditions. Selection of geophysical methods should be based upon the opinion of a professional geologist or professional engineer, and address the DQOs for the specific borehole and characterization needs.
- Prepare and submit State well completion reports according to the requirements of §13752. Well completion report documentation should include geophysical logs, detailed geologic log, and formation identification as attachments. An example well completion as-built log is illustrated in **Figure 2.** DWR well completion reports can be filed directly at the Online System for Well Completion Reports (OSWCR) http://water.ca.gov/oswcr/index.cfm.

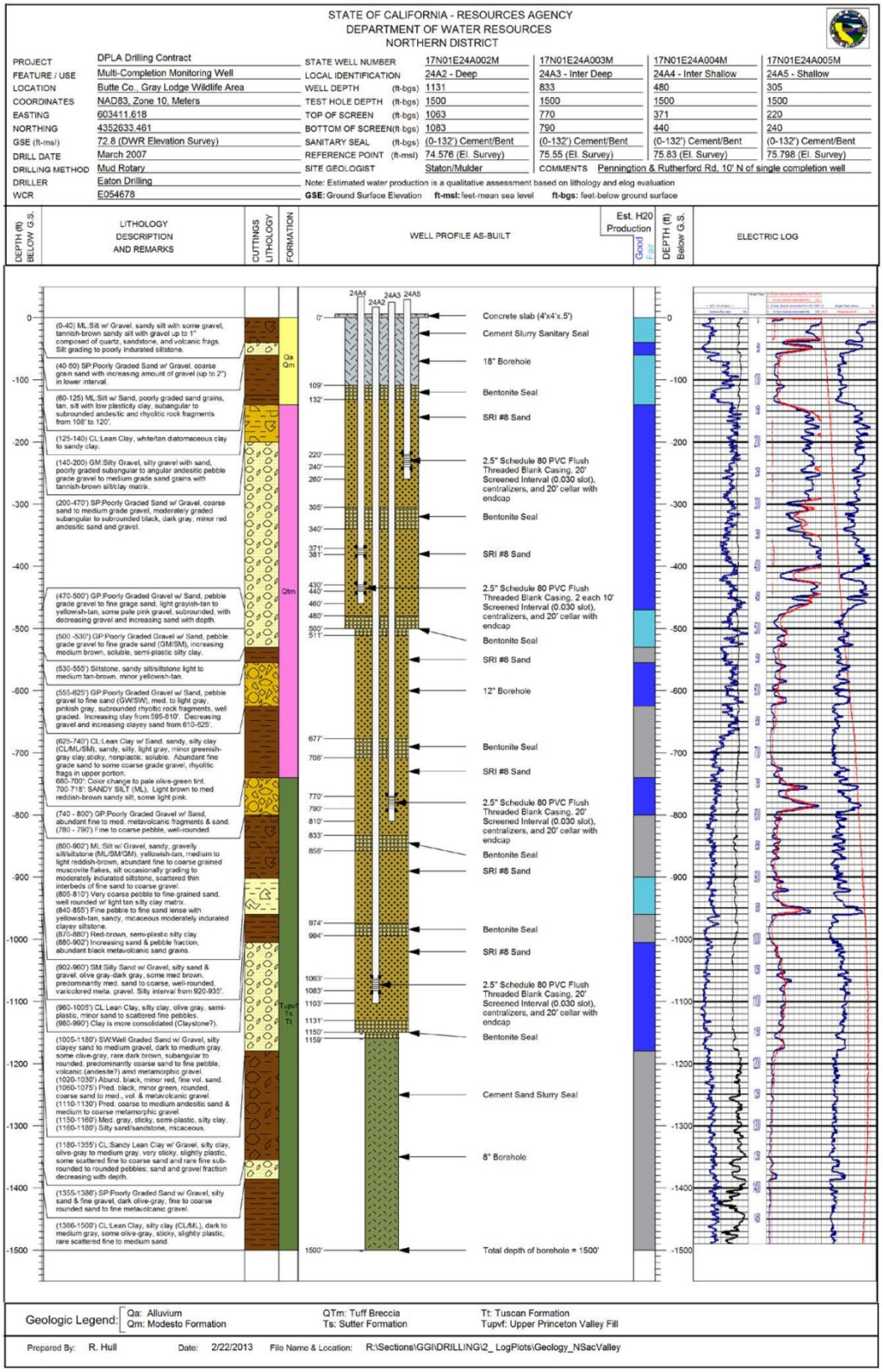


Figure 2 – Example As-Built Multi-Completion Monitoring Well Log

Measuring Groundwater Levels

Well construction, anticipated groundwater level, groundwater level measuring equipment, field conditions, and well operations should be considered prior collection of the groundwater level measurement. The USGS *Groundwater Technical Procedures* (Cunningham and Schalk, 2011) provide a thorough set of procedures which can be used to establish specific Standard Operating Procedures (SOPs) for a local agency. **Figure 3** illustrates a typical groundwater level measuring event and simultaneous pressure transducer download.

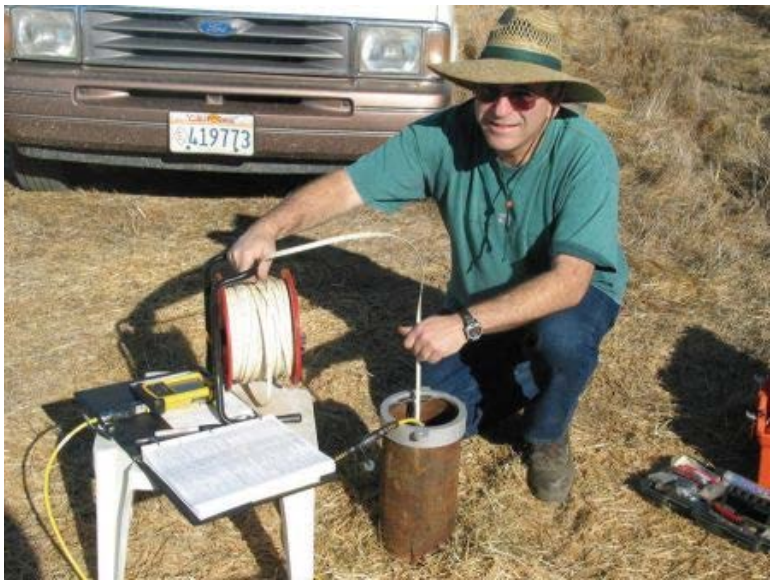


Figure 3 – Collection of Water Level Measurement and Pressure Transducer Download

The following points provide a general approach for collecting groundwater level measurements:

- Measure depth to water in the well using procedures appropriate for the measuring device. Equipment must be operated and maintained in accordance with manufacturer's instructions. Groundwater levels should be measured to the nearest 0.01 foot relative to the RP.
- For measuring wells that are under pressure, allow a period of time for the groundwater levels to stabilize. In these cases, multiple measurements should be collected to ensure the well has reached equilibrium such that no significant changes in water level are observed. Every effort should be made to ensure that a representative stable depth to groundwater is recorded. If a well does not stabilize, the quality of the value should be appropriately qualified as a

questionable measurement. In the event that a well is artesian, site specific procedures should be developed to collect accurate information and be protective of safety conditions associated with a pressurized well. In many cases, an extension pipe may be adequate to stabilize head in the well. Record the dimension of the extension and document measurements and configuration.

- The sampler should calculate the groundwater elevation as:

$$GWE = RPE - DTW$$

Where:

GWE = Groundwater Elevation
RPE = Reference Point Elevation
DTW = Depth to Water

The sampler must ensure that all measurements are in consistent units of feet, tenths of feet, and hundredths of feet. Measurements and RPEs should not be recorded in feet and inches.

Recording Groundwater Levels

- The sampler should record the well identifier, date, time (24-hour format), RPE, height of RP above or below ground surface, DTW, GWE, and comments regarding any factors that may influence the depth to water readings such as weather, nearby irrigation, flooding, potential for tidal influence, or well condition. If there is a questionable measurement or the measurement cannot be obtained, it should be noted. An example of a field sheet with the required information is shown in **Figure 4**. It includes questionable measurement and no measurement codes that should be noted. This field sheet is provided as an example. Standardized field forms should be used for all data collection. The aforementioned USGS *Groundwater Technical Procedures* offers a number of example forms.
- The sampler should replace any well caps or plugs, and lock any well buildings or covers.
- All data should be entered into the GSA data management system (DMS) as soon as possible. Care should be taken to avoid data entry mistakes and the entries should be checked by a second person for compliance with the DQOs.

STATE OF CALIFORNA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES

WELL DATA

STATE WELL NUMBER	COUNTY	REFERENCE POINT ELEV.	MEASURING AGENCY
			DWR

NO MEASUREMENT	QUESTIONABLE MEASUREMENT
0. Measurement discontinued	0. Caved or deepened
1. Pumping	1. Pumping
2. Pump house locked	2. Nearby pump operating
3. Tape hung up	3. Casing leaky or wet
4. Can't get tape in casing	4. Pumped recently
5. Unable to locate well	5. Air or pressure gauge measurement
6. Well has been destroyed	6. Other
7. Special	7. Recharge operation at or nearby well
8. Casing leaky or wet	8. Oil in casing
9. Temporarily inaccessible	

DATE	N M	Q M	TAPE AT RP	TAPE AT WS	RP to WS	OBSR VR	COMMENTS

DWR 1213

Figure 4 – Example of Water Level Well Data Field Collection Form

Pressure Transducers

Groundwater levels and/or calculated groundwater elevations may be recorded using pressure transducers equipped with data loggers installed in monitoring wells. When installing pressure transducers, care must be exercised to ensure that the data recorded by the transducers is confirmed with hand measurements.

The following general protocols must be followed when installing a pressure transducer in a monitoring well:

- The sampler must use an electronic sounder or chalked steel tape and follow the protocols listed above to measure the groundwater level and calculate the groundwater elevation in the monitoring well to properly program and reference the installation. It is recommended that transducers record measured groundwater level to conserve data capacity; groundwater elevations can be calculated at a later time after downloading.
- The sampler must note the well identifier, the associated transducer serial number, transducer range, transducer accuracy, and cable serial number.
- Transducers must be able to record groundwater levels with an accuracy of at least 0.1 foot. Professional judgment should be exercised to ensure that the data being collected is meeting the DQO and that the instrument is capable. Consideration of the battery life, data storage capacity, range of groundwater level fluctuations, and natural pressure drift of the transducers should be included in the evaluation.
- The sampler must note whether the pressure transducer uses a vented or non-vented cable for barometric compensation. Vented cables are preferred, but non-vented units provide accurate data if properly corrected for natural barometric pressure changes. This requires the consistent logging of barometric pressures to coincide with measurement intervals.
- Follow manufacturer specifications for installation, calibration, data logging intervals, battery life, correction procedure (if non-vented cables used), and anticipated life expectancy to assure that DQOs are being met for the GSP.
- Secure the cable to the well head with a well dock or another reliable method. Mark the cable at the elevation of the reference point with tape or an indelible marker. This will allow estimates of future cable slippage.
- The transducer data should periodically be checked against hand measured groundwater levels to monitor electronic drift or cable movement. This should happen during routine site visits, at least annually or as necessary to maintain data integrity.

- The data should be downloaded as necessary to ensure no data is lost and entered into the basin's DMS following the QA/QC program established for the GSP. Data collected with non-vented data logger cables should be corrected for atmospheric barometric pressure changes, as appropriate. After the sampler is confident that the transducer data have been safely downloaded and stored, the data should be deleted from the data logger to ensure that adequate data logger memory remains.

PROTOCOLS FOR SAMPLING GROUNDWATER QUALITY

The following protocols can be incorporated into a GSP's monitoring protocols for collecting groundwater quality data. More detailed sampling procedures and protocols are included in the standards and guidance documents listed at the end of this BMP. A GSP that adopts protocols that deviate from these BMPs must demonstrate that the adopted protocols will yield comparable data.

In general, the use of existing water quality data within the basin should be done to the greatest extent possible if it achieves the DQOs for the GSP. In some cases it may be necessary to collect additional water quality data to support monitoring programs or evaluate specific projects. The USGS *National Field Manual for the Collection of Water Quality Data* (Wilde, 2005) should be used to guide the collection of reliable data. **Figure 5** illustrates a typical groundwater quality sampling setup.



Figure 5 – Typical Groundwater Quality Sampling Event

All analyses should be performed by a laboratory certified under the State Environmental Laboratory Accreditation Program. The specific analytical methods are beyond the scope of this BMP, but should be commiserate with other programs evaluating water quality within the basin for comparative purposes.

Groundwater quality sampling protocols should ensure that:

- Groundwater quality data are taken from the correct location
- Groundwater quality data are accurate and reproducible
- Groundwater quality data represent conditions that inform appropriate basin management and are consistent with the DQOs
- All salient information is recorded to normalize, if necessary, and compare data
- Data are handled in a way that ensures data integrity

The following points are general guidance in addition to the techniques presented in the previously mentioned USGS *National Field Manual for the Collection of Water Quality Data.*

Standardized protocols include the following:

- Prior to sampling, the sampler must contact the laboratory to schedule laboratory time, obtain appropriate sample containers, and clarify any sample holding times or sample preservation requirements.
- Each well used for groundwater quality monitoring must have a unique identifier. This identifier must appear on the well housing or the well casing to avoid confusion.
- In the case of wells with dedicated pumps, samples should be collected at or near the wellhead. Samples should not be collected from storage tanks, at the end of long pipe runs, or after any water treatment.
- The sampler should clean the sampling port and/or sampling equipment and the sampling port and/or sampling equipment must be free of any contaminants. The sampler must decontaminate sampling equipment between sampling locations or wells to avoid cross-contamination between samples.
- The groundwater elevation in the well should be measured following appropriate protocols described above in the groundwater level measuring protocols.
- For any well not equipped with low-flow or passive sampling equipment, an adequate volume of water should be purged from the well to ensure that the groundwater sample is representative of ambient groundwater and not stagnant water in the well casing. Purging three well casing volumes is generally

considered adequate. Professional judgment should be used to determine the proper configuration of the sampling equipment with respect to well construction such that a representative ambient groundwater sample is collected. If pumping causes a well to be evacuated (go dry), document the condition and allow well to recover to within 90% of original level prior to sampling. Professional judgment should be exercised as to whether the sample will meet the DQOs and adjusted as necessary.

- Field parameters of pH, electrical conductivity, and temperature should be collected for each sample. Field parameters should be evaluated during the purging of the well and should stabilize prior to sampling. Measurements of pH should only be measured in the field, lab pH analysis are typically unachievable due to short hold times. Other parameters, such as oxidation-reduction potential (ORP), dissolved oxygen (DO) (in situ measurements preferable), or turbidity, may also be useful for meeting DQOs of GSP and assessing purge conditions. All field instruments should be calibrated daily and evaluated for drift throughout the day.
- Sample containers should be labeled prior to sample collection. The sample label must include: sample ID (often well ID), sample date and time, sample personnel, sample location, preservative used, and analytes and analytical method.
- Samples should be collected under laminar flow conditions. This may require reducing pumping rates prior to sample collection.
- Samples should be collected according to appropriate standards such as those listed in the *Standard Methods for the Examination of Water and Wastewater*, USGS *National Field Manual for the Collection of Water Quality Data,* or other appropriate guidance. The specific sample collection procedure should reflect the type of analysis to be performed and DQOs.
- All samples requiring preservation must be preserved as soon as practically possible, ideally at the time of sample collection. Ensure that samples are appropriately filtered as recommended for the specific analyte. Entrained solids can be dissolved by preservative leading to inconsistent results of dissolve analytes. Specifically, samples to be analyzed for metals should be field-filtered prior to preservation; do not collect an unfiltered sample in a preserved container.
- Samples should be chilled and maintained at 4 °C to prevent degradation of the sample. The laboratory's Quality Assurance Management Plan should detail appropriate chilling and shipping requirements.

- Samples must be shipped under chain of custody documentation to the appropriate laboratory promptly to avoid violating holding time restrictions.
- Instruct the laboratory to use reporting limits that are equal to or less than the applicable DQOs or regional water quality objectives/screening levels.

Special protocols for low-flow sampling equipment

In addition to the protocols listed above, sampling using low-flow sample equipment should adopt the following protocols derived from EPA's *Low-flow (minimal drawdown) ground-water sampling procedures* (Puls and Barcelona, 1996). These protocols apply to low-flow sampling equipment that generally pumps between 0.1 and 0.5 liters per minute. These protocols are not intended for bailers.

Special protocols for passive sampling equipment

In addition to the protocols listed above, passive diffusion samplers should follow protocols set forth in USGS Fact Sheet 088-00.

PROTOCOLS FOR MONITORING SEAWATER INTRUSION

Monitoring seawater intrusion requires analysis of the chloride concentrations within groundwater of each principal aquifer subject to seawater intrusion. While no significant standardized approach exists, the methodologies described above for degraded water quality can be applied for the collection of groundwater samples. In addition to the protocol described above, the following protocols should be followed:

- Water quality samples should be collected and analyzed at least semi-annually. Samples will be analyzed for dissolved chloride at a minimum. It may be beneficial to include analyses of iodide and bromide to aid in determination of salinity source. More frequent sampling may be necessary to meet DQOs of GSP. The development of surrogate measures of chloride concentration may facilitate cost-effective means to monitor more frequently to observe the range of conditions and variability of the flow dynamics controlling seawater intrusion.
- Groundwater levels will be collected at a frequency adequate to characterize changes in head in the vicinity of the leading edge of degraded water quality in each principal aquifer. Frequency may need to be increased in areas of known preferential pathways, groundwater pumping, or efficacy evaluation of mitigation projects.
- The use of geophysical surveys, electrical resistivity, or other methods may provide for identification of preferential pathways and optimize monitoring well placement and evaluation of the seawater intrusion front. Professional judgment

should be exercised to determine the appropriate methodology and whether the DQOs for the GSP would be met.

PROTOCOLS FOR MEASURING STREAMFLOW

Monitoring of streamflow is necessary for incorporation into water budget analysis and for use in evaluation of stream depletions associated with groundwater extractions. The use of existing monitoring locations should be incorporated to the greatest extent possible. Many of these streamflow monitoring locations currently follow the protocol described below.

Establishment of new streamflow discharge sites should consider the existing network and the objectives of the new location. Professional judgment should be used to determine the appropriate permitting that may be necessary for the installation of any monitoring locations along surface water bodies. Regular frequent access will be necessary to these sites for the development of ratings curves and maintenance of equipment.

To establish a new streamflow monitoring station special consideration must be made in the field to select an appropriate location for measuring discharge. Once a site is selected, development of a relationship of stream stage to discharge will be necessary to provide continuous estimates of streamflow. Several measurements of discharge at a variety of stream stages will be necessary to develop the ratings curve correlating stage to discharge. The use of Acoustic Doppler Current Profilers (ADCPs) can provide accurate estimates of discharge in the correct settings. Professional judgment must be exercised to determine the appropriate methodology. Following development of the ratings curve a simple stilling well and pressure transducer with data logger can be used to evaluate stage on a frequent basis. A simple stilling well and staff gage is illustrated in **Figure 6**.

Streamflow measurements should be collected, analyzed, and reported in accordance with the procedures outlined in USGS Water Supply Paper 2175, *Volume 1. – Measurement of Stage Discharge* and *Volume 2. – Computation of Discharge.* This methodology is currently being used by both the USGS and DWR for existing streamflow monitoring throughout the State.



Figure 6 – Simple Stilling Well and Staff Gage Setup

PROTOCOLS FOR MEASURING SUBSIDENCE

Evaluating and monitoring inelastic land subsidence can utilize multiple data sources to evaluate the specific conditions and associated causes. To the extent possible, the use of existing data should be utilized. Subsidence can be estimated from numerous techniques, they include: level surveying tied to known stable benchmarks or benchmarks located outside the area being studied for possible subsidence; installing and tracking changes in borehole extensometers; obtaining data from continuous GPS (CGPS) locations, static GPS surveys or Real-Time-Kinematic (RTK) surveys; or analyzing Interferometric Synthetic Aperture Radar (InSAR) data. No standard procedures exist for collecting data from the potential subsidence monitoring approaches. However, an approach may include:

- Identification of land subsidence conditions.
    - Evaluate existing regional long-term leveling surveys of regional infrastructure, i.e. roadways, railroads, canals, and levees.
    - Inspect existing county and State well records where collapse has been noted for well repairs or replacement.
    - Determine if significant fine-grained layers are present such that the potential for collapse of the units could occur should there be significant depressurization of the aquifer system.

    - Inspect geologic logs and the hydrogeologic conceptual model to aid in identification of specific units of concern.
    - Collect regional remote-sensing information such as InSAR, commonly provided by USGS and NASA. Data availability is currently limited, but future resources are being developed.
- Monitor regions of suspected subsidence where potential exists.
    - Establish CGPS network to evaluate changes in land surface elevation.
    - Establish leveling surveys transects to observe changes in land surface elevation.
    - Establish extensometer network to observe land subsidence. An example of a typical extensometer design is illustrated in **Figure 7**. There are a variety of extensometer designs and they should be selected based on the specific DQOs.

Various standards and guidance documents for collecting data include:

- Leveling surveys must follow surveying standards set out in the California Department of Transportation's Caltrans Surveys Manual.
- GPS surveys must follow surveying standards set out in the California Department of Transportation's Caltrans Surveys Manual.
- USGS has been performing subsidence surveys within several areas of California. These studies are sound examples for appropriate methods and should be utilized to the extent possible and where available:
    - http://ca.water.usgs.gov/land_subsidence/california-subsidence-measuring.html
- Instruments installed in borehole extensometers must follow the manufacturer's instructions for installation, care, and calibration.
- Availability of InSAR data is improving and will increase as programs are developed. This method requires expertise in analysis of the raw data and will likely be made available as an interpretative report for specific regions.

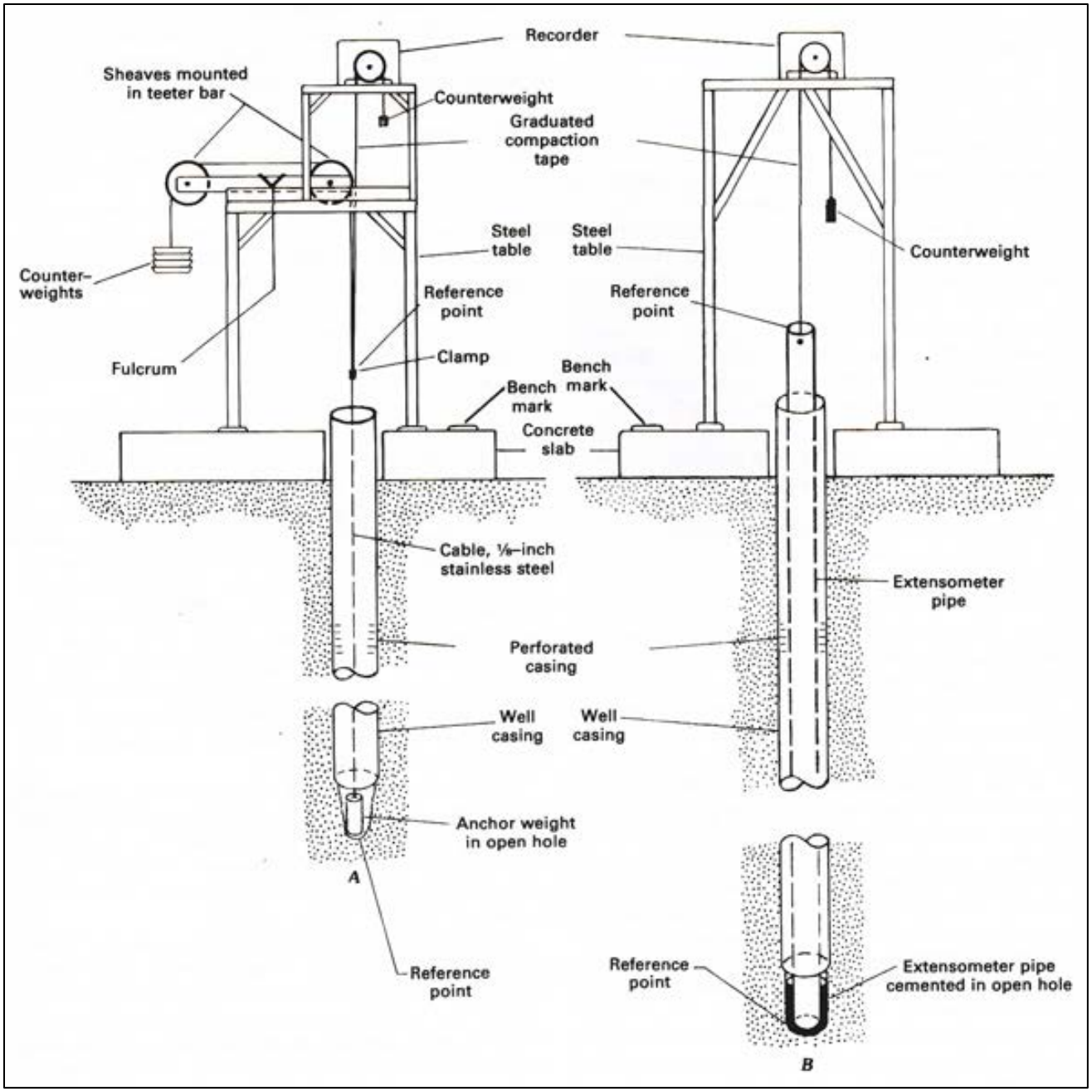


Figure 7 – Simplified Extensometer Diagram

6. KEY DEFINITIONS

The key definitions and sections related to Groundwater Monitoring Protocols, Standards, and Sites outlined in applicable SGMA code and regulations are provided below for reference.

Groundwater Sustainability Plan Regulations (California Code of Regulations §351)

- §351(h) "Best available science" refers to the use of sufficient and credible information and data, specific to the decision being made and the time frame available for making that decision, that is consistent with scientific and engineering professional standards of practice.
- §351(i) "Best management practice" refers to a practice, or combination of practices, that are designed to achieve sustainable groundwater management and have been determined to be technologically and economically effective, practicable, and based on best available science.

Monitoring Protocols Reference

§352.2. Monitoring Protocols

Each Plan shall include monitoring protocols adopted by the Agency for data collection and management, as follows:

(a) Monitoring protocols shall be developed according to best management practices.

(b) The Agency may rely on monitoring protocols included as part of the best management practices developed by the Department, or may adopt similar monitoring protocols that will yield comparable data.

(c) Monitoring protocols shall be reviewed at least every five years as part of the periodic evaluation of the Plan, and modified as necessary.

SGMA Reference

§10727.2. Required Plan Elements

(f) Monitoring protocols that are designed to detect changes in groundwater levels, groundwater quality, inelastic surface subsidence for basins for which subsidence has been identified as a potential problem, and flow and quality of surface water that directly affect groundwater levels or quality or are caused by groundwater extraction in the basin. The monitoring protocols shall be designed to generate information that promotes efficient and effective groundwater management.

7. RELATED MATERIALS

CASE STUDIES

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California Statewide Groundwater Elevation Monitoring (CASGEM) Program

Procedures for Monitoring Entity Reporting

December 2010

Department of Water Resources (DWR) will use the internet as the primary communication tool to notify interested parties and groundwater Monitoring Entities of the status of the CASGEM program on an ongoing basis. Information will be posted at the following website: http://www.water.ca.gov/groundwater/casgem

In addition to the above-referenced website, DWR will distribute information via email. In order to be placed on the CASGEM contact list, please register your contact information at the following website: http://www.water.ca.gov/groundwater/casgem/register/

For questions about the Reporting Procedures, or other technical issues, please contact:

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mscruggs@water.ca.gov

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INTRODUCTION TO CASGEM PROGRAM

In November 2009 Part 2.11 (Groundwater Monitoring) was added to Division 6 of the Water Code by Senate Bill 6 (7th Extraordinary Session) (SB 6), a copy of which is included in the Appendix. (All statutory references in this document are to the Water Code.) The new law directs that groundwater elevations in all basins and subbasins in California be regularly and systematically monitored, preferably by local entities, with the goal of demonstrating seasonal and long-term trends in groundwater elevations. The Department of Water Resources (DWR) is directed to make the resulting information readily and widely available.

DWR developed the California Statewide Groundwater Elevation Monitoring (CASGEM) program in accordance with SB 6 to establish a permanent, locally-managed system to monitor groundwater elevation in California's alluvial groundwater basins and subbasins identified in DWR Bulletin 118. The CASGEM program will rely and build on the many, established local long-term groundwater monitoring and management programs. DWR's role is to coordinate information collected locally through the CASGEM program and to maintain the collected groundwater elevation data in a readily and widely available public database. DWR will also continue measuring its current network of groundwater monitoring wells as funding allows.

The goals of the CASGEM program are to:

- Establish procedures for notification and data reporting by prospective Monitoring Entities (this document)
- Verify local Monitoring Entities in accordance with the Water Code
- Develop an interface for local entities to enter data into a database compatible with DWR's Water Data Library
- Maintain the database and make it easily accessible to the public and local entities for use in water supply planning and management

If no local entities volunteer to monitor groundwater elevations in a basin or part of a basin, DWR may be required to develop a monitoring program for that part. If DWR takes over monitoring of a basin, certain entities in the basin may not be eligible for water grants or loans administered by the state.

During August and September 2010, DWR held 10 workshops throughout the state in cooperation with Association of California Water Agencies (ACWA) to introduce the CASGEM program and explain the purpose and process of the program to local agencies and stakeholders. A copy of the DWR presentation is available on the CASGEM website (http://www.water.ca.gov/groundwater/casgem). A summary of

Frequently Asked Questions (FAQs), primarily from the workshops, is provided in on the CASGEM website.

DWR's main role is to administer the CASGEM program through providing public outreach; creating and maintaining the CASGEM website and online data submittal system; and, supporting local entities through the process of becoming a Monitoring Entity and preparing Monitoring Plans. DWR will use the CASGEM website to provide up-to-date information on the program. The website will also be the access point for the online notification and data submittal systems.

Staff from the DWR regional offices will be available to assist potential Monitoring Entities with the online notification submittal process. After receiving notification from prospective Monitoring Entities, DWR will review them for completeness, verify the authority of the applying entity under Section 10927, and check for overlapping monitoring areas. DWR will advise each party on the status of their notification within three months of submittal and will work with entities to address any deficiencies in their submittals.

DWR encourages local agencies and groups to collaborate to determine who will serve as the Monitoring Entity for the area. However, if more than one party seeks to become the Monitoring Entity for the same area and overlapping monitoring area issues cannot be resolved locally, DWR will make a final determination of the Monitoring Entity for the area. DWR's determinations will consider the order in which entities are identified in Section 10927 and other factors as described in the Water Code.

DWR will post the selection of each Monitoring Entity and its monitoring area on the CASGEM website and will notify each Monitoring Entity in writing. A map-based interface will be available for users to identify the Monitoring Entity for each basin in the state.

DWR will prepare the first status report on the CASGEM program for the Governor and Legislature by January 1, 2012. In this initial report, DWR will report on the extent of groundwater elevation monitoring within each basin. This report will include a statewide prioritization of basins based on water supply, water demand, and other factors identified in Section 10933. DWR will explore options for basins without identified monitoring, with a focus on identifying options for local monitoring. Future status reports on the CASGEM program will be prepared by DWR in years ending in 5 or 0.

PURPOSE OF MONITORING ENTITY REPORTING PROCEDURES

The purpose of these procedures is to introduce the CASGEM program and its components as the framework for implementing SB 6, with particular emphasis on the initial step of establishing Monitoring Entities for each Bulletin 118 basin in the state.

A summary of the requirements of local entities to comply with the CASGEM program is presented in Table 1.

Table 1. Quick Guide for Local Entities

- Determine whether you qualify as a potential Monitoring Entity (see "Requirements to become Monitoring Entity" on pages 9-13)
- Identify the basins within your area (see Bulletin 118)
- Collaborate with other local entities to identify and choose the prospective Monitoring Entity (or Entities) for your area
- Submit Monitoring Entity notification to DWR through CASGEM website (http://www.water.ca.gov/groundwater/casgem) on or before January 1, 2011
- DWR will review the notification and advise the prospective Monitoring Entity of the status of the notification within 3 months of submittal
- Work with staff of the DWR regional office to address any deficiencies in the submittal
- If more than one party seeks to become the Monitoring Entity for the same area, work with staff of the DWR regional office to resolve
- Check the CASGEM website for a listing of the selected Monitoring Entities
- Develop and submit a Monitoring Plan to DWR through the CASGEM website
- Staff from the DWR regional office are available to assist with the Monitoring Plan and to recommend changes
- Submit monitoring data to DWR through the CASGEM website on or before January 1, 2012

CASGEM SCHEDULE



A timetable for implementing the CASGEM schedule is shown above.

MONITORING ENTITIES

The CASGEM program establishes the framework for collaboration between local monitoring parties and DWR to collect groundwater elevation data throughout the state's 515 basins as defined in Bulletin 118. A Monitoring Entity is a local agency or group that voluntarily takes responsibility for conducting or coordinating groundwater elevation monitoring and reporting for all or part of a groundwater basin.

To determine if you are within a Bulletin 118 basin, please refer to maps and descriptions in Bulletin 118, available online at: http://www.water.ca.gov/groundwater/bulletin118/gwbasin_maps_descriptions.cfm. Geographic Information System (GIS) shapefiles of the basins are also available at this website. DWR can assist in identifying other potential local monitoring parties in each basin.

ROLES AND RESPONSIBILITIES OF MONITORING ENTITIES

Through the CASGEM program, local entities with appropriate authority may notify DWR of their intent to be a Monitoring Entity. Monitoring Entities will have specific responsibilities, including:

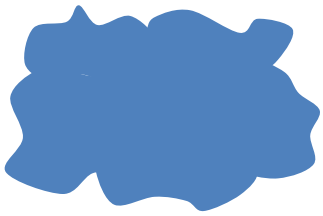
- Coordinate with DWR to establish a Monitoring Plan
- Conduct or coordinate the regular and systematic monitoring of groundwater elevations as specified in the Monitoring Plan
- Submit monitoring data to DWR in a timely manner

A Monitoring Entity can perform monitoring for any number of basins or portions thereof, but no area can have more than one Monitoring Entity. While the Monitoring Entity is responsible for compiling the data and submitting it to DWR for a particular area, the actual measurements can be taken by any number of agencies that would work under the direction of the Monitoring Entity. (Cooperating agencies would submit data to the Monitoring Entity, not to DWR.) Thus, assuming there are no overlapping areas or gaps in basin coverage for a given area, there are three possible basic scenarios, illustrated in Figure 1:

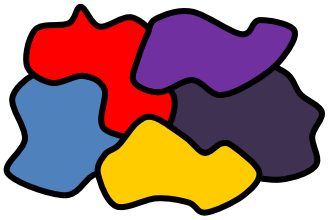
- A single Monitoring Entity that collects and reports groundwater elevation data for the entire basin (Scenario A);
- Multiple Monitoring Entities that collect and report groundwater elevation data for their portion of the basin (Scenario B); or

- An umbrella Monitoring Entity that coordinates and reports groundwater elevation data collected by multiple agencies within the basin (Scenario C).

Scenario A. One Monitoring Entity collects and reports data for entire basin



Scenario B. One basin, several Monitoring Entities collecting and submitting data



Scenario C. One basin, one Monitoring Entity coordinating and submitting data collected by several agencies

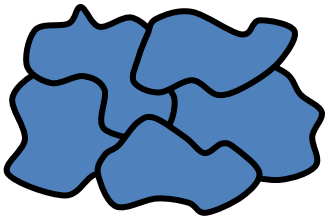


Figure 1. Illustration of possible Monitoring Entity scenarios for a monitored basin.

DWR currently monitors water elevations in about 4,000 wells statewide and cooperates with local and federal agencies to monitor roughly an additional 6,000 wells. DWR plans to continue monitoring groundwater elevations, contingent upon available funding. In some basins DWR currently does most, if not all, of the water-elevation monitoring. In these basins, a local entity still needs to notify DWR of their intent to become the Monitoring Entity. The Monitoring Entity must determine which DWR wells will be included in their CASGEM monitoring network. As long as DWR continues its monitoring program, the department will transmit its groundwater elevation data to the CASGEM system. However, if DWR is unable to continue monitoring for any reason, the Monitoring Entity will be required to re-evaluate its monitoring network to determine which wells to retain in its monitoring network.

REQUIREMENTS TO BECOME MONITORING ENTITY

Section 10927 of the Water Code defines the types of entities that may assume responsibility for monitoring and reporting groundwater elevations as part of the CASGEM program.

A summary list of eligible entities, in order of priority, and notification requirements for each entity is provided below:

1. A **watermaster or water management engineer** appointed by a court or pursuant to statute to administer a final judgment determining rights to groundwater [Section 10927(a)].
   Notification Requirements:
   - Name of Agency
   - Agency Contact Name
   - Address
   - Telephone Number
   - Email Address
   - Any other relevant contact information
   - Authority (as listed in Section 10927)
   - Name and number of basin to be monitored (from Bulletin 118)
   - Map and shapefile showing area to be monitored (Shapefiles do not need to be submitted by the initial January 1, 2011 notification date; Regional Offices can provide assistance to potential Monitoring Entities with shapefiles.)
   - Statement that the entity will comply with the requirements of Water Code Part 2.11
   - Additional information deemed necessary by DWR to identify monitoring area or qualifications of the Monitoring Entity

2. A **groundwater management agency** with statutory authority to manage groundwater pursuant to its principal act that is monitoring groundwater elevations in all or a part of a groundwater basin on or before January 1, 2010 [Section 10927(b)(1)].
   Notification Requirements:
   - Name of Agency
   - Agency Contact Name
   - Address
   - Telephone Number
   - Email Address
   - Any other relevant contact information
   - Authority (as listed in Section 10927)

- Name and number of basin to be monitored (from Bulletin 118)
- Map and shapefile showing area to be monitored (Shapefiles do not need to be submitted by the initial January 1, 2011 notification date; Regional Offices can provide assistance to potential Monitoring Entities with shapefiles.)
- Statement that the entity will comply with the requirements of Water Code Part 2.11
- Additional information deemed necessary by DWR to identify monitoring area or qualifications of the Monitoring Entity

3. A **water replenishment district** established pursuant to Water Code Division 18 (commencing with Section 60000). This part does not expand or otherwise affect the authority of a water replenishment district relating to monitoring elevations [Section 10927(b)(2)].

   Notification Requirements:
   - Name of Agency
   - Agency Contact Name
   - Address
   - Telephone Number
   - Email Address
   - Any other relevant contact information
   - Authority (as listed in Section 10927)
   - Name and number of basin to be monitored (from Bulletin 118)
   - Map and shapefile showing area to be monitored (Shapefiles do not need to be submitted by the initial January 1, 2011 notification date; Regional Offices can provide assistance to potential Monitoring Entities with shapefiles.)
   - Statement that the entity will comply with the requirements of Water Code Part 2.11
   - Additional information deemed necessary by DWR to identify monitoring area or qualifications of the Monitoring Entity

4. A **local agency that is managing all or part of a groundwater basin pursuant to Water Code Part 2.75** (commencing with Section 10750) and that was monitoring groundwater elevations in all or part of a groundwater basin on or before January 1, 2010, or a local agency or county that is managing all or part of a groundwater basin pursuant to any other legally enforceable groundwater management plan with provisions that are substantively similar to those described in that part and that was monitoring groundwater elevations in all or a part of a groundwater basin on or before January 1, 2010 [Section 10927(c)].

Notification Requirements:

- Name of Agency
- Agency Contact Name
- Address
- Telephone Number
- Email Address
- Any other relevant contact information
- Authority (as listed in Section 10927)
- Name and number of basin to be monitored (from Bulletin 118)
- Map and shapefile showing area to be monitored (Shapefiles do not need to be submitted by the initial January 1, 2011 notification date; Regional Offices can provide assistance to potential Monitoring Entities with shapefiles.)
- Statement that the entity will comply with the requirements of Water Code Part 2.11
- Copy of current groundwater management plan
- Statement describing the ability or qualifications of the entity to conduct the groundwater monitoring functions required
- Additional information deemed necessary by DWR to identify monitoring area or qualifications of the Monitoring Entity

5. A **local agency that is managing all or part of a groundwater basin pursuant to an integrated regional water management plan** prepared pursuant to Water Code Part 2.2 (commencing with Section 10530) that includes a groundwater management component that complies with the requirements of Section 10753.7 [Section 10927(d)].

   Notification Requirements:

   - Name of Agency
   - Agency Contact Name
   - Address
   - Telephone Number
   - Email Address
   - Any other relevant contact information
   - Authority (as listed in Section 10927)
   - Name and number of basin to be monitored (from Bulletin 118)
   - Map and shapefile showing area to be monitored (Shapefiles do not need to be submitted by the initial January 1, 2011 notification date; Regional Offices can provide assistance to potential Monitoring Entities with shapefiles.)
   - Statement that the entity will comply with the requirements of Water Code Part 2.11
   - Copy of current groundwater component of integrated regional water management plan
   - Statement describing the ability or qualifications of the entity to conduct the groundwater monitoring functions required

- Additional information deemed necessary by DWR to identify monitoring area or qualifications of the Monitoring Entity

6. A **county** that is not managing all or a part of a groundwater basin pursuant to a legally enforceable groundwater management plan with provisions that are substantively similar to those described in Water Code Part 2.75 (commencing with Section 10750) [Section 10927(e)].
   Notification Requirements:
   - Name of County
   - County Contact Name
   - Address
   - Telephone Number
   - Email Address
   - Any other relevant contact information
   - Authority (as listed in Section 10927)
   - Name and number of basin to be monitored (from Bulletin 118)
   - Map and shapefile showing area to be monitored (Shapefiles do not need to be submitted by the initial January 1, 2011 notification date; Regional Offices can provide assistance to potential Monitoring Entities with shapefiles.)
   - Statement that the entity will comply with the requirements of Water Code Part 2.11
   - Statement describing the ability or qualifications of the entity to conduct the groundwater monitoring functions required
   - Additional information deemed necessary by DWR to identify monitoring area or qualifications of the Monitoring Entity

7. A **voluntary cooperative groundwater monitoring association** formed pursuant to Section 10935 [Section 10927(f)]. As described in the Water Code Section 10935, the voluntary associations may be established by contract, a joint powers agreement, a memorandum of agreement, or other form of agreement deemed acceptable by DWR, so long as it contains: the names of the participants; the boundaries of the area covered by the agreement; the name or names of the parties responsible for meeting the requirements; the method of recovering the costs associated with meeting the requirements; and other provisions that may be required by DWR. Entities seeking to form a voluntary association should notify DWR, which will work cooperatively with the interested parties to facilitate the formation of the association.

Notification Requirements:

- Name of Association
- Association Contact Name
- Address
- Telephone Number
- Email Address
- Any other relevant contact information
- Authority (as listed in Section 10927)
- Name and number of basin to be monitored (from Bulletin 118)
- Map and shapefile showing area to be monitored (Shapefiles do not need to be submitted by the initial January 1, 2011 notification date; Regional Offices can provide assistance to potential Monitoring Entities with shapefiles.)
- Statement that the entity will comply with the requirements of Water Code Part 2.11
- Statement describing the ability or qualifications of the entity to conduct the groundwater monitoring functions required
- Statement of intent to meet the association formation requirements described in Section 10935
- Additional information deemed necessary by DWR to identify monitoring area or qualifications of the Monitoring Entity

Local agencies are encouraged to coordinate among themselves to determine the proposed Monitoring Entity or Entities that best suits their area. The resulting interested entity (or entities) should notify DWR of its intent to become a groundwater Monitoring Entity for one or more basins, or portions thereof by the January 1, 2011 deadline. Certain basic information is required for notification, including contact information and additional details depending on the authority of the entity desiring to monitor groundwater (Section 10928), as listed above. This notification information will be submitted to DWR using an online system that will be available by mid-December 2010.

MONITORING PLANS

Monitoring Entities will each develop a Monitoring Plan that includes the following sections: Monitoring Sites and Timing, Field Methods, and Data Reporting. Monitoring Plans should be completed and submitted to DWR by summer 2011. Staff from the DWR regional offices will be available to assist Monitoring Entities with the development of Monitoring Plans, if needed. In determining what information should be reported to DWR, the department will defer to existing monitoring programs if those programs result in information that demonstrates seasonal (annual high and low groundwater elevations) and long-term trends in groundwater elevations. Staff from the DWR regional offices will assist Monitoring Entities to address any gaps in basin coverage

(see below) and other monitoring issues and may make recommendations for the location of additional wells. However, the department has no authority to require a Monitoring Entity to install additional wells unless funds are provided for that purpose. Once a Monitoring Plan is established with DWR, Monitoring Entities should notify DWR of any changes to the plan.

Key Components of Monitoring Plans

Submit to DWR by summer 2011

- Monitoring Sites and Timing
  - Well Network Design
  - Selected wells (current)
  - Planned (future) wells
  - Frequency to capture seasonal highs and lows
  - Map and shapefile of monitoring area and well locations

Field Methods for groundwater monitoring

- Methods for measuring
  - Reference Point
  - Static water level
  - Depth to water
  - Standardized form for data collection

Data Reporting

- Online data submittal, minimum July & January each year

Data Gaps

A data gap refers to a basin or portion of a basin that is not included in any of the Monitoring Plans submitted to DWR. This is essentially an area that lacks the density of monitoring wells that would allow seasonal and long-term trends in groundwater elevations to be determined for the basin, subbasin, or a portion thereof. Among the 515 basins defined by Bulletin 118, data gaps may exist for a variety of reasons, including a lack of suitable monitoring wells, lack of groundwater use, access issues, and jurisdictional issues, among others.

If no local entity is able and/or willing to fill a data gap, the department may be required to perform groundwater monitoring functions. If DWR performs this monitoring, local agencies and the county that have the authority under Section 10927 to monitor the area of the data gap would be potentially ineligible for a water grant or loan awarded or administered by the state. The Monitoring Entity or entities with the authority to monitor the area of the data gap should provide detailed information regarding the nature of and reason for the data gap so that DWR may include such information in the prioritization of groundwater basins and subbasins as appropriate.

Agencies and counties that are eligible to be designated Monitoring Entities but choose not participate in the CASGEM program will not lose their state water grant and loan eligibility if their entire service area qualifies as a disadvantaged community (Water Code Section 10933.7(b)). It will be the responsibility of the local agency or county applying for a state water grant or loan to demonstrate their disadvantaged community status at the time they are applying for the grant or loan.

MONITORING SITES AND TIMING

The Monitoring Plan will identify the wells to be monitored and the frequency with which they will be monitored. The Monitoring Plan should explain how proposed monitoring will be sufficient to demonstrate the seasonal and long-term groundwater elevation trends in the monitored area. The density of monitoring locations will depend on the complexity of the basin.

Because of security concerns, the California Department of Public Health (DPH) routinely limits the disclosure of detailed public water supply well location information. Pursuant to Water Code Section 10931, the DWR is required to collaborate with DPH to ensure that the information reported to the CASGEM program will not result in the inappropriate disclosure of information of concern to DPH. At this time, DWR has reached no agreement with DPH regarding the appropriate treatment of public water supply well data. As a result, CASGEM does not currently plan to use such well information in its database.

The Monitoring Plan should contain a table identifying the wells to be monitored and the timing of that monitoring. Because the law specifies that information should demonstrate seasonal and long-term trends in groundwater elevations, at a minimum monitoring should be conducted at each location for the yearly high and low for the basin. The yearly high and low groundwater elevations typically occur in spring and fall, but this may vary from basin to basin. It is very important that the timing of all the measurements in the basin is coordinated. Rationale for selection of the timing (seasonal highs and lows) should be included in the Monitoring Plan.

The information on the monitoring sites and timing to be submitted in the online system should include:

- Well identification number
- State well number
- Location (decimal latitude and longitude, North American Datum (NAD) 83)
- Reference point elevation (feet, North American Vertical Datum (NAVD) 88)
- Land surface datum (feet, NAVD88)
- Map and shapefile with monitoring locations, Bulletin 118 groundwater basin boundary, and boundary of monitoring area
- Frequency and timing of measurements

FIELD METHODS

The consistent and documented collection of groundwater elevation data is important for ensuring that the data can be used across the state, regardless of the Monitoring Entity. The field methods should meet a common set of basic requirements; however, the methods do not have to be exactly the same. Many entities already have in place monitoring efforts that are successful in meeting local needs and that can meet the needs for this program, either as-is or with the incorporation of individual components. The CASGEM program wishes to maintain, to the greatest extent possible, the procedures of high-quality local groundwater elevation monitoring programs, so long as they meet the overall program goals and policies. Of particular concern are the following basic requirements:

- Method(s) to establish the Reference Point, including step-by-step instructions
- Method(s) to ensure static groundwater elevation
- Method(s) to measure depth to water, including step-by-step instructions
- Method(s) and form(s) for recording measurements

It is the responsibility of each Monitoring Entity to develop and implement monitoring protocols that are appropriate to local groundwater basin conditions, protect the water quality of its monitoring wells, and maintain the quality of the data that it submits to the CASGEM Program. DWR has developed field guidelines (Department of Water Resources Groundwater Elevation Monitoring Guidelines) based on a review of existing field methods from DWR and other organizations, which is available on the CASGEM website. Monitoring Entities are welcome to refer to these guidelines when developing field methods for their own Monitoring Plans. However, the DWR guidelines are for internal use in the event that the Department is required to perform groundwater monitoring functions pursuant to Section 10933.5 and are not binding on any other agency. The core of the CASGEM program will rely and build on the many, established local long-term groundwater monitoring and management programs. The department will defer to existing monitoring programs that result in information that demonstrates seasonal and long-term trends in groundwater elevations.

DATA REPORTING

DWR will develop an online data submittal system for Monitoring Entities to submit their groundwater elevation data. Several methods of submitting data will be available, such as direct online data entry, or upload of data files for batch entry. Initial groundwater elevation data should be submitted to DWR by January 1, 2012. Thereafter, data

should be submitted as soon as possible after collection, but no later than January 1st and July 1st of each year, at the minimum. Historical data can also be submitted via the DWR data system to aid in data interpretation. All submitted data will be available to the public, except for confidential data.

Each groundwater elevation data measurement submitted to the online system should include:

- Well identification number
- Measurement date
- Reference point and land surface elevation
- Depth to water
- Method of measuring water depth
- Measurement quality codes

The Monitoring Entity information, well information, and groundwater elevation information is to be provided by the Monitoring Entity. Items labeled as required must be submitted to DWR to report groundwater elevations. Items labeled as recommended should be submitted to DWR if they are available, as they assist in fully evaluating the quality of measurements. DWR will provide standard form(s) for Monitoring Entities to submit groundwater elevation data online. However, if Monitoring Entities cannot use the standard form(s) or provide the data elements listed below, DWR will work cooperatively with Monitoring Entities to develop alternate methods of submitting data.

Entity Information

All entities assuming groundwater monitoring functions as delineated in Section 10927 (a)-(f) are required to submit the following information:

- Monitoring Entity's name, address, telephone number, contact person name and email address, and any other relevant contact information (Section 10928 (a) (1), 10928 (b) (1))
- Name, address, telephone number, email address and any other relevant contact information for entities collecting data that is submitted by a designated submitting entity (Monitoring Entity)
- Groundwater basins being monitored
    - Identify entire basins monitored
    - Identify partial basins monitored

Well Information

The following information about each well is required for the CASGEM online system:

- Unique well identification number. Agencies may use an existing State Well Number, an existing local well designation, or develop their own identification name, using the following protocol:
    - Agency name, abbreviation, or acronym followed by a sequential number (e.g., SGA 01)
    - Groundwater basin – followed by a sequential number (e.g., Llagas 03)
    - Geographic name – followed by a sequential number (e.g., Yolo 12)
    - Well names should be 15 characters long or less
    - Avoid using owner/business names or specific locational information for privacy and security
- Decimal latitude/longitude coordinates of well, using horizontal datum NAD83, and the method of determining coordinates (Actual coordinates are preferred; however, Monitoring Entities may submit approximate locations, as needed, to protect the privacy of well owners. For example, to protect the privacy of a well owner, a Monitoring Entity may submit well coordinate locations that are only within 1000-feet of the actual well location.)
- Groundwater basin or sub-basin
- Reference point elevation of the well (feet) using NAVD88 vertical datum
- Elevation of land surface datum at the well (feet) using NAVD88 vertical datum
- Use of well (e.g., dedicated monitoring, irrigation, domestic, etc)
- Well completion type (e.g. single well, nested, or multi-completion wells)
- Depth of screened interval(s) and total well depth of well, if available (feet)
- Well Completion Report number (DWR Form 188), if available

The following information about each well is recommended for the CASGEM online system:

- State Well Number – assigned by DWR in most cases
- Method by which land surface elevation was determined (for example, topographic map, GPS, etc.)
- Written description of location of well, including distance from nearby landmarks and location of reference point in relation to well appurtenances (DWR Form 429)
- Well information comments

Groundwater Elevation Information

The following information for each groundwater elevation measurement is required for the CASGEM online system:

- Well identification number (see Well Information, above)
- Measurement date
- Reference point elevation of the well (feet) using NAVD88 vertical datum
- Elevation of land surface datum at the well (feet) using NAVD88 vertical datum
- Depth to water below reference point (feet) (unless no measurement was taken)
- Method of measuring water depth
- Measurement Quality Codes

    - If no measurement is taken, a specified “no measurement” code, must be recorded. Standard codes will be provided by the online system. If a measurement is taken, a “no measurement” code is not recorded.)
    - If the quality of a measurement is uncertain, a “questionable measurement” code can be recorded. Standard codes will be provided by the online system. If no measurement is taken, a “questionable measurement” code is not recorded.)
- Measuring agency identification

The following information for each groundwater elevation measurement is recommended for the CASGEM online system:

- Measurement time (PST/PDT with military time/24 hour format)
- Comments about measurement, if applicable

Groundwater elevation data shall be submitted electronically to DWR’s online system. DWR will develop electronic data transmittal (EDT) alternatives and data standards to permit bulk data transfer and assist Monitoring Entities in EDT reporting to DWR. As stated above, if Monitoring Entities cannot use the standard form(s) or provide the necessary groundwater elevation data elements, DWR will work cooperatively with Monitoring Entities to develop alternate methods of submitting data.

The CASGEM online data submittal system will be compatible with the Water Data Library (WDL) (http://www.water.ca.gov/waterdatalibrary/), DWR’s existing groundwater elevation database. The CASGEM system will include data reporting options similar to those in WDL, such as hydrographs, seasonal contour data, and data downloads. The combined accessibility of the WDL and the CASGEM system will be a significant resource for local agencies in making sound groundwater management decisions.

REFERENCES

California Departement of Water Resources. (2003). *California's Groundwater, Bulletin 118-03.*

California Department of Water Resources. (2009). *California Water Plan Update 2009, Bulletin 160-09.*

APPENDIX – SENATE BILL 6 (7TH EXTRAORDINARY SESSION) - GROUNDWATER MONITORING

Senate Bill No. 6

CHAPTER 1

An act to add Part 2.11 (commencing with Section 10920) to Division 6 of, and to repeal and add Section 12924 of, the Water Code, relating to groundwater.

[Approved by Governor November 6, 2009. Filed with Secretary of State November 6, 2009.]

Legislative Counsel's Digest

SB 6, Steinberg. Groundwater.

(1) Existing law authorizes a local agency whose service area includes a groundwater basin that is not subject to groundwater management to adopt and implement a groundwater management plan pursuant to certain provisions of law. Existing law requires a groundwater management plan to include certain components to qualify as a plan for the purposes of those provisions, including a provision that establishes funding requirements for the construction of certain groundwater projects.

This bill would establish a groundwater monitoring program pursuant to which specified entities, in accordance with prescribed procedures, may propose to be designated by the Department of Water Resources as groundwater monitoring entities, as defined, for the purposes of monitoring and reporting with regard to groundwater elevations in all or part of a basin or subbasin, as defined. The bill would require the department to work cooperatively with each monitoring entity to determine the manner in which groundwater elevation information should be reported to the department. The bill would authorize the department to make recommendations for improving an existing monitoring program, and to require additional monitoring wells under certain circumstances. Under certain circumstances, the department would be required to perform groundwater monitoring functions. In that event, prescribed entities with authority to assume groundwater monitoring functions with regard to a basin or subbasin for which the department has assumed those functions would not be eligible for a water grant or loan awarded or administered by the state.

(2) Existing law requires the department to conduct an investigation of the state's groundwater basins and to report its findings to the Governor and the Legislature not later than January 1, 1980.

This bill would repeal that provision. The department would be required to conduct an investigation of the state's groundwater basins and to report its findings to the Governor and the Legislature not later than January 1, 2012, and thereafter in years ending in 5 or 0.

(3) The bill would take effect only if SB 1 and SB 7 of the 2009–10 7th Extraordinary Session of the Legislature are enacted and become effective.

The people of the State of California do enact as follows:

SECTION 1. Part 2.11 (commencing with Section 10920) is added to Division 6 of the Water Code, to read:

PART 2.11. GROUNDWATER MONITORING

Chapter 1. General Provisions

10920. (a) It is the intent of the Legislature that on or before January 1, 2012, groundwater elevations in all groundwater basins and subbasins be regularly and systematically monitored locally and that the resulting groundwater information be made readily and widely available.

(b) It is further the intent of the Legislature that the department continue to maintain its current network of monitoring wells, including groundwater elevation and groundwater quality monitoring wells, and that the department continue to coordinate monitoring with local entities.

10921. This part does not require the monitoring of groundwater elevations in an area that is not within a basin or subbasin.

10922. This part does not expand or otherwise affect the powers or duties of the department relating to groundwater beyond those expressly granted by this part.

Chapter 2. Definitions

10925. Unless the context otherwise requires, the definitions set forth in this section govern the construction of this part.

(a) “Basin” or “subbasin” means a groundwater basin or subbasin identified and defined in the department’s Bulletin No. 118.

(b) “Bulletin No. 118” means the department’s report entitled “California’s Groundwater: Bulletin 118” updated in 2003, or as it may be subsequently updated or revised in accordance with Section 12924.

(c) “Monitoring entity” means a party conducting or coordinating the monitoring of groundwater elevations pursuant to this part.

(d) “Monitoring functions” and “groundwater monitoring functions” means the monitoring of groundwater elevations, the reporting of those elevations to the department, and other related actions required by this part.

(e) “Monitoring groundwater elevations” means monitoring groundwater elevations, coordinating the monitoring of groundwater elevations, or both.

(f) “Voluntary cooperative groundwater monitoring association” means an association formed for the purposes of monitoring groundwater elevations pursuant to Section 10935.

Chapter 3. Groundwater Monitoring Program

10927. Any of the following entities may assume responsibility for monitoring and reporting groundwater elevations in all or a part of a basin or subbasin in accordance with this part:

(a) A watermaster or water management engineer appointed by a court or pursuant to statute to administer a final judgment determining rights to groundwater.

(b) (1) A groundwater management agency with statutory authority to manage groundwater pursuant to its principal act that is monitoring groundwater elevations in all or a part of a groundwater basin or subbasin on or before January 1, 2010.

(2) A water replenishment district established pursuant to Division 18 (commencing with Section 60000). This part does not expand or otherwise affect the authority of a water replenishment district relating to monitoring groundwater elevations.

(c) A local agency that is managing all or part of a groundwater basin or subbasin pursuant to Part 2.75 (commencing with Section 10750) and that was monitoring

groundwater elevations in all or a part of a groundwater basin or subbasin on or before January 1, 2010, or a local agency or county that is managing all or part of a groundwater basin or subbasin pursuant to any other legally enforceable groundwater management plan with provisions that are substantively similar to those described in that part and that was monitoring groundwater elevations in all or a part of a groundwater basin or subbasin on or before January 1, 2010.

(d) A local agency that is managing all or part of a groundwater basin or subbasin pursuant to an integrated regional water management plan prepared pursuant to Part 2.2 (commencing with Section 10530) that includes a groundwater management component that complies with the requirements of Section 10753.7.

(e) A county that is not managing all or a part of a groundwater basin or subbasin pursuant to a legally enforceable groundwater management plan with provisions that are substantively similar to those described in Part 2.75 (commencing with Section 10750).

(f) A voluntary cooperative groundwater monitoring association formed pursuant to Section 10935.

10928. (a) Any entity described in subdivision (a) or (b) of Section 10927 that seeks to assume groundwater monitoring functions in accordance with this part shall notify the department, in writing, on or before January 1, 2011. The notification shall include all of the following information:

(1) The entity's name, address, telephone number, and any other relevant contact information.

(2) The specific authority described in Section 10927 pursuant to which the entity qualifies to assume the groundwater monitoring functions.

(3) A map showing the area for which the entity is requesting to perform the groundwater monitoring functions.

(4) A statement that the entity will comply with all of the requirements of this part.

(b) Any entity described in subdivision (c), (d), (e), or (f) of Section 10927 that seeks to assume groundwater monitoring functions in accordance with this part shall notify the department, in writing, by January 1, 2011. The information provided in the notification shall include all of the following:

(1) The entity's name, address, telephone number, and any other relevant contact information.

(2) The specific authority described in Section 10927 pursuant to which the entity qualifies to assume the groundwater monitoring functions.

(3) For entities that seek to qualify pursuant to subdivision (c) or (d) of Section 10927, the notification shall also include a copy of the current groundwater management plan or the groundwater component of the integrated regional water management plan, as appropriate.

(4) For entities that seek to qualify pursuant to subdivision (f) of Section 10927, the notification shall include a statement of intention to meet the requirements of Section 10935.

(5) A map showing the area for which the entity is proposing to perform the groundwater monitoring functions.

(6) A statement that the entity will comply with all of the requirements of this part.

(7) A statement describing the ability and qualifications of the entity to conduct the groundwater monitoring functions required by this part.
(c) The department may request additional information that it deems necessary for the purposes of determining the area that is proposed to be monitored or the qualifications of the entity to perform the groundwater monitoring functions.

10929. (a) (1) The department shall review all notifications received pursuant to Section 10928.

(2) Upon the receipt of a notification pursuant to subdivision (a) of Section 10928, the department shall verify that the notifying entity has the appropriate authority under subdivision (a) or (b) of Section 10927.

(3) Upon the receipt of a notification pursuant to subdivision (b) of Section 10928, the department shall do both of the following:

(A) Verify that each notification is complete.

(B) Assess the qualifications of the notifying party.

(b) If the department has questions about the completeness or accuracy of a notification, or the qualifications of a party, the department shall contact the party to resolve any deficiencies. If the department is unable to resolve the deficiencies, the department shall notify the party in writing that the notification will not be considered further until the deficiencies are corrected.

(c) If the department determines that more than one party seeks to become the monitoring entity for the same portion of a basin or subbasin, the department shall consult with the interested parties to determine which party will perform the monitoring functions. In determining which party will perform the monitoring functions under this part, the department shall follow the order in which entities are identified in Section 10927.

(d) The department shall advise each party on the status of its notification within three months of receiving the notification.

10930. Upon completion of each review pursuant to Section 10929, the department shall do both of the following if it determines that a party will perform monitoring functions under this part:

(a) Notify the party in writing that it is a monitoring entity and the specific portion of the basin or subbasin for which it shall assume groundwater monitoring functions.

(b) Post on the department's Internet Web site information that identifies the monitoring entity and the portion of the basin or subbasin for which the monitoring entity will be responsible.

10931. (a) The department shall work cooperatively with each monitoring entity to determine the manner in which groundwater elevation information should be reported to the department pursuant to this part. In determining what information should be reported to the department, the department shall defer to existing monitoring programs if those programs result in information that demonstrates seasonal and long-term trends in groundwater elevations. The department shall collaborate with the State Department of Public Health to ensure that the information reported to the department will not result in the inappropriate disclosure of the physical address or geographical location of drinking water sources, storage facilities, pumping operational data, or treatment facilities.

(b) (1) For the purposes of this part, the department may recommend improvements to an existing monitoring program, including recommendations for additional monitoring wells.

(2) The department may not require additional monitoring wells unless funds are provided for that purpose.

10932. Monitoring entities shall commence monitoring and reporting groundwater elevations pursuant to this part on or before January 1, 2012.

10933. (a) On or before January 1, 2012, the department shall commence to identify the extent of monitoring of groundwater elevations that is being undertaken within each basin and subbasin.

(b) The department shall prioritize groundwater basins and subbasins for the purpose of implementing this section. In prioritizing the basins and subbasins, the department shall, to the extent data are available, consider all of the following:

(1) The population overlying the basin or subbasin.

(2) The rate of current and projected growth of the population overlying the basin or subbasin.

(3) The number of public supply wells that draw from the basin or subbasin.

(4) The total number of wells that draw from the basin or subbasin.

(5) The irrigated acreage overlying the basin or subbasin.

(6) The degree to which persons overlying the basin or subbasin rely on groundwater as their primary source of water.

(7) Any documented impacts on the groundwater within the basin or subbasin, including overdraft, subsidence, saline intrusion, and other water quality degradation.

(8) Any other information determined to be relevant by the department.

(c) If the department determines that all or part of a basin or subbasin is not being monitored pursuant to this part, the department shall do all of the following:

(1) Attempt to contact all well owners within the area not being monitored.

(2) Determine if there is an interest in establishing any of the following:

(A) A groundwater management plan pursuant to Part 2.75 (commencing with Section 10750).

(B) An integrated regional water management plan pursuant to Part 2.2 (commencing with Section 10530) that includes a groundwater management component that complies with the requirements of Section 10753.7.

(C) A voluntary groundwater monitoring association pursuant to Section 10935.

(d) If the department determines that there is sufficient interest in establishing a plan or association described in paragraph (2) of subdivision (c), or if the county agrees to perform the groundwater monitoring functions in accordance with this part, the department shall work cooperatively with the interested parties to comply with the requirements of this part within two years.

(e) If the department determines, with regard to a basin or subbasin, that there is insufficient interest in establishing a plan or association described in paragraph (2) of subdivision (c), and if the county decides not to perform the groundwater monitoring and reporting functions of this part, the department shall do all of the following:

(1) Identify any existing monitoring wells that overlie the basin or subbasin that are owned or operated by the department or any other state or federal agency.

(2) Determine whether the monitoring wells identified pursuant to paragraph (1) provide sufficient information to demonstrate seasonal and long-term trends in groundwater elevations.

(3) If the department determines that the monitoring wells identified pursuant to paragraph (1) provide sufficient information to demonstrate seasonal and long-term trends in groundwater elevations, the department shall not perform groundwater monitoring functions pursuant to Section 10934.

(4) If the department determines that the monitoring wells identified pursuant to paragraph (1) provide insufficient information to demonstrate seasonal and long-term trends in groundwater elevations, and the State Mining and Geology Board concurs with

that determination, the department shall perform groundwater monitoring functions pursuant to Section 10934.[1]

10933.5. (a) Consistent with Section 10933, the department shall perform the groundwater monitoring functions for those portions of a basin or subbasin for which no monitoring entity has agreed to perform the groundwater monitoring functions.

(b) Upon determining that it is required to perform groundwater monitoring functions, the department shall notify both of the following entities that it is forming the groundwater monitoring district:

(1) Each well owner within the affected area.

(2) Each county that contains all or a part of the affected area.

(c) The department shall not assess a fee or charge to recover the costs for carrying out its power and duties under this part.

(d) The department may establish regulations to implement this section.

10933.7. (a) If the department is required to perform groundwater monitoring functions pursuant to Section 10933.5, the county and the entities described in subdivisions (a) to (d), inclusive, of Section 10927 shall not be eligible for a water grant or loan awarded or administered by the state.

(b) Notwithstanding subdivision (a), the department shall determine that an entity described in subdivision (a) is eligible for a water grant or loan under the circumstances described in subdivision (a) if the entity has submitted to the department for approval documentation demonstrating that its entire service area qualifies as a disadvantaged community.

10934. (a) For purposes of this part, neither any entity described in Section 10927, nor the department, shall have the authority to do either of the following:

(1) To enter private property without the consent of the property owner.

[1] The reference in Section 10933(e)(4) to Section 10934 has been amended by Stats. 2010, Ch. 328, sec. 237 (S.B. 1330). The new reference will be to Section 10933.5.

(2) To require a private property owner to submit groundwater monitoring information to the entity.

(b) This section does not apply to a county or an entity described in subdivisions (a) to (d), inclusive, of Section 10927 that assumed responsibility for monitoring and reporting groundwater elevations prior to the effective date of this part.

10935. (a) A voluntary cooperative groundwater monitoring association may be formed for the purposes of monitoring groundwater elevations in accordance with this part. The association may be established by contract, a joint powers agreement, a memorandum of agreement, or other form of agreement deemed acceptable by the department.

(b) Upon notification to the department by one or more entities that seek to form a voluntary cooperative groundwater monitoring association, the department shall work cooperatively with the interested parties to facilitate the formation of the association.

(c) The contract or agreement shall include all of the following:

(1) The names of the participants.

(2) The boundaries of the area covered by the agreement.

(3) The name or names of the parties responsible for meeting the requirements of this part.

(4) The method of recovering the costs associated with meeting the requirements of this part.

(5) Other provisions that may be required by the department.

10936. Costs incurred by the department pursuant to this chapter may be funded from unallocated bond revenues pursuant to paragraph (12) of subdivision (a) of Section 75027 of the Public Resources Code, to the extent those funds are available for those purposes.

SEC. 2. Section 12924 of the Water Code is repealed.

SEC. 3. Section 12924 is added to the Water Code, to read:

12924. (a) The department, in conjunction with other public agencies, shall conduct an investigation of the state's groundwater basins. The department shall identify the state's groundwater basins on the basis of geological and hydrological conditions and consideration of political boundary lines whenever practical. The department shall also investigate existing general patterns of groundwater pumping and groundwater recharge within those basins to the extent necessary to identify basins that are subject to critical conditions of overdraft.

(b) The department shall report its findings to the Governor and the Legislature not later than January 1, 2012, and thereafter in years ending in 5 or 0.

SEC. 4. This act shall take effect only if Senate Bill 1 and Senate Bill 7 of the 2009–10 Seventh Extraordinary Session of the Legislature are enacted and become effective.

"A City That Works"

City Council/Financing Authority Meeting **I. 6.**

DATE: 01/18/2022

TO: Honorable Mayor and City Council Members

SUBJECT: Approve an agreement with Aero Tech Surveys to provide aerial mapping and land surveying services for the California Street Landfill in an amount not-to-exceed $39,000 for the initial term of one year, with the option to extend by two additional one-year terms for a total amount not-to-exceed $117,000.00; and determine that the project is not subject to environmental review pursuant to Section 15301 of the State's guidelines implementing the California Environmental Quality Act (Assistant City Manager Boatman)

MOTION(S):

If the City Council determines that staff's recommendation is appropriate, the following motions are provided:

1. I move that the City Council determine that the agreement with Aero Tech Surveys is exempt from environmental review pursuant to Section 15301 of the State's guidelines implementing the California Environmental Act; and

2. I move that the City Council approve an agreement with Aero Tech Surveys to provide aerial mapping and land surveying services for the California Street Landfill in an amount not-to-exceed $39,000 for the initial term of one year, with the option to extend by two additional one-year terms for a total amount not-to-exceed $117,000.00

RECOMMENDATION:

Staff recommends the City Council approve the agreement with Aero Tech Surveys to provide aerial mapping and land surveying services for the California Street Landfill in an amount not-to-exceed $39,000 for the initial term of one year, with the option to extend by two additional one-year terms for a total amount not-to-exceed $117,000.00.

DISCUSSION:

The California Street Landfill is required by Federal, State, and County agencies to remain in compliance with regulatory requirements associated with the daily operations, monitoring and adjustments, topographic maps, slope analysis, drainage diagrams, and volumetric calculations of the Landfill. This includes regular field mapping and surveying to ensure an accurate understanding of airspace utilization and to maintain water quality compliance specific to the Santa Ana Regional Water Quality Control Board standards.

In accordance with the City's procurement guidelines, a formal Request for Proposals (RFP) was advertised on October 21, 2021, for aerial mapping and land surveying services. The RFP evaluated the capacity and qualification of firms to provide services and their experience to provide the required services. A total of two (2) responses were received from the following firms:

1. Aero Tech Surveys
2. ERSC Engineering

Staff evaluated the proposals for conformance with the scope of services and qualifications in accordance with Chapter 2.16.180 of the Redlands Municipal Code. Staff confirmed that Aero Tech Surveys met the City's requirements and is the most highly qualified firm, based on the response to the scope of work provided in the RFP.

Staff is recommending that the City Council approve an agreement with Aero Tech Surveys in the amount of $39,000.00 for a period of one year, with two additional one-year renewal options for a total agreement amount not-to-exceed $117,000.00.

This proposed agreement is categorically exempt from environmental review in accordance with Section 15301 of the State's guidelines implementing the California Environmental Quality Act as the agreement pertains to the maintenance of existing public facilities involving no expansion to current uses.

ALTERNATIVES:

The City Council may elect to direct staff to reject all proposals and re-issue the proposal.

STRATEGIC PLAN:

Supports Focus area C - Infrastructure

SUBMITTED BY:
Chris Boatman, Assistant City Manager

RECOMMENDED BY:
Charles M. Duggan Jr., City Manager

REVIEWED BY:
Daniel J. McHugh, City Attorney
Janice McConnell, Assistant City Manager
Danielle Garcia, Management Services/Finance Director
Dana Abramovitz-Daniel, Procurement Manager

PREPARED BY:
Nathalie Ayala, Senior Administrative Assistant

Fiscal Impact

Fiscal Year:	FY 2021-22
Revenue Generating:	Yes
Appropriation Required Y/N:	No
Amount:	$39,000
Budgeted Y/N:	Yes
Account No.:	511900

Discussion:

Sufficient funding for this service is included in the Solid Waste Division's (511900) budget for Fiscal Year 2021-22 as approved by City Council. Costs associated with any future renewal terms of the agreement will be included in subsequent budget requests prepared by the Department.

Attachments

A. Agreement with Aero Tech Surveys

AGREEMENT TO PERFORM PROFESSIONAL SERVICES

This agreement for the provision of aerial mapping and land surveying services for the California Street Landfill ("Agreement") is made and entered in this 18th day of January, 2022 ("Effective Date"), by and between the City of Redlands, a municipal corporation ("City") and Aero Tech Services, a California corporation ("Consultant"). City and Consultant are sometimes individually referred to herein as a "Party" and, together, as the "Parties." In consideration of the mutual promises contained herein, City and Consultant agree as follows:

ARTICLE 1 – ENGAGEMENT OF CONSULTANT

1.1 City hereby engages Consultant to provide aerial mapping and land surveying for City's California Street Landfill (the "Services").

1.2 The Services shall be performed by Consultant in a professional manner, and Consultant represents that it has the skill and the professional expertise necessary to provide the Services to City at a level of competency presently maintained by other practicing professional consultants in the industry providing like and similar types of Services.

ARTICLE 2 – SERVICES OF CONSULTANT

2.1 The Services that Consultant shall perform are more particularly described in Exhibit "A," titled "Scope of Services," which is attached hereto and incorporated herein by reference.

2.2 Consultant shall comply with applicable federal, state and local laws and regulations in the performance of this Agreement including, but not limited to, any applicable State prevailing wage laws.

ARTICLE 3 – RESPONSIBILITIES OF CITY

3.1 City designates Chris Boatman, Assistant City Manager, as City's representative with respect to performance of the Services, and such person shall have the authority to transmit instructions, receive information, interpret and define City's policies and decisions with respect to performance of the Services.

ARTICLE 4 – PERFORMANCE OF SERVICES

4.1 Consultant shall perform and complete the Services in a prompt and diligent manner in accordance with the schedule set forth in Exhibit "A," titled "Scope of Services," which is attached hereto and incorporated herein by reference.

4.2 The Term of this Agreement shall be for a period of one (1) year from the Effective Date of this Agreement (the "Initial Term"). The City shall have the option to extend the Initial Term of this Agreement by two (2) additional one-year terms (each, an "Extended Term"), on the same terms and conditions, by providing written notice to Consultant at least thirty (30) days prior to the expiration of the Initial Term or any Extended Term.

The Initial Term and any Extended Terms are hereinafter collectively referred to as the "Term" of this Agreement.

4.3 If Consultant's Services include deliverable electronic visual presentation materials, such materials shall be delivered in a form, and made available to City, consistent with City Council-adopted policy for the same. It shall be the obligation of Consultant to obtain a copy of such policy from City staff.

ARTICLE 5 – PAYMENTS TO CONSULTANT

5.1 The total annual compensation for Consultant's performance of the Services shall not exceed the amount of thirty nine thousand dollars ($39,000) for the Services provided during the Initial Term. Should this Agreement be extended, the compensation for Consultant's performance for the Services shall not exceed the amount of thirty nine thousand dollars ($39,000) for the first Extended Term; and thirty nine thousand dollars ($39,000) for the second Extended Term, bringing the total possible amount of compensation to a not-to-exceed amount of one hundred seventeen thousand dollars ($117,000). City shall pay Consultant on a time and materials basis up to the not to exceed amount in accordance with Exhibit "B," titled "Schedule of Fees," which is attached hereto and incorporated herein by reference.

5.2 Consultant shall submit monthly invoices to City describing the Services performed during the preceding month. Consultant's invoices shall include a brief description of the Services performed, the dates the Services were performed, the number of hours spent and by whom, and a description of reimbursable expenses related to the Services. City shall pay Consultant no later than thirty (30) days after receipt and approval by City of Consultant's invoice.

5.3 Any notice or other communication required, or which may be given, pursuant to this Agreement, shall be in writing. Any such notice shall be deemed delivered (i) on the date of delivery in person; (ii) five (5) days after deposit in first class registered mail, with return receipt requested; (iii) on the actual delivery date if deposited with an overnight courier; or (iv) on the date sent by facsimile or electronic mail transmission (including PDF), if confirmed with a copy sent contemporaneously by first class, certified, registered or express mail; in each case properly posted and fully prepaid to the appropriate address set forth below, or such other address as a Party may provide notice in accordance with this section:

CITY:

City Clerk
City of Redlands
35 Cajon Street
P.O. Box 3005 (mailing)
Redlands, CA 92373
jdonaldson@cityofredlands.org
Phone: (909) 798-7531

CONSULTANT:

Janine C. Schmidt, President
Aero Tech Surveys
6810 Airport Dr.
Riverside, CA 92504
Aerotechsurveys@sbcglobal.net
Phone: (909) 785-0160

ARTICLE 6 – INSURANCE AND INDEMNIFICATION

6.1 The following insurance coverage required by this Agreement shall be maintained by Consultant for the duration of its performance of the Services. Consultant shall not perform any Services unless and until the required insurance listed below is obtained by Consultant. Consultant shall provide City with certificates of insurance and endorsements evidencing such insurance prior to commencement of the Services. Insurance policies shall include a provision prohibiting cancellation or modification of the policy except upon thirty (30) days prior written notice to City.

A. Workers' Compensation and Employer's Liability insurance in the amount that meets statutory requirements with an insurance carrier acceptable to City, or certification to City that Consultant is self-insured or exempt from the workers' compensation laws of the State of California. Consultant shall execute and provide City with Exhibit "C," titled "Workers' Compensation Insurance Certification," which is attached hereto and incorporated herein by this reference, prior to performance of the Services.

B. Comprehensive General Liability insurance with carriers acceptable to City in the minimum amount of One Million Dollars ($1,000,000) per occurrence and Two Million Dollars ($2,000,000) aggregate, for public liability, property damage and personal injury is required. City shall be named as an additional insured and such insurance shall be primary and non-contributing to any insurance or self-insurance maintained by City.

C. Consultant shall secure and maintain professional liability insurance throughout the term of this Agreement in the amount of One Million Dollars ($1,000,000) per claim made.

D. Business Auto Liability coverage, with minimum limits of One Million Dollars ($1,000,000) per occurrence, combined single limit bodily injury liability and property damage liability. This coverage shall include all Consultant owned vehicles used in connection with Consultant's provision of the Services, hired and non-owned vehicles, and employee non-ownership vehicles. City shall be named as an additional insured and such insurance shall be primary and non-contributing to any insurance or self-insurance maintained by City.

E. Consultant is expressly prohibited from assigning or subcontracting any of the Services without the prior written consent of City. In the event of mutual agreement by the Parties to assign or subcontract a portion of the Services, Consultant shall add such assignee or subcontractor as an additional insured to the insurance policies required hereby and provide City with the insurance endorsements prior to any Services being performed by the assignee or subcontractor.

6.2 Consultant shall defend, indemnify and hold harmless City and its elected and appointed officials, employees and agents from and against any and all claims, losses or liability, including attorneys' fees, arising from injury or death to persons or damage to property

occasioned by any negligent act or omission by, or the willful misconduct of, Consultant, or its officers, employees and agents in performing the Services.

ARTICLE 7 – CONFLICTS OF INTEREST

7.1 Consultant covenants and represents that it does not have any investment or interest in any real property that may be the subject of this Agreement or any other source of income, interest in real property or investment that would be affected in any manner or degree by the performance of Consultant's Services. Consultant further covenants and represents that in the performance of its duties hereunder, no person having any such interest shall perform any Services under this Agreement.

7.2 Consultant agrees it is not a designated employee within the meaning of the Political Reform Act because Consultant:

A. Does not make a governmental decision whether to:

(i) approve a rate, rule or regulation, or adopt or enforce a City law;
(ii) issue, deny, suspend or revoke any City permit, license, application, certification, approval, order or similar authorization or entitlement;
(iii) authorize City to enter into, modify or renew a contract;
(iv) grant City approval to a contract that requires City approval and to which City is a party, or to the specifications for such a contract;
(v) grant City approval to a plan, design, report, study or similar item;
(vi) adopt, or grant City approval of, policies, standards or guidelines for City or for any subdivision thereof.

B. Does not serve in a staff capacity with City and in that capacity, participate in making a governmental decision or otherwise perform the same or substantially the same duties for City that would otherwise be performed by an individual holding a position specified in City's Conflict of Interest Code under Government Code section 87302.

7.3 In the event City determines that Consultant must disclose its financial interests, Consultant shall complete and file a Fair Political Practices Commission Form 700, Statement of Economic Interests, with the City Clerk's office pursuant to the written instructions provided by the City Clerk.

ARTICLE 8 – GENERAL CONSIDERATIONS

8.1 In the event any action is commenced to enforce or interpret any of the terms or conditions of this Agreement the prevailing Party shall, in addition to any costs and other relief, be entitled to the recovery of its reasonable attorneys' fees, including fees for the use of in-house counsel by a Party.

8.2 Consultant shall not assign any of the Services, except with the prior written approval of City and in strict compliance with the terms and conditions of this Agreement. Any

assignment or attempted assignment without such prior written consent may, in the sole discretion of City, result in City's immediate termination of this Agreement.

8.3 Consultant is for all purposes under this Agreement an independent contractor and shall perform the Services as an independent contractor. Neither City nor any its agents shall have control over the conduct of Consultant or Consultant's employees, except as herein set forth. Consultant shall supply all necessary tools and instrumentalities required to perform the Services. Assigned personnel employed by Consultant are for its account only, and in no event shall Consultant or personnel retained by it be deemed to have been employed by City or engaged by City for the account of, or on behalf of City. Consultant shall have no authority, express or implied, to act on behalf of City in any capacity whatsoever as an agent, nor shall Consultant have any authority, express or implied, to bind City to any obligation.

8.4 This Agreement may be terminated by City, in its sole discretion, by providing not less than five (5) days prior written notice to Consultant of City's intent to terminate. If this Agreement is terminated by City, an adjustment to Consultant's compensation shall be made, but (1) no amount shall be allowed for anticipated profit or unperformed Services, and (2) any payment due Consultant at the time of termination may be adjusted to the extent of any additional costs to City occasioned by any default by Consultant. Upon receipt of a termination notice, Consultant shall immediately discontinue its provision of the Services and, within five (5) days of the date of the termination notice, deliver or otherwise make available to City, copies (in both hard copy and electronic form, where applicable) of project related data, design calculations, drawings, specifications, reports, estimates, summaries and such other information and materials as may have been accumulated by Consultant in performing the Services. Consultant shall be compensated on a pro-rata basis for Services completed up to the date of termination.

8.5 Consultant shall maintain books, ledgers, invoices, accounts and other records and documents evidencing costs and expenses related to the Services for a period of three (3) years, or for any longer period required by law, from the date of final payment to Consultant pursuant to this Agreement. Such books shall be available at reasonable times for examination by City at the office of Consultant.

8.6 This Agreement, including the Exhibits incorporated herein by reference, represents the entire agreement and understanding between the Parties as to the matters contained herein, and any prior negotiations, written proposals or verbal agreements relating to such matters are superseded by this Agreement. Except as otherwise provided for herein, any amendment to this Agreement shall be in writing, approved by City and signed by City and Consultant.

8.7 This Agreement shall be governed by and construed in accordance with the laws of the State of California, without regard to its conflicts of laws provisions. The Parties agree that all actions or proceedings arising in connection with this Agreement shall be tried and litigated only in the state courts located in San Bernardino County, California, and the federal courts located in Riverside County, California.

8.8 If one or more of the sentences, clauses, paragraphs or sections contained in this Agreement is declared invalid, void or unenforceable by a court of competent jurisdiction, the same shall be deemed severable from the remainder of this Agreement and shall not affect, impair or invalidate the remaining sentences, clauses, paragraphs or sections contained herein, unless to do so would deprive a Party of a material benefit of its bargain under this Agreement.

IN WITNESS WHEREOF, duly authorized representatives of City and Consultant have signed in confirmation of this Agreement.

CITY OF REDLANDS

By: _____
Paul T. Barich, Mayor

AERO TECH SURVEYS

By: _____
Janine C. Schmidt, President

ATTEST:

_____
Jeanne Donaldson, City Clerk

EXHIBIT "A"

SCOPE OF SERVICES

Scope of Work

Provide, on an as-needed basis, the following services:

- Conduct field surveys and research
- Perform staking of lot lines / pre-set field measurements
- Create lot line adjustments
- Create legal descriptions
- Produce various exhibits, maps, figures as needed
- Combine surfaces and varied data to produce layered exhibits
- Perform topographic / aerial cartography to produce volumes
- Produce volumetric calculations, including rate-of-fill, ultimate fill levels, capacity levels
- Prepare aerial photo mission flight maps
- Plan aerial control networks
- Set and survey aerial control marks
- Acquire aerial photography
- Provide analytical triangulation (AT)
- Compile and build 3-D models of planimetric and terrain features
- Present the digital topographic map model in a variety of CAD platforms
- Utilize client standards when possible
- Create Digital Ortho Photos
- Assemble Photo Mosaics
- Prepare slope analysis diagrams
- Calculate Volumes between terrain surfaces
- Calculate estimated lifespan

EXHIBIT "B"
FEE SCHEDULE

Annual Mapping: Based on past performance, we have determined that the budget for performing the annual topographic mapping and volume calculations event is **$15,000.00.** This includes the ground control survey, flight planning, acquisition of aerial imagery, aerial mapping, volume calculations comparing previous years' surface, digital orthophoto and certification of compliance with Regional Water Quality Control Board requirements.

On-Call Services: Based on past performance, we estimate a budget of **$2,000.00** a month for typical land surveying activities for fill operations, slope certification checks, miscellaneous on-call services, exhibits and meetings.

Listed below is our schedule of fees for the full range of services that we provide:

Schedule of Fees – Cost Breakdown by Task:

CEO – Professional Services, PLS	$125.00/hour
PLS: Deposition/Trial	$250.00/hour
Photogrammetric Compilation	$ 75.00/hour
Project Manager	$ 85.00/hour
Draftsman	$ 65.00/hour
Secretarial	$ 65.00/hour
Two Man Survey Crew	$225.00/hour
Three Man Survey Crew	$290.00/hour
Four Man Survey Crew	$355.00/hour
Materials	at cost plus 15%
Per Diem	$200/day/person
Public Works Projects	at Prevailing Wage x Net Multiplier of 2.5 per person

EXHIBIT "C"

WORKERS' COMPENSATION INSURANCE CERTIFICATION

Every employer, except the State, shall secure the payment of compensation in one or more of the following ways:

(a) By being insured against liability to pay compensation by one or more insurers duly authorized to write compensation insurance in this State.

(b) By securing from the Director of Industrial Relations, a certificate of consent to self-insure, either as an individual employer, or as one employer in a group of employers, which may be given upon furnishing proof satisfactory to the Director of Industrial Relations of ability to self-insure and to pay any compensation that may become due to his or her employees.

CHECK ONE

_____I am aware of the provisions of Section 3700 of the Labor Code which requires every employer to be insured against liability for Workers' Compensation or to undertake self-insurance in accordance with the provisions of that Code, and I will comply with such provisions before commencing the performance of the work and activities required or permitted under this Agreement. (Labor Code §1861).

_____I affirm that at all times, in performing the work and activities required or permitted under this Agreement, I shall not employ any person in any manner such that I become subject to the workers' compensation laws of California. However, at any time, if I employ any person such that I become subject to the workers' compensation laws of California, immediately I shall provide the City with a certificate of consent to self-insure, or a certification of workers' compensation insurance.

I certify under penalty of perjury under the laws of the State of California that the information and representations made in this certificate are true and correct.

AERO TECH SURVEYS

By:_____ Date: _____

Janine C. Schmidt, President

"A City That Works"

City Council/Financing Authority Meeting **I. 7.**

DATE: 01/18/2022

TO: Honorable Mayor and City Council Members

SUBJECT: Approve a Sole Source purchase order with Nextech Systems, Inc. in an amount not-to-exceed $48,500.81 for Traffic Signal Cabinet Battery Backup Systems; and determine that the purchase is not subject to environmental review pursuant to Section 15301 of the State's guidelines implementing the California Environmental Quality Act (Assistant City Manager Chris Boatman)

MOTION(S):

If the City Council determines that staff's recommendation is appropriate, the following motions are provided:

1. I move that the City Council determine that approval of the purchase order is exempt from environmental review pursuant to Section 15301 of the State's guidelines implementing the California Environmental Act; and

2. I move that the City Council approve a purchase order with NexTech Systems, Inc. for the provision of traffic signal cabinet battery backup systems in an amount not to exceed $48,500.81.

RECOMMENDATION:

Staff recommends that the City Council determine that the purchase with NexTech Systems, Inc., is exempt from environmental review pursuant to Section 15301 of the State's guidelines implementing the California Environmental Act; and award a sole source purchase order to NexTech Systems, Inc., for the provision of traffic signal cabinet battery backup systems in an amount not-to-exceed $48,500.81.

DISCUSSION:

The Redlands Passenger Rail (Arrow) project involves extending passenger rail service approximately nine miles from San Bernardino Transit Center in the City of San Bernardino to the University of Redlands. The rail intersects multiple City streets and affects certain signalized intersections. Although signals have been upgraded for the rail line, the new systems still rely on the existing battery backup systems contained in the decommissioned cabinets. However, the current backup systems at these intersections are outdated and need replacement.

Uninterruptible Power Supplies are used at each of the City's signaled intersections and are activated in the event of a power failure to supply individual traffic signals with emergency power. The City of Redlands traffic signal specifications specifically call for the use of Clary UPS battery packs. Nextech Systems, Inc. is the authorized regional distributor of Clary UPS battery backup systems. To ensure public safety at each active rail crossing, staff recommends City Council award a sole source purchase order to NexTech Systems, Inc., for the provision of traffic signal cabinet battery backup systems in an amount not-to-exceed $48,500.81.

The proposed purchase is categorically exempt from the requirements of the California Environmental Quality Act's guidelines pursuant to Section 15301 as the proposed improvements do not increase the existing operational capacity or expand the use of traffic signals, enabling a categorical exemption from CEQA under section 15301 for Existing Facilities.

ALTERNATIVES:

City Council may elect not to enter into a Sole Source agreement with Nextech Systems, Inc. and provide alternative direction to staff.

STRATEGIC PLAN:

Focus Area-E: Safety and Community Services

SUBMITTED BY:

Chris Boatman, Assistant City Manager

RECOMMENDED BY:

Charles M. Duggan Jr., City Manager

REVIEWED BY:
Daniel J. McHugh, City Attorney
Janice McConnell, Assistant City Manager
Danielle Garcia, Management Services/Finance Director

PREPARED BY:
Mike Foster, Field Services Coordinator-Streets Division

Fiscal Impact

Fiscal Year:	F2021-2022
Appropriation Required Y/N:	N
Amount:	48,500.81
Budgeted Y/N:	Y
Account No.:	101302

Discussion:

Sufficient funding for the UPS units is included in the Electrical Maintenance Division's (101302) budget for Fiscal Year 2021-22 as approved by City Council.

Attachments

A. Sole-Single Source Request Form

Sole Source/ Single Source/ Standardization Form

For procurement of supplies, equipment and services valued at $5,000 and over

NOTE: Every question must be answered with appropriate documentation attached; incomplete forms will be immediately rejected by Purchasing.

Date: 12/16/21

TO: Purchasing Division

FROM: Mike Foster

Purchase Requisition # _____

Estimated Total Cost: $ 48,500.81

Proposed Vendor: NexTech Systems Inc

Request Term: One time

This form must accompany the purchase document whenever an exception to the competitive process is requested. Requests for goods and/or services from a specific vendor or limited to a specific brand, where substitutes to the recommended vendor or brand are unacceptable, must be accompanied by a written justification explaining the circumstances that make alternatives unacceptable.

The City Manager will determine whether the justification is appropriate. Requests for exception must be supported by factual statements that will pass an audit.

INSTRUCTIONS

1. Please check all applicable categories (a. through i.) below and provide additional information where indicated.

☐ a. The requested product is an integral repair part or accessory compatible with existing equipment.

Existing Equipment: _____

Manufacturer/Model Number: _____

Age: _____

Current Estimated Value: _____

☒ b. The requested product has unique design/performance specifications or quality requirements that are not available in comparable products.

☒ c. I have standardized the requested product and the use of another brand/model would require considerable time and funding to evaluate.

☐ d. The requested product is one in which I (and/or my staff) have specialized training and/or extensive expertise. Retraining would incur substantial cost in time and/or funding.

☐ e. The requested product is used or demonstration equipment available at a lower-than-new cost.

☐ f. Repair/Maintenance service is available only from manufacturer or designated service representative.

☐ g. Upgrade to or enhancement of existing software is available only from manufacturer.

☐ h. Service proposed by vendor is unique; therefore, competitive bids are not available or applicable.

☒ i. Other factors (provide detailed explanation in #2 below).

2. Provide a detailed explanation and pertinent documentation *for each category* checked in item 1 above. Attach additional sheets if necessary:

Nextech is the Southern California distributor for Clary battery backup systems, which are in our City traffic signal specs. Not only does it provide back up service, but conditions and cleans the power provided by Edison.

3. Was an evaluation of other equipment, products, or services performed?
☐ Yes ■ No
If yes, please explain the type of evaluation performed and provide all supporting documentation:

4. List below the name of each individual who was involved in the evaluation, if conducted, and in making the recommendation to procure this product or service. Attach additional information, if necessary.

5. **Explain what action(s) the department would take if the sole/single source services were no longer available**

Purchase a different brand not currently in our specs that does not condition the power.

6. I certify that the above information is accurate to the best of my knowledge, and a signed copy of this document will be kept on file and available for audit in my department

Mike Foster Digitally signed by Mike Foster Date: 2021.12.20 05:58:46 -08'00'

Prepared by Date

Department Director 12/20/21 Date

Purchasing Approvals

Purchasing Agent Approval Date

City Manager Approval Date

Rev 1.31.19

"A City That Works"

City Council/Financing Authority Meeting **I. 8.**

DATE: 01/18/2022

TO: Honorable Mayor and City Council Members

SUBJECT: Approve request for the consumption of alcoholic beverages at Smiley Park at the Watchorn Lincoln Dinner to be held on February 12, 2022, and determination that the approval of the request is exempt from environmental review pursuant to Section 15061(b)(3) of the state's guidelines implementing the California Environmental Quality Act (Assistant City Manager Boatman)

MOTION(S):

If the City Council determines that staff's recommendation is appropriate, the following motions are provided:

1. I move that the City Council determine that approval of the request for the consumption of alcoholic beverages within a City park during the Watchorn Lincoln Dinner is exempt from environmental review pursuant to Section 15061(b)(3) of the State's guidelines implementing the California Environmental Quality Act; and

2. I move to approve the request for the consumption of alcoholic beverages at Smiley Park during the Lincoln Dinner to be held on February 12, 2022.

RECOMMENDATION:

Staff recommends City Council determine that approval of the request for the sale and consumption of alcoholic beverages at Smiley Park during Watchorn Lincoln Dinner is exempt from environmental review pursuant to Section 15061(b)(3) of the state's guidelines implementing the California Environmental Quality Act (CEQA); and provide staff with the direction regarding the request for the sale and consumption of alcoholic beverages.

DISCUSSION:

The A.K. Smiley Public Library will host the Annual Watchorn Lincoln Dinner on February 12, 2022. The A.K. Smiley Public Library is requesting permission to serve beer and wine as a courtesy to the dinner guests. Serving and selling alcohol at the event is scheduled to end no later than 9:00 p.m. The Redlands Municipal Code includes provisions that allow for the reservation of public areas by private parties. Staff's approval authority for the consumption of alcoholic beverages is limited to only enclosed public spaces in public parks as defined by Resolution No. 7559. Therefore, City Council approval is required for the request for the sale and consumption of alcohol.

The applicant is required to comply with any conditions set by the Police Department. In addition, they may be required to provide the City with certificates for public liability insurance to protect against loss from liability for damages on account of bodily injury and property damage arising from the Applicant's activity. Such insurance shall include not less than $1,000,000 per occurrence and $2,000,000 in the aggregate of comprehensive general liability insurance, including bodily injury and property damage coverage, together with such other additional coverage as the City's Risk Manager may determine to be prudent. Insurance coverage shall be obtained before the event and maintained for the duration of the Applicant's activity.

Approval of the request is exempt from the requirements of the California Environmental Quality Act's guidelines pursuant to Section 15061(b)(3). Section 15061(b)(3), referred to as the "general rule," applies to those activities where it is seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment. Approval of the project authorizes the consumption of alcoholic beverages within the City's right-of-way and will not result in any physical change to the environment.

ALTERNATIVES:

The City Council may deny the request.

STRATEGIC PLAN:

Objective B-2: Tourism: Increase tourism by marketing Redlands as a destination.

SUBMITTED BY:
Chris Boatman, Assistant City Manager

RECOMMENDED BY:
Charles M. Duggan Jr., City Manager

REVIEWED BY:
Daniel J. McHugh, City Attorney
Janice McConnell, Assistant City Manager
Danielle Garcia, Management Services/Finance Director
Christopher R. Catren, Police Chief

PREPARED BY:
Larry Alms, Administrative Assistant

Fiscal Impact

Fiscal Year: FY 2021-22

Discussion:

There is no fiscal impact related to the approval of the request to serve alcohol.

Attachments

A. Authorization to Serve Alcohol

CITY OF REDLANDS
APPLICATION REQUESTING AUTHORIZATION TO SERVE ALCOHOL

TYPE/NAME OF EVENT: Watchorn Lincoln Dinner

DATE OF EVENT: 02/12/2022 HOURS: 5-9pm

LOCATION: Smiley Park between AK Smiley Public Library and the Lincoln Memorial Shrine

APPLICANT'S INFORMATION:

INDIVIDUAL/ORGANIZATION NAME: A.K. Smiley Public Library/City of Redlands

CONTACT PERSON: Nathan Gonzales PHONE: x7472

EMAIL: ngonzales@akspl.org ADDRESS: 125 W Vine St, Redlands, CA 92373

EVENT INFORMATION:

ARE FEES BEING CHARGED FOR EVENT? YES ☑ NO ☐ PRICE: $90

ARE FEES BEING CHARGED FOR ALCOHOL? YES ☐ NO ☑ PRICE: _____

TYPE OF ALCOHOL BEING SERVED: BEER ☑ WINE ☑ DISTILLED SPIRITS ☐

RELEASE, HOLD HARMLESS AND AGREEMENT NOT TO SUE

I, the undersigned, representing A.K. Smiley Public Library/City of Redlands and in consideration of being permitted to conduct the Event, agree that the members/participants of A.K. Smiley Public Library/City of Redlands shall defend, indemnify and hold harmless the City of Redlands, its elected officials, officers, boards, commissions, agents and employees from and against any and all claims, demands, actions, suits, damages, liabilities and judgments of every kind and nature and regardless of the merit of the same, arising out of the use of City of Redlands' facilities.

The members/participants of A.K. Smiley Public Library/City of Redlands hereby release, discharge and agree not to sue the City of Redlands for any injury, death or damages to or loss of property arising out of or in connection with this event from whatever cause.

I HAVE CAREFULLY READ THIS RELEASE, HOLD HARMLESS AND AGREEMENT NOT TO USE AND FULLY UNDERSTAND ITS CONTENTS. I REPRESENT I HAVE THE FULL AUTHORITY TO EXECUTE THIS FULL RELEASE OF LIABILITY ON BEHALF OF THE MEMBERS/PARTICIPANTS OF A.K. Smiley Public Library/City of Redlands AND THAT I HAVE SIGNED THIS AGREEMENT ON:

Date: _____ Signature: Nathan Gonzales Digitally signed by Nathan Gonzales Date: 2021.10.08 08:09:46 -07'00'

AUTHORIZATION

Pursuant to the use of alcohol within the City property noted above, the City of Redlands grants you permission to do so with the following conditions set forth by the City Council:

ALCOHOL RELATED TO PARKS:

Redlands Municipal; Code, Section 12.44.270 does allow, pursuant to a written permit from the Quality of Life Director, a person or persons to drink or consume alcoholic beverages in public parks, only in enclosed public areas as defined by resolution of the City Council. Any other locations within the City's property requires the City Council approval and designation of the place for the sale and consumption thereof.

Tape or fencing of some kind shall be used for setting off the area for which the alcoholic beverages are served and consumed. Alcohol sales and distribution shall cease one hour prior to end of the event unless otherwise directed by RPD or ABC office.

ALCOHOL RELATED TO AIRPORT:

12.56.090: USE OF INTOXICATING LIQUOR OR DRUGS: No person shall operate or assist in the operation of any aircraft while under the influence of, or using, any intoxicating liquor or habit forming or hallucinatory or narcotic drug. No alcoholic beverage may be consumed or sold on the airport unless the city council shall have approved and designated the place for the sale and consumption thereof.

APPROVED: _____ DATE: _____ DENIED: _____ DATE: _____

CITY COUNCIL DATE (if applicable):_____

"A City That Works"

City Council/Financing Authority Meeting **I. 9.**

DATE: 01/18/2022

TO: Honorable Mayor and City Council Members

SUBJECT: Authorize the acceptance of the California Market Match Program Grant through the Ecology Center in the amount of $4,260 and approve an additional appropriation of the same (Assistant City Manager Boatman)

MOTION(S):

If the City Council determines that staff's recommendation is appropriate, the following motions are provided:

1. I move that the City Council accept the California Market Match Program Grant through the Ecology Center in the amount of $4,260; and

2. I move to approve the additional appropriation of the same.

RECOMMENDATION:

Staff recommends that the City Council accept the California Market Match Program Grant through the Ecology Center in the amount of $4,260, and approve an additional appropriation of the same.

DISCUSSION:

The Federal Supplemental Nutrition Assistance Program (SNAP), called CalFresh in California and occasionally referred to as "food stamps," is the largest food assistance program in the nation. Market Match is California's SNAP healthy food incentive program which matches customers' nutrition assistance benefits, like CalFresh and WIC, at farmers' markets. The matching funds allow SNAP recipients to buy more fruits and vegetables from eligible farmers' markets such as the Redlands Certified Farmers Markets. Market Match empowers qualifying shoppers to make healthy food choices by overcoming financial barriers. The intent of the grant is to encourage job creation, local economic development, and civic engagement by leveraging the benefits of farmers' markets for a broader community.

From 2017 through 2021, the City Council has approved the acceptance of Market Match grant funds for use at the City's Certified Farmers Markets. The Saturday Morning Certified Farmers Market has continued in operation as an essential service throughout the Covid-19 pandemic. The program has been an extraordinary success, with a cumulative 700 participants who have used the program with $9,000 in incentives provided for the purchase of locally grown fresh fruits and vegetables. If approved, the grant funds for the fifth year will be dedicated to continuing the Market Match incentive program, including advertising for customer outreach, incentives distributed to participants, and program administration for data tracking and distribution of incentives at the market.

The City has been awarded the California Market Match Program Grant through the Ecology Center in the amount of $4,260. An in-kind requirement in the amount of $7,444.17 will be fulfilled through staff time administering the grant and existing staff time distributing funds at the City's markets. The term of this grant is from January 1, 2022, through December 31, 2022.

ALTERNATIVES:

City Council may elect not to receive the California Market Match Program Grant award at this time.

STRATEGIC PLAN:

Supports Objective B-2: Increase tourism by marketing Redlands as a destination and expand/enhance Downtown area and related events.

Supports Focus Area E: Safety and Community Services.

SUBMITTED BY:
Chris Boatman, Assistant City Manager

RECOMMENDED BY:
Charles M. Duggan, Jr., City Manager

REVIEWED BY:
Daniel J. McHugh, City Attorney
Janice McConnell, Assistant City Manager
Danielle Garcia, Management Services/Finance Director

PREPARED BY:
Dave Jaffe, Recreation Supervisor

Fiscal Impact

Fiscal Year:	FY 2021-22
Appropriation Required Y/N:	Y
Amount:	$4,260.00
Account No.:	200300

Discussion:

The grant will provide total funds in the amount of $4,260.00. Of this total, $510.00 will be used towards promoting and administering the program and $3,750.00 will be used towards incentives. The City is required to provide a match of $7,444.17 in in-kind services.

Attachments

Ecology Center Agreement
Additional Appropriation Form



AGREEMENT FOR SERVICES

THIS AGREEMENT ("Agreement") is made and entered into by the Ecology Center, a nonprofit public benefit corporation organized under the laws of the State of California with offices at 2530 San Pablo Avenue, Berkeley, California, 94702 and **City of Redlands** with offices at

35 Cajon Street, Suite 222, Redlands, CA 92373

(hereafter "Contractor," and together with the Ecology Center, the "Parties"). The Ecology Center enters into this Agreement to carry out a portion of its California Nutrition Incentive Program ("CNIP") Grant Agreement with the California Department of Food and Agriculture- ("CDFA") grant contract number 19-0807-001-SF.

WHEREAS, Contractor has the required capacity to provide the services sought by the Ecology Center; and

WHEREAS, Ecology Center wishes to utilize Contractor's services and abilities during the term of this Agreement, and Contractor is willing to offer such services upon the terms and conditions contained in this Agreement;

NOW THEREFORE, in consideration of the promises contained herein, the Parties agree as follows:

1. Term, Engagement, and Services. This Agreement is effective as of January 1, 2022 and terminates on December 31, 2022 unless terminated earlier as provided herein. During the term of this Agreement, the Ecology Center hereby engages Contractor and Contractor hereby agrees to serve the Ecology Center, as an independent contractor and not as an employee or agent of the Ecology Center. Contractor shall be available to work for reasonable periods of time to perform the scope of services and provide deliverables according to the budget and schedule as set forth in Attachment A: Budget, Attachment B: Scope of Work, and Attachment C: Debarment Certification Form (the "Services"), included with and hereby made a part of this agreement. Either party to this Agreement may terminate this Agreement at any time, with or without cause, by giving the other party thirty (30) days written notice. Should Contractor default in the performance of this Agreement or materially breach any of its terms, the Ecology Center at its option, may terminate this Agreement effective immediately upon giving written notice to Contractor stating the reason for the termination of this Agreement.

Contractor's original grant proposal and any revisions thereto, including all supplemental documentation provided by contractor to document grant deliverables, match, and incentives to be distributed, is incorporated by reference as a part of this agreement.

2. Compliance with Terms of the Ecology Center Grant CDFA Agreement 19-0807-001-SF. Contractor agrees to comply with all terms and conditions applicable to the Ecology Center's Grant Agreement with CDFA19-0807-001-SF. Contractor also agrees to comply with all applicable Federal and State regulations, including but not limited to, the Code of Federal Regulations (2CFR 230, 2CFR 200), Research Terms and Conditions (06/11) and NIFA Agency Specific Terms and Conditions (10/14) at http://www.nifa.usda.gov/business/awards/awardterms.html; General Provisions found in Title 2: 2CFR Part 400; 2 CFR Part 415; 2 CFR Part 416; 2 CFR Part 418; 2 CFR Part 422; 7 CFR 3015, 3016, 3019, Title 7: 7 CFR Part 3430, and allowable cost principles found in 2 CFR 220, 225, and 230 or Federal Acquisition Regulation 48 CFR 31.2 – all incorporated by reference and found at http://www.gpo.gov/fdsys/browse/collectionCfr.action?collectionCode=CFR Contractor also agrees to comply with the provisions of the Fair Employment and Housing Act (Gov. Code 12990 (a-f) and the applicable regulations promulgated there under California Code of Regulations, Title2, Section 7285. Ecology Center may withhold payment of funds for expenses deemed unallowable by CDFA. In the event that it is determined by the Ecology Center that a contractor has been paid for work and expenses that are deemed unallowable, Contractor will be required to refund to the Ecology Center all grant funds which were disbursed to the Contractor for unallowable expenses.

3. Compensation. Project Expenses. and Payment Terms. A budget that is agreed to by both parties is attached to this Agreement as Attachment A. Total expenses for Services, excluding incentives, shall not exceed **$510.00.** Contractor agrees to distribute **$3,750** in incentives on SNAP/CalFresh purchases as set forth in Attachment B. Total payment for Services and Incentives distribution under this Agreement shall not exceed **$4,260.**

Contractor may only distribute incentives at outlets that have been approved for participation by USDA's Food and Nutrition Services (FNS) via a Memorandum of Understanding (MOU). A signed MOU between CDFA and each outlet must be reviewed and approved by FNS prior to the outlet's participation. Distributing incentives at outlets not approved by FNS is a violation of this contract and Contractor will be required to repay grant funds for incentives distributed through unauthorized outlets.

Any changes to the attached budget must be agreed to in writing by the Ecology

Center prior to Contractor incurring costs exceeding the original budgeted amount of any line item. Contractor is entitled to reimbursement for reasonable expenses to the extent that such expenses are budgeted, necessary for the performance of the Services under this Agreement, and are considered allowable costs under applicable Federal and State regulations as outlined and noted in Section 2. of this contract agreement. Monthly invoices and back-up documentation shall be e-mailed in the provided Excel formats and submitted by the 7th day of the month following the reporting/invoicing month to receive payment within thirty (30) days of the Ecology Center's receipt of the invoice and all required backup documentation, with the exception that in no case shall the Contractor receive payment prior to the Ecology Center's receipt of payment from the Grantor for the period billed.

Monthly invoices must be submitted using the invoice, timesheet and mileage tracking templates provided by the Ecology Center and must adhere to all procedures and policies as required by the Ecology Center. Invoicing documents must include the dates and hours worked and the nature of the work performed in the description. Contractor shall attach original or scanned copies of receipts for all expenses billed under this Agreement. All original receipts, invoices, and other back-up documentation must be retained by the Contractor and kept on file, available on request for audit purposes. The invoice and all required documentation must be submitted before a payment will be processed. The Ecology Center may withhold payment on an invoice until all required information or documentation has been provided by Contractor. Monthly progress reports are due by the 7th day of the month following the reporting month and must include a description of the progress made on grant deliverables as described in Attachment A. Progress reports must also include a description of the amount of incentives distributed by market/site for the reporting month.

4. Independent Contractor. Contractor and the Ecology Center agree that Contractor is, and shall be, an independent contractor and not an employee or agent of the Ecology Center. Nothing in this Agreement shall be interpreted or construed as creating the relationship of employer and employee between the Ecology Center and Contractor and/or Contractor's approved employees or subcontractors.

   Contractor is responsible for all applicable legal and governmental obligations as an independent contractor, including, without limitation, all business licenses, worker's compensation and liability insurance requirements and the withholding and transmittal of all fees and taxes. Contractor shall not be an agent of the Ecology Center and shall not have any authority to sign agreements for the Ecology Center or to bind the Ecology Center to any agreements or other obligations.

Any agreement to be executed for the Ecology Center shall be presented to and be signed by a duly authorized representative of the Ecology Center.

It is expected that Contractor will work directly with the Ecology Center in performing the Services. However, if Contractor wishes to hire subcontractors in performance of the Services, Contractor must obtain the prior written consent of the Ecology Center and, in that event: (i) each approved subcontractor must agree to terms consistent with the terms of this Agreement; (ii) approved subcontractors shall be Contractor's sole responsibility; and (iii) Contractor shall be solely responsible for the approved subcontractors' compensation and for compliance with all applicable legal and tax requirements.

5. Taxes: If Contractor, or Contractor's organization, is not incorporated, the Ecology Center will inform Contractor of the total amount of payments made to Contractor on a calendar year basis during January of the following year and report such payments as required by law. Contractor shall be responsible for complying with all applicable national and local employment, income and other tax laws.

6. Indemnification: Contractor agrees to protect, indemnify, defend and hold harmless the Ecology Center and its directors, officers, employees and agents from and against any and all claims, demands, actions, judgments, fines, penalties, liabilities, losses, settlements, taxes, damages, injuries, costs or expenses (including, without limitation, attorneys' fees and all other fees and costs incurred in investigating or defending any claim or action), either directly or indirectly, which may be asserted against any of the foregoing persons by Contractor, Contractor's employees, agents or subcontractors, or third parties, in any manner related to, arising out of or resulting from:

   (a) Contractor's performance of the Services under this Agreement;
   (b) any failure of Contractor to perform its obligations under this Agreement;
   (c) any claim that the Services and/or Deliverables infringe the intellectual property rights of a third person;
   (d) any acts of Contractor beyond the scope of its authority under this Agreement;
   (e) any negligence, willful misconduct or other wrongful acts or omissions of Contractor, its employees, agents or subcontractors;
   (f) any injury, damage or death to Contractor, its employees, agents, subcontractors, partners or other representatives; or
   (g) any injury, damage or death to any third party.

7. Representations and Warranties: Contractor represents and warrants that: (a) Contractor has the full power to enter into and perform this Agreement and to make the grant of rights contained herein; (b) all Services performed hereunder

shall be performed in accordance with the Ecology Center's specifications and requirements and with all necessary care, skill and diligence; (c) the Deliverables will meet the description of Deliverables set forth in Attachment B; (d) upon delivery of each Deliverable, the Ecology Center will have marketable title to such Deliverable, free and clear of all liens and encumbrances; and (e) the use of the Deliverables for the purposes intended will not infringe upon or violate any rights of privacy, publicity, patents, copyrights or any other rights of any nature of any third party.

8. Confidentiality. Contractor acknowledges that Contractor will have access to proprietary and confidential information in order to perform specific duties and provide the Services. Contractor warrants that Contractor will not use or disclose any information received or obtained by Contractor in connection with Contractor's performance of the Services except as necessary to perform the Services. Contractor shall use at least the same degree of care, but no less than reasonable care, to avoid disclosure or use of the Ecology Center's information as Contractor employs with respect to its own Confidential Information of a like importance. This warranty shall not apply in any instance where the Ecology Center has expressly directed Contractor, in writing, to disclose information to a third party.

9. Legal Compliance. The laws of the State of California shall govern the interpretation of this Agreement. Any action to enforce this Agreement shall be brought in the Superior Court for the County of Alameda or in the U.S. District Court for the Northern District of California, San Francisco, California.

10. Assignment. Contractor may not assign, delegate or subcontract neither this Agreement nor any of its rights, duties or obligations under this Agreement without the prior written consent of the Ecology Center. Any purported assignment or delegation not consented to by the Ecology Center shall be void at the Ecology Center’s option and shall constitute a material breach of this Agreement.

11. Amendments and Waivers. Any supplement to or modification or waiver of any provision of this Agreement must be in writing and signed by authorized representatives of both Parties. A waiver by either party of any breach of this Agreement will not operate as a waiver of any other breach of this Agreement.

12. Notices. All notices required under this Agreement will be delivered in writing to the recipient's contact designated in the first paragraph of this Agreement, or to such other contact as designated in writing from time to time. Notices shall be by hand delivery, nationally recognized overnight courier, certified or registered mail, email, or facsimile and will be effective

upon receipt or when delivery is refused, whichever occurs sooner.

13. Records. All financial records and documentation pertaining to this contract, including incentives and match expenses, will be maintained for three years after the completion of the grant period. All original expense receipts, invoices, and other back-up documentation must be retained by the Contractor and kept on file, available on request for audit purposes.

If any provision of this Agreement is prohibited or is unenforceable, said provision shall be ineffective to the extent of such prohibition or unenforceability, without invalidating any of the remaining provisions of this Agreement.

This Agreement contains the entire agreement of the Parties and supersedes any and all previous agreements, which may have been made, whether orally or in writing.

WHEREFORE, the Parties have executed this Agreement as of the date(s) set forth below.

The Ecology Center

Signed: _____
Martin Bourque, Executive Director

Date: 1/5/2022

City of Redlands

Signed: _____
Mayor

Printed Name: Paul W. Barich

Date: _____

Attest:

_____
Jeanne Donaldson, City Clerk

CITY OF REDLANDS

MARKET MATCH BUDGET: JAN 1 2022 - DEC 31 2022

SECTION A: SALARIED PERSONNEL (DO NOT INCLUDE VOLUNTEERS)

PERSONNEL TITLE	NAME OF PERSONNEL PERFORMING WORK	PERSONNEL SALARY	PERCENT ALLOCATED ON PROJECT	CAL. MONTHS ON PROJECT	FRINGE RATE (IF APPLICABLE)	EXPENSE TOTAL (SAL & FB)	GRANT FUNDS	NON-FEDERAL MATCH	TOTAL	BUDGET JUSTIFICATION (NARRATIVE)	MATCH SOURCE (IF APPLICABLE)
						$0.00			$0.00		
						$0.00			$0.00		
						$0.00			$0.00		
						$0.00			$0.00		
						$0.00			$0.00		
SECTION A TOTAL						**$0.00**	$0.00	$0.00	**$0.00**		

SECTION B: HOURLY PERSONNEL (DO NOT INCLUDE VOLUNTEERS)

PERSONNEL TITLE	NAME OF PERSONNEL PERFORMING WORK	PERSONNEL HOURLY RATE	NUMBER OF HOURS ON PROJECT IN PERIOD	FRINGE RATE % (IF APPLICABLE)	EXPENSE TOTAL (SAL & FB)	GRANT FUNDS	NON-FEDERAL MATCH	TOTAL	BUDGET JUSTIFICATION (NARRATIVE)	MATCH SOURCE (IF APPLICABLE)
Program Specialist	Conrad Calbes	$29.50	150	55%	$6,858.75		$6,858.75	$6,858.75	(Admin) Conrad will be working 2 hours per week planning, marketing, outreach, attending webinars, data collecting, and invoicing. He will also distribute EBT and Market Match scrip at the Saturday Morning Farmers Market (2 hours) for 25 Saturdays a year (25 Saturdays x 2 hours) = 50 market + (2 admin x 50 weeks) = 150 hours	Cash match for is earned revenue from booth fees generated at both markets
Program Specialist	Shari Haynes	$28.10	50	55%	$2,177.75		$2,177.75	$2,177.75	For 12 months of the year, Shari will be swiping customer EBT cards and distributing EBT and Market Match scrip at the Saturday Morning Certified Farmers Market (2 hours). (25 Saturdays a year x 2 hours distributing Market Match = 50 hours a year)	Cash match for is earned revenue from booth fees generated at both markets
Program Aid	Seth Henry	$15.09	50	76%	$1,327.92		$1,327.92	$1,327.92	For 12 months of the year, Seth will be swiping customer EBT cards and distributing EBT and Market Match scrip at the Saturday Morning Certified Farmers Market (2 hours). (25 Saturdays a year x 2 hours distributing Market Match = 50 hours a year)	Cash match for is earned revenue from booth fees generated at both markets
Program Aid	Michael Gonzalez	$15.09	50	71%	$1,290.20		$1,290.20	$1,290.20	For 12 months of the year, Michael will be swiping customer EBT cards and distributing EBT and Market Match scrip at the Saturday Morning Certified Farmers Market (2 hours). (25 Saturdays a year x 2 hours distributing Market Match = 50 hours a year)	Cash match for is earned revenue from booth fees generated at both markets
Program Aid	Julie Schneblin	$15.09	50	78%	$1,343.01		$1,343.01	$1,343.01	For 12 months of the year, Julie will be swiping customer EBT cards and distributing EBT and Market Match scrip at the Saturday Morning Certified Farmers Market (2 hours). (25 Saturdays a year x 2 hours distributing Market Match = 50 hours a year)	Cash match for is earned revenue from booth fees generated at both markets
Program Aid	Steven Lujan	$15.09	50	73%	$1,305.29		$1,305.29	$1,305.29	For 12 months of the year, Steven will be swiping customer EBT cards and distributing EBT and Market Match scrip at the Saturday Morning Certified Farmers Market (2 hours). (25 Saturdays a year x 2 hours distributing Market Match = 50 hours a year)	Cash match for is earned revenue from booth fees generated at both markets
SECTION B TOTAL					**$7,444.16**	$0.00	$7,444.17	**7444.17**		

SECTION C: EQUIPMENT (GREATER THAN $5,000)

EQUIPMENT ITEM	EXPENSE $	GRANT FUNDS	NON-FEDERAL MATCH	TOTAL	BUDGET JUSTIFICATION (NARRATIVE)	MATCH SOURCE (IF APPLICABLE)
		N/A		$0.00		
SECTION C TOTAL	$0.00	**$0.00**	**$0.00**	**$0.00**		

SECTION D: TRAVEL

TYPE OF TRAVEL (DROPDOWN MENU)	EXPENSE DESCRIPTION	COST PER UNIT	NUMBER OF UNITS	EXPENSE $	GRANT FUNDS	NON-FEDERAL MATCH	TOTAL	BUDGET JUSTIFICATION (NARRATIVE)	MATCH SOURCE (IF APPLICABLE)
				$0.00			$0.00	No travel, conference will be virtual	
				$0.00			$0.00		
				$0.00			$0.00		

SECTION D TOTAL				**$0.00**	$0.00	$0.00	**$0.00**	

SECTION E: PARTICIPANT/TRAINING COSTS (EXCLUDING INCENTIVES)									
TYPE OF TRAINING COST (DROPDOWN MENU)	**EXPENSE DESCRIPTION**	**COST PER UNIT**	**NUMBER OF UNITS**	**EXPENSE $**	**GRANT FUNDS**	**NON-FEDERAL MATCH**	**TOTAL**	**BUDGET JUSTIFICATION (NARRATIVE)**	**MATCH SOURCE (IF APPLICABLE)**
				$0.00			$0.00		
				$0.00			$0.00		
				$0.00			$0.00		
SECTION E TOTAL				**$0.00**	$0.00	$0.00	**$0.00**		

SECTION F: OTHER DIRECT COSTS									
SUBSECTION & EXPENSE TYPE (DROPDOWN MENU)	**EXPENSE DESCRIPTION**	**COST PER UNIT**	**NUMBER OF UNITS**	**EXPENSE $**	**GRANT FUNDS**	**NON-FEDERAL MATCH**	**TOTAL**	**BUDGET JUSTIFICATION (NARRATIVE)**	**MATCH SOURCE (IF APPLICABLE)**
2. Publication Costs	Social media advertisement for customer outreach	$50.00	3	$150.00	$150.00		$150.00	Social Media outreach for Market Match attracting targeted local customers 3 ads @ $50 each = $150	
2. Publication Costs	Market Match Flyers for customer outreach	$0.16	1,000	$160.00	$160.00		$160.00	Outreach materials will be distributed at both markets and at local community organizations, including YMCA, Community Centers, Senior Centers, Library, Food Pantries and more to inform CalFresh customers about the incentive program at the Redlands Farmers Markets	
1. Materials & Supplies	Market Match Scrip	$0.20	1,000	$200.00	$200.00		$200.00	Scrip tokens will be used to distribute Market Match funds during both markets	
				$0.00			$0.00		
				$0.00			$0.00		
				$0.00			$0.00		
				$0.00			$0.00		
				$0.00			$0.00		
SECTION F TOTAL				**$510.000**	$510.00	$0.00	**$510.00**		

SECTION H: INDIRECT COSTS					
	INDIRECT RATE (IF APPLICABLE)	**MTDC**	**TOTAL GRANT INDIRECT**	**TOTAL INDIRECT**	
SECTION H TOTAL		$2,130.00	**$0.00**	**$0.00**	

SECTION I: TOTAL DIRECT & INDIRECT COSTS				
	TOTAL GRANT FUNDS	**TOTAL NON-FEDERAL MATCH**	**TOTAL PROJECT BUDGET**	
SECTION I TOTAL	**$4260.00**	**$7,444.17**	**$11,704.17**	**All expenses (grant and match) must directly benefit and be specifically identifiable with approved Market Match project objectives.**

SECTION E: TOTAL INCENTIVES					
	GRANT FUNDS	**NON-FEDERAL MATCH**	**TOTAL**	**BUDGET JUSTIFICATION (NARRATIVE)**	**MATCH SOURCE (IF APPLICABLE)**
DOLLAR AMOUNT OF INCENTIVES TO DISTRIBUTE	$3,750.00		$3,750.00	We estimate approximately 5 customers per market day, receiving $15 incentives each. 5 x $15 x 50 markets = $3,750	

NON-INCENTIVE TO INCENTIVE FUNDING			
	NON-INCENTIVE FUNDS	INCENTIVE FUNDS	INCENTIVES AS PERCENT OF TOTAL BUDGET
GRANT FUNDS	$510.00	$3,750.00	88%
TOTAL BUDGET	$7954.17	$3,750.00	32%

Attachment B: Scope of Work

Contractor Name**: City of Redlands**
Start Date: January 1, 2022
End Date: December 31, 2022

Distribution of Incentives

Contractor will

- Distribute **$3,750** Market Match (MM) incentives to SNAP customers at a minimum of **1** Ecology Center-approved Certified Farmers' Markets or farm-direct sites between January 2022 and December 2022;
- Provide incentives that are funded by GusNIP federal dollars or non-federal match *only* for SNAP/CalFresh purchases;
- Provide incentives that are funded by GusNIP federal dollars or non-federal match *only* at outlets (sites) that have been approved for participation by USDA's Food and Nutrition Services (FNS) via a Memorandum of Understanding (MOU). A signed MOU between CDFA and each outlet must be reviewed and approved by FNS prior to the outlet's participation. Distributing incentives at outlets not approved by FNS is a violation of this contract and Contractor will be required to repay grant funds for incentives distributed through unauthorized outlets.
- Provide the incentives as a dollar-for-dollar SNAP match, up to contractor-set maximum per household, per day;
- Produce or reuse all MM scrip needed at the markets served by Contractor. In the case where new scrip is produced or printed, the design must first be approved by the EC's Market Match Program Coordinator, Program Manager, Program Director or Executive Director prior to production;
- Market Match scrip must be restricted to the purchase of fresh, California-grown fruits and vegetables or plant starts that produce food only at the Certified Farmers' Market or other approved Market Match site. No change is to be given on Market Match scrip. 100% of the value of the scrip turned in by the farmers/growers/vendors must be paid at 100% of the value to said farmers/growers/vendors.

Administration and Reporting

Contractor will

- Hire and maintain sufficient staff or volunteers to execute the program as detailed;
- Oversee, track, evaluate, manage, report on any and all Market Match activities under the contract that Contractor is providing or subcontracting;
- Turn in monthly invoices, back-up documentation and monthly reports no later than the 7th of each month following the month previous or as requested by the Ecology Center;
- Attend 4-6 Consortium calls/webinars. If Contractor is not able to attend for any reason, they will be responsible to tell Ecology Center Program Manager in advance, and read minutes or watch webinar recording following the webinar.
- Attend the annual virtual/online Market Match Face-to-Face Meeting/Conference.

Systems, Tracking, Evaluation

Contractor will work with the Ecology Center to

- Administer a unified data collection and tracking mechanism for Market Match participants in order to track all monthly reporting and evaluation metrics accurately and in a timely fashion;
- Provide input, feedback, and cooperation on the development, implementation, and execution of State and National evaluation metrics, tools, and systems;
- Carefully track federal and non-federal match budget spending and work with the Ecology Center on any necessary Line Item Shift adjustments or Grant reporting requirements.

Contractor will

- Carefully and completely track, input, and report on all program metrics that are deemed useful/needed by the Ecology Center. These monthly reports will be provided by or before the 7th of each month following the month previous;
- Cooperate fully and support data collection and analysis conducted through Ecology Center and California Department of Food & Agriculture's required evaluation of the GusNIP project, and any national evaluation conducted through the GusNIP Training, Technical Assistance, Evaluation and Information Centers (NTAE).

Promotions & Outreach to Market Match Eligible Customers

- All Market Match promotional and outreach materials and signage must be approved by the EC's Market Match Program Coordinator, Program Manager, Program Director or Executive Director prior to printing and distribution;
- All promotional and outreach materials and signage must promote the Market Match program and align with program branding, messaging, look and feel.

Contractor will

- Produce locally-focused, MM branded, outreach materials and advertising in accordance with approved budget and budget justification;
- Partner with local media, social service agencies, and community based organizations to distribute outreach materials to promote the purchase of fruits and vegetables to SNAP/CalFresh shoppers at Certified Farmers' Markets and other approved Market Match sites.

Contractor will work with the Ecology Center to

- Improve and build upon uniform MM language and statewide materials;
- Participate in any and all statewide, regional or locally focused centralized promotions or outreach strategies executed by the Ecology Center on behalf of the statewide MM program.

Attachment C
DEBARMENT CERTIFICATION FORM

The Contractor certifies that, neither the Contractor firm nor any owner, partner, director, officer, or principal of the Contractor, nor any person in a position with management responsibility or responsibility for the administration of federal funds:

(a) Is presently debarred, suspended, proposed for debarment, and declared ineligible or voluntarily excluded from covered transactions by any federal or state department/agency;

(b) Has within a three-year period preceding this certification been convicted of or had a civil judgment rendered against it for: commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public transaction or contract (federal, state, or local); violation of federal or state antitrust statutes; or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(c) Is presently indicted for or otherwise criminally or civilly charged by a governmental entity (federal, state, or local) with commission of any of the offenses enumerated in paragraph (b) above; or

(d) Has within a three-year period preceding this certification had one or more public transactions or contracts (federal, state, or local) terminated for cause or default.

The Contractor further certifies that it shall not knowingly enter into any transaction with any subcontractor, material supplier, or vendor who is debarred, suspended, declared ineligible, or voluntarily excluded from covered transactions by any federal or state department/agency.

Date: _____

By _____

Authorized Signature for Contractor

_____

Printed Name and Title

CITY OF REDLANDS
REQUEST FOR ADDITIONAL APPROPRIATION

DATE OF REQUEST: 1/18/2021

FINANCE USE ONLY
TRANSACTION NO:
ACCOUNTING PERIOD:

An additional appropriation is hereby requested as follows:

Department: Facilities & Community Services

EXPENDITURE APPROPRIATION INCREASE (if applicable)				
Account Description	**Orgkey**	**Object Code**	**Job Ledger (If applicable)**	**Amount**
Full Time Salaries	200300	5001	C300005	$ 510.00
Food	200300	7807	C300005	$ 3,750.00
			$	$ 4,260.00

REVENUE APPROPRIATION INCREASE (if applicable)				
Account Description	**Orgkey**	**Object Code**	**Job Ledger (If applicable)**	**Amount**
State Grant	200300	4401	C300005	$ 510.00
Federal Grant	200300	4407	C300005	$ 3,750.00
			$	$ 4,260.00

JUSTIFICATION: CY 2021 participation in the California Market Match Grant awarded through the Ecology Center to fund certified farmers' market activities at the City;s certified farmers market.

Requested By: Chris Boatman
Department Head

Recommended By Finance Director:

Yes ✓ No Signed

Recommended: Charles M Duggan
City Manager

Comments:

Approved by City Council:

Date:

Signed:
City Clerk

"A City That Works"

City Council/Financing Authority Meeting **I. 10.**

DATE: 01/18/2022

TO: Honorable Mayor and City Council Members

SUBJECT: Approve recommendation for Council District 2 appointment to the Citizens' Measure T Oversight Committee (Mayor Pro Tem Tejeda)

MOTION:

I move to appoint Edward Ico to serve the remainder of an unexpired term representing Council District 2 on the Citizens' Measure T Oversight Committee ending April 20, 2025.

RECOMMENDATION:

It is recommended by Mayor Pro Tem Tejeda that the City Council consider this Council District 2 appointment to the Citizens' Measure T Oversight Committee.

DISCUSSION:

A vacancy exists on the Citizen's Measure T Oversight Committee due to the resignation of Council District 2 Committee Member Eddie Sanchez. Committee Member Sanchez resigned from the committee due to no longer residing in Council District 2. The Oversight Committee consists of seven (7) members. Two members shall represent the City's employee bargaining units; one representing the public safety bargaining units and one representing the remaining non-public safety bargaining units. The bargaining unit members shall be appointed to a one-year term by the Mayor with approval of the City Council. The five (5) remaining citizen members shall each represent a Council District and be appointed by the Council Member of that corresponding district with approval of the City Council. It is the recommendation of Mayor Pro Tem Tejeda who represents Council District 2 that the City Council consider the appointment of Edward Ico to the Citizens' Measure T Oversight Committee.

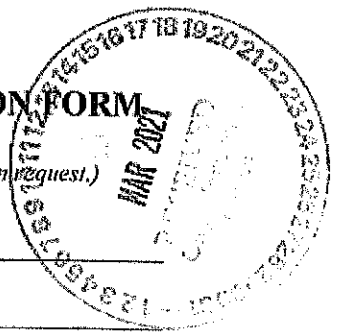
SUBMITTED BY:
Janice McConnell, Assistant City Manager

REVIEWED BY:
Charles M. Duggan, Jr, City Manager
Daniel J. McHugh, City Attorney

Attachments

Edward Ico Application

CITY OF REDLANDS
MEASURE T OVERSIGHT COMMITTEE APPLICATION FORM



(Please note that this form is a public record that may be subject to disclosure upon request.)

Name Edward Ico

Addres Redlands, CA 92374

Telephone (Work)_____ (Cell / Home)_____

Email_____

Occupation Placement Services For Adult And Elderly

Council District 2 https://www.cityofredlands.org/pod/election-district-maps

Reasons for desiring to serve – relevant experience and qualifications:

I was born and raised here in Redlands and have been a resident for the past 33 years. I've watched this town go from beautiful orange groves to a thriving community. As a first generation Filipino American, I would bring a different prospective to the committee and help influence positive change. My occupation and life experience would allow me to be that voice for the citizens and asian community here in the city of Redlands.

Signature _____ **Date** 3/21/21

If appointed, please be advised that all City commissioners and committee/board members must complete mandatory harassment prevention training consistent with the requirements of Assembly Bill No. 1825. (Resolution No. 7206 adopted July 26, 2012)

Two References: (Please do not include Councilmembers or City Staff)

(1) Amber Parlet (2) Bill Barrios

Telephone _____ Telephone _____

Return Application to: Office of the City Council, C/O Office of the City Manager, Suite 200, 35 Cajon Street, PO Box 3005, Redlands, CA 92373, OR by email to RedlandsOCM@cityofredlands.org

You will be notified of appointments by the City Council. Your application will be retained for one year. Please note that this form is a public record that may be subject to disclosure upon request.

3/21/2021 3 Verified

"A City That Works"

City Council/Financing Authority Meeting **J. 1.**

DATE: 01/18/2022

TO: Honorable Mayor and City Council Members

SUBJECT: Video Series: Working for You: Making Redlands a Better Place (Public Information Officer Baker)

DISCUSSION:

For this evening's City Council meeting, staff will present a new video from the video series “Working for You: Making Redlands a Better Place.” The series highlights one employee each month, from various departments and divisions, specifically describing how that employee’s job fits into the larger mission of the City to improve residents’ lives and make Redlands a better place to live. The videos are available for viewing on the City’s website and social media platforms in addition to being shown in rotation on Redlands TV.

SUBMITTED BY:
Janice McConnell, Assistant City Manager

REVIEWED BY:
Charles M. Duggan, Jr., City Manager
Carl Baker, Public Information Officer

"A City That Works"

City Council/Financing Authority Meeting **J. 2.**

DATE: 01/18/2022

TO: Honorable Mayor and City Council Members

SUBJECT: Recognition of military service members whose banners have been retired from the Redlands Hometown Heroes Military Banner Program (Assistant City Manager Boatman)

DISCUSSION:

The Redlands Hometown Heroes Military Banner Recognition Program (Military Banner Program) recognizes and honors Redlands residents and their immediate family members who are actively serving in, or have been honorably discharged from, the United States Armed Forces.

In accordance with Resolution No. 8146, City staff provide administrative support services to the Redlands Hometown Heroes Foundation related to the Military Banner Program.

With appreciation for the sacrifice associated with military service to our country and in recognition of the embodiment of the pride we all have in our young men and women in uniform, the City Council of the City of Redlands does hereby officially commemorate the following military service members whose banners have been retired from the Military Banner Program.

Andrew Felarca, Navy - Banner flown over the streets of Redlands from May 2013 to March 2021

Anthony Garcia, Army - Banner flown over the streets of Redlands from May 2012 to March 2021

Skylar Nieman, Army - Banner flown over the streets of Redlands from May 2012 to March 2021

Jacob Rechsteiner, Army - Banner flown over the streets of Redlands from November 2012 to March 2021

Alexander Tovar, Marines - Banner flown over the streets of Redlands from

November 2012 to March 2021

SUBMITTED BY:
Assistant City Manager Boatman

"A City That Works"

City Council/Financing Authority Meeting **J. 3.**

DATE: 01/18/2022

TO: Honorable Mayor and City Council Members

SUBJECT: Discussion and possible action relating to the continuation of, and appointments to, the Council Ad Hoc COVID-19 Subcommittee (Mayor Pro Tem Tejeda)

DISCUSSION:

In 2020, the City Council formed an Ad Hoc Committee comprised of the then Mayor Foster and Mayor Pro Tem Davis to provide guidance to staff on matters relating to the COVID-19 pandemic. In light of the recent retirement of Council Member Foster, a vacancy exists on the committee. If the City Council wishes to continue having an Ad Hoc committee for this purpose, the Council may consider making new appointments to the committee at this evening's meeting.

SUBMITTED BY:
Mayor Pro Tem Tejeda

"A City That Works"

City Council/Financing Authority Meeting **J. 4.**

DATE: 01/18/2022

TO: Honorable Mayor and City Council Members

SUBJECT: Discussion and possible action regarding the renaming of Shoppers Lane (Council Member Davis)

DISCUSSION:

This item is being put forth to City Council to allow for discussion and possible action regarding the renaming of Shoppers Lane. The initial proposal by Council Member Davis is to consider changing the street name to Al Harris Ave.

"A City That Works"

City Council/Financing Authority Meeting **J. 5.**

DATE: 01/18/2022

TO: Honorable Mayor and City Council Members

SUBJECT: Discussion and possible action relating to the holding of virtual City Council meetings in compliance with AB 361, and consideration of Resolution No. 8291 (Council Member Davis)

MOTION:

I move to approve Resolution No. 8291.

DISCUSSION:

The purpose of this agenda item is to allow the City Council the opportunity to discuss and take possible action regarding the holding of virtual City Council meetings. Assembly Bill 361, signed into law on September 16, 2021, amends Government Code section 54953 to provide the authority and specific requirements for public agencies to hold virtual meetings during a proclaimed state of emergency and remain in compliance with the Brown Act.

Should my colleagues agree to hold virtual meetings, staff has prepared Resolution No. 8291 to authorize remote teleconference meetings by the City Council and all boards, commissions and committees of the City in accordance with Assembly Bill 361.

SUBMITTED BY:
Council Member Denise Davis

Attachments

Reso. 8291 Teleconference Meeting

RESOLUTION NO. 8291

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF REDLANDS AUTHORIZING REMOTE TELECONFERENCE MEETINGS BY THE CITY COUNCIL AND ALL BOARDS, COMMISSIONS, AND COMMITTEES OF THE CITY IN ACCORDANCE WITH ASSEMBLY BILL 361 (2021) FOR A PERIOD OF THIRTY DAYS

WHEREAS, COVID-19 (also known as the "Coronavirus Disease") is a respiratory disease that has spread across the globe, with thousands of confirmed cases in California, including within the City of Redlands ("City"); and

WHEREAS, on January 31, 2020, the United States Secretary of Health and Human Services declared a public health emergency based on the threat caused by COVID-19, and the President of the United States issued a proclamation declaring a national emergency concerning COVID-19 beginning March 1, 2020; and

WHEREAS, in response to COVID-19, the Governor of the State of California issued a proclamation of a state of emergency on March 4, 2020; and

WHEREAS, the City Council of the City adopted a proclamation of a local emergency related to the COVID-19 virus on March 17, 2020; and

WHEREAS, the City is committed to preserving and fostering public access, transparency, observation, and participation in meetings of the City Council and City boards, commissions, and committees (hereafter collectively referred to as "legislative bodies;") and

WHEREAS, all meetings of the City Council and legislative bodies are open and public as required by the Ralph M. Brown Act ("Brown Act") (Government Code section 54950 *et seq*.), so that any member of the public may attend, observe, and participate in a meaningful way; and

WHEREAS, Government Code section 54953(b)(3) of the Brown Act allows a local legislative body to hold public meetings by teleconference and to make public meetings accessible telephonically or otherwise electronically to all members of the public seeking to attend and to address the local legislative body, as long as the following requirements are met:

1. Each teleconference location from which a member is participating is noticed on the agenda;
2. Each teleconference location is accessible to the public;
3. Members of the public must be able to address the body at each teleconference location;
4. At least one member of the legislative body must be physically present at the location specified in the meeting agenda; and
5. During teleconference meetings, at least a quorum of the members of the local body must participate from locations within the local body's territorial jurisdiction; and

WHEREAS, the Brown Act, as amended by AB 361 (2021), at Government Code section 54953(e), allows for remote observation and participation in meetings by members of a legislative body and members of the public without compliance with the requirements of Government Code section 54953(b)(3), subject to certain conditions; and

WHEREAS, the initial required condition of Government Code section 54953(b)(3) is a declaration of a state of emergency by the Governor pursuant to the California Emergency Services Act at Government Code section 8625, proclaiming the existence of conditions of disaster or of extreme peril to the safety of persons and property within the state and within the boundaries of the City, caused by conditions as described in Government Code section 8558; and

WHEREAS, the Governor's proclamation of a state of emergency includes area within the jurisdictional boundaries of the City; and

WHEREAS, Government Code section 54953(e)(3)(A-B), added by AB 361, provides an alternative to having public meetings in accordance with Government Code Section 54953(b)(3) when the City Council has reconsidered the circumstances of the COVID-19 state of emergency and that the following circumstances exist:

1. The state of emergency as a result of COVID-19 continues to directly impact the ability of the members of City Council and the members of the City's boards, commissions, and committees to meet safely in person; and

2. The State of California and the County of San Bernardino continue to recommend measures to promote social distancing; and

WHEREAS, Government Code Section 54953(e) further requires that state or local officials have imposed, or recommended, measures to promote social distancing, or the legislative body finds that meeting in person would present an imminent risk to the health or safety of attendees; and

WHEREAS, such conditions now exist in the City in that (i) state and local officials do recommend social distancing measures, and (ii) emergency conditions evidenced by COVID-19 and its variants create ongoing COVID-19 cases, hospitalizations, and deaths, such that meeting in person would present imminent risk to health or safety of attendees; and

WHEREAS, the City Council affirms that it will allow for observation and participation by City Council members as well as board, commission, and committee members and the public, via Zoom, or other appropriate technology, in an effort to protect the constitutional and statutory rights of all attendees; and

WHEREAS, Government Code Section 54953 (e)(3) further requires that the City Council review the need and make findings for continuing the teleconferencing as authorized by AB 361 at least once every thirty days until the Governor terminates the state of emergency;

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF REDLANDS HEREBY RESOLVES AS FOLLOWS:

Section 1. The above recitals are true and correct and are incorporated herein by this reference.

Section 2. The City Council finds that the state of emergency conditions related to COVID-19 as set forth in the Governor's and City's proclamations of emergency are on-going.

Section 3. The City Council further finds that State and county officials recommend social distancing conditions causing imminent risk to attendees as described above exist.

Section 4. The City Council hereby recognizes and affirms the existence and conditions of a state of emergency as proclaimed by the Governor, and the City, and affirms, authorizes, and proclaims the existence of a local emergency throughout the City.

Section 5. The City Council finds that the state of emergency as a result of COVID-19 continues to directly impact the ability of members of the City Council and the members of the City's boards, commissions, and committees to meet safely in person and such fact creates an imminent health risk to such members.

Section 6. The City Council hereby authorizes the City Council, and all of the boards, commissions, and committees of the City, to conduct their meetings without compliance with Government Code section 54953(b)(3), and to instead comply with the remote meeting requirements as authorized by Government Code section 54953(e).

Section 7. The City Manager and City Clerk are authorized and directed to take all actions reasonably necessary to carry out the intent and purpose of this Resolution, including, conducting open and public meetings remotely in accordance with Government Code section 54953(e), and other applicable provisions of the Brown Act, for all City Council meetings, and all boards, commissions, and committee meetings of the City.

Section 8. This Resolution shall take effect immediately upon its adoption and shall be effective until either (i) February 17, 2022 or (ii) such time as the City Council adopts a Subsequent Resolution in accordance with Government Code section 54953(e)(3) to extend the time during which the City Council and all City legislative bodies may continue to meet remotely, without compliance with Government Code section 54953(b)(3), but otherwise as permitted by Government Code section 54953(e).

ADOPTED, SIGNED AND APPROVED this 18th day of January, 2022.

_____
Paul T. Barich, Mayor

ATTEST:

_____
Jeanne Donaldson, City Clerk

I, Jeanne Donaldson, City Clerk of the City of Redlands, do hereby certify that the foregoing Resolution was duly adopted by the City Council at a regular meeting thereof held on the 18th day of January, 2022, by the following vote:

AYES:
NOES:
ABSENT:
ABSTAINED:

_____
Jeanne Donaldson, City Clerk

"A City That Works"

City Council/Financing Authority Meeting **K. 1.**

DATE: 01/18/2022

TO: Honorable Mayor and City Council Members

SUBJECT: **PUBLIC HEARING** to consider the following items:
(Mayor to declare meeting open as a public hearing)

1. Consideration of a Notice of Exemption pursuant to Section 15061(b)(3) of the California Environmental Quality Act Guidelines.

2. Ordinance No. 2930 (Ordinance Text Amendment No. 360) A proposal to amend Title 18 of the Redlands Municipal Code by modifying Chapter 18.92.080(B) pertaining to developments standards in the C-3, General Commercial District to allow residential density in accordance with the existing provisions of Measure "U," and modify the parking requirements for mixed use development and multifamily-attached residential development projects located within one-half mile of a train station.

3. Resolution No. 8274 Specific Plan Amendment No. 22 to the Downtown Specific Plan (Specific Plan No. 45)– A proposal to amend Section III, Part C (Property Development Standards), sub-sections 1.7 and 3.7 of Specific Plan No. 45, to modify the on-site parking requirements for mixed use development and multifamily attached residential development projects located within one-half mile of a train station.
(Development Director Desatnik)

PROCEDURE FOR PUBLIC HEARING:

1. Mayor declares the meeting open as a public hearing.
2. Mayor calls upon Department Director for report.
3. Mayor calls for questions/comments from members of the City Council.
4. Mayor calls for comments/questions/testimony from members of the public (3 minutes per speaker).
5. Mayor calls upon City Clerk to note any written comments received.

6. Mayor closes the public hearing.
7. City Council considers the motion and votes.

MOTION(S):

Mayor requests the City Clerk to read the title of Ordinance No. 2930;

1. I move to waive further reading of Ordinance No. 2930 and to introduce Ordinance No. 2930; and

2. I move that the City Council adopt Resolution No. 8274.

RECOMMENDATION:

The Planning Commission reviewed the proposed code amendment on October 12, 2021, and voted 4 to 1 recommending approval to the City Council. The Commission asked questions about recent parking studies (published research in peer-reviewed journals) that have been conducted in transit-oriented developments around the nation in recent years. Studies have found that typical parking rates derived from the Institute of Transportation Engineers parking generation manual tend to greatly overestimate the amount of parking actually needed in transit-oriented developments. The Commission discussed the relevance of the city's existing parking standards in RMC Title 18 (Zoning Regulations) to mixed use projects and transit-oriented developments around the train stations.

DISCUSSION:

A) Background

General Plan: The 2035 General Plan was adopted on December 5, 2017, and includes more than 100 new Policies and Actions that are derived from an innovative organizing principle known as the Transit Village strategy and concept. This new General Plan has ushered in a new era for modest growth and development in the city by rejecting practices that have resulted in unabated urban sprawl, and instead encourage new infill development in the interior core areas of the city and around the three new train stations in particular. This infill development is to emphasize transit-oriented development, of which compact mixed uses (residential combined with commercial uses) play a key role.

Mixed Uses: In 2006, the City Council adopted General Plan Amendment No. 111 and Ordinance Text Amendment No. 311 to allow for mixed use projects in the downtown area within the Commercial land use designation. The General Plan Amendment added Policy 4.61(e) to the 1995 General Plan to specifically encourage mixed use projects integrating retail, restaurant, office, and urban

housing uses at a density up to the high-density residential standard as established by Measure “U.” The corresponding Ordinance Text Amendment changed the General Commercial (C-3) section of the code to require a Conditional Use Permit for mixed use projects, as well as allow for modified (shared) parking arrangements within mixed use projects to make the most efficient and cost-effective use of the land area. The staff report states the goal was to create an attractive urban village environment where people could gather to shop, dine, work, socialize, and live. Regarding the residential component, the aim was to strive for high-density housing, either in a vertical design (urban housing above commercial uses) or horizontal mixed use (urban housing alongside commercial uses at ground-level). The downtown was viewed as the center of activity for surrounding areas and neighborhoods, and to foster its future long-term sustainability and vibrancy, the development of mixed uses was viewed as the means to accomplish that.

Mixed uses were historically present in downtown Redlands, as well as a common urban configuration in many town centers throughout the nation prior to WWII and widespread ownership of automobiles. Some historical buildings in downtown Redlands included mixed uses. One extant example is the Fox Theatre building at the northwest corner of Cajon Street and Vine Street, which has several apartments on the upper floors above retail shops at ground-level. In addition to convenient access to transportation and services, downtown dwellings can reduce the cost of living and make housing more affordable, plus some people prefer to live near the vibrancy and activity of a downtown district.

Shared Parking Regulations: The existing parking regulations in RMC Section 18.164.325 currently allow for shared parking arrangements in the C-3 and C-4 zones as well as the Downtown Specific Plan, but those provisions are not frequently utilized. However, there have been no applications for mixed use projects in the downtown area or other core areas of the city for at least 15 years (since OTA No. 311 was adopted). The financial crisis of 2007 – 2008 likely contributed to the lack of development applications during that time frame. However, prior to 2006 – 2007, there had not been any development applications for mixed use projects in the downtown for the preceding decades. This suggests the existing zoning or parking regulations may in some way act as constraints or deterrents on certain types of private development projects in Redlands (e.g., minimum parking requirements, or the entitlement process, etc.). The type of mixed use development with higher density residential units envisioned for the downtown area has failed to materialize over the previous 15 years under the existing zoning standards.

B) Analysis

The Downtown Specific Plan encompasses the northerly half of the downtown area (generally between Redlands Blvd. on the south side, Interstate 10 freeway on the north side, Church St. on the east side, and Texas St. on the west side). The General Commercial, C-3 zone encompasses the southerly half of the

downtown area (generally south of Redlands Blvd., between 10th St. to the east and Texas St. to the west). See maps in Attachment A and Attachment B for reference.

For clarity, the following discussion will address separately the two code text amendments to the General Commercial (C-3) development standards: RMC Section 18.92.080(B)(1) pertaining to the residential density; and RMC Section 18.92.080(B)(2) pertaining to parking requirements for mixed use projects located within one-half mile of a train station. In addition, the proposed amendment to the Downtown Specific Plan will modify the minimum parking requirements for mixed use projects and multifamily residential projects within a one-half mile radius of a train station. This will match the proposed amendment for the C-3 district.

The proposed amendments will reduce ambiguity concerning density allowed in the C-3, General Commercial zone for the downtown area and modify on-site parking standards for mixed-use projects and residential projects located within one-half mile of a train station to better match the actual parking needs of transit-oriented developments.

Underlined font (sample) indicates added text, and strikethrough font (~~sample~~) indicates deleted text.

1) Zoning Ordinance Text Amendment

The C-3, General Commercial District includes a portion of the downtown area on the south side of Redlands Boulevard between East Ninth Street (east side) and Texas Street (west side). The area to the north of Redlands Boulevard to the Interstate 10 freeway is within the Downtown Specific Plan (see Attachment A and Attachment B).

Residential Density: The proposed Ordinance includes amending subsection B in RMC Section 18.92.080 pertaining to residential uses in the C-3 district. For projects that have been determined to be exempt from the "Principles of Managed Development" (section 4.2.A) of the City's General Plan, pursuant to section 4.2B, for the reason that the project is determined to be development directly related to a proposed rail station, the floor area ration shall govern the density/intensity of the project.

Parking for Mixed Use Projects: The proposed Ordinance includes the changes to RMC Section 18.92.080(B) pertaining to parking requirements for residential and mixed-use projects within a one-half mile of a train station. The parking requirements for such projects will be based on the following standards:

- Units up to 999 sq.ft.: 1.0 spaces per unit
- Units 1,000 to 1,499 sq.ft.: 1.5 spaces per unit
- Units 1,500 sq.ft. or more: 2.0 spaces per unit

- Guests: .25 spaces per unit
- Live/Work units up to 1,499 sq.ft.: 1.0 spaces per unit
- Live/Work units 1,500 sq.ft. or more: same as commercial requirements
- Ground floor commercial: 1 space per 300 sq.ft. of gross ground floor building area
- Upper floor commercial: 1 space per 350 sq.ft. of gross upper floor building area

The typical parking requirements imposed on single use developments in suburban areas are often found to be excessive when applied to mixed use developments in denser and more compact downtown districts and Transit-Oriented Development (TOD). A significant amount of research on parking requirements in TODs has been published in academic and peer-reviewed journals in recent years, and has found that using typical zoning code standards results in vastly overestimating parking requirements than are actually needed (anywhere from 30% to 50% excess). This is because many municipal zoning codes use rates suggested by the *Parking Generation Manual* by the Institute of Transportation Engineers (ITE), or they copied comparable cities which in turn were based on ITE rates. Essentially, this means that most parking formulas used by cities have been based on single uses in sprawling suburban areas, without taking into consideration many factors that can substantially reduce parking demand and trip generation in transit-oriented areas or downtown business districts (factors such as transit availability, pedestrian friendly design, mix and density of land uses, multi-stop trip activity, shared parking, etc.).

In the Parking Generation Manual, ITE acknowledges the limitations of the parking generation rates with the following disclaimer in the introduction.

> Most of the data currently available are from suburban sites with isolated single land uses with free parking. More parking data are needed in order to understand the complex nature of parking demand. As future studies are submitted, the findings will provide a basis to assess **factors such as type of area, parking pricing, transit availability and quality, transportation demand management plans, mixing of land uses, pedestrian friendly design, land use density, trip chaining/multi-stop trip activity** [emphasis added], the split between employee and visitor parking, the split between long-term and short-term parking, and other issues in more detail.

In the Trip Generation Manual (Vol. 1), ITE acknowledges the limitations of the trip generation rates with the following disclaimer in the preface.

> The average trip generation rates in this report represent weighted averages from studies throughout the United States and Canada since the 1960s. Data were primarily collected at suburban locations having little or no transit service, nearby pedestrian amenities, or travel demand management (TDM) programs. **At specific sites, the user may wish to modify trip generation rates presented in this**

document to reflect the presence of public transportation service, ridesharing, or other TDM measures, enhanced pedestrian and bicycle trip-making opportunities, or other special characteristics of the site or surrounding area. [emphasis added]

Recent studies that were focused on parking generation and trip generation in TODs near train stations have found substantial reductions to vehicle trip generation as well as lower requirements for on-site parking (see Attachment C for a summary). Trip generation reductions were found ranging from 25% to 50% less than ITE's published rates for single-use developments in suburban settings. For example, TODs near stations in denser urban areas (such as the Los Angeles area, Oakland, Portland, and others) have seen reductions of approximately 40% to 50% trip generation as a result of their compact, higher density, mixed use projects within TODs. Parking requirements are similarly affected and TODs often require far less on-site parking than the rates suggested in the ITE manual. TODs around train stations in less dense suburban areas have seen reductions of approximately 25% to 40% to trip generation, as well as less parking needed on-site. Therefore, it is reasonable to believe the trip reduction and parking reduction for TODs in an area such as Redlands (lower density compared to Los Angeles, Pasadena, or Glendale) could reasonably be expected to generate 25% to 30% less vehicle trips and have similar reductions to on-site parking needs.

2) Amendment to the Downtown Specific Plan

The proposed Resolution will change the Downtown Specific Plan (Specific Plan No. 45 or "SP 45"), Section III-C, pertaining to Property Development Standards. This will establish consistency with the changes to on-site parking requirements described above. In SP 45, residential projects and mixed use projects are Permitted uses and would be subject to review through a Commission Review & Approval permit (not a Conditional Use Permit as required by the C-3 and C-4 districts). Some future projects may also require City Council review in accordance with Measure "U," if applicable.

Subsection 1.7 below is applicable to both the Town Center (TC) and the Town Center – Historic (TC-H) districts within the Downtown Specific Plan.

"1.7 Off-Street Parking
Off-street parking shall be provided as required by the Zoning Ordinance of the City of Redlands; except for mixed use projects and multifamily attached residential projects, all or part of which is located within a one-half mile radius of a train station, shall be subject to the parking requirements contained in Redlands Municipal Code Section 18.92.080(B)."

Subsection 3.7 below is applicable to the Service Commercial (SC) district.

"3.7 Off-Street Parking

Off-street parking shall be provided as required by the Zoning Ordinance of the City of Redlands; except for mixed use projects and multifamily attached residential projects, all or part of which is located within a one-half mile radius of a train station, shall be subject to the parking requirements contained in Redlands Municipal Code Section 18.92.080(B).”

C) Consistency with the General Plan

The proposed Ordinance Text Amendment and Specific Plan Amendment will be consistent with the 2035 General Plan. The 2035 General Plan includes more than 100 new Policies and Actions that are intended to implement the Transit Village concept (see Attachment D), including more mixed use projects with more housing options near the three new train stations in the core areas of Redlands. These transit village areas are shown conceptually as half-mile circles on Figure 4.1, General Plan Land Use Map (Attachment E). This is consistent with the State’s definition promoting transit-oriented development within a half-mile of a major transit stop or train station per the Transit Village Development Planning Act of 1994 (Calif. Gov. Code §65460-§65460.11).

Ultimately, the central strategy of the 2035 General Plan is to discourage more sprawling development around the periphery of the city, reduce motor vehicle traffic, reduce greenhouse gas emissions, improve air quality, preserve agricultural land and open space, protect sensitive habitat areas and conservation land, and provide more housing options and affordability, among other overarching goals. All of these goals align with the demonstrable public benefits identified in the Transit Village Development Planning Act of 1994. To accomplish these goals, new development is encouraged in the interior core areas of the city (i.e., the Transit Village concept and strategy) over the next 20 years or more. New developments in the downtown and transit village areas are expected to be more compact, efficient, pedestrian-oriented, aesthetically and architecturally attractive, cost-effective in terms of infrastructure and public services, and environmentally sustainable such as fewer vehicle miles traveled.

D) Environmental Review

The proposal is exempt from the California Environmental Quality Act (CEQA) in accordance with CEQA Guidelines Section 15061(b)(3), in that the proposed code amendments will not result in any significant effects on the environment nor will it cause a direct or reasonably foreseeable indirect physical change in the environment.

Individual development projects currently under review that may be subject to the above-referenced development standards are undergoing their own environmental reviews in accordance with CEQA (such as an Initial Study with Mitigated Negative Declaration or an Environmental Impact Report). Development projects that would be submitted in the future will undergo individual environmental reviews in accordance with CEQA.

ALTERNATIVES:

The City Council may continue the matter, and direct staff to address any outstanding questions or further issues. Council may continue the public hearing to a date certain.

STRATEGIC PLAN:

This proposal is consistent with three objectives in the City's 2014 – 2017 Strategic Plan. The proposed parking standards are an element of the Draft Transit Villages Specific Plan, which was work derived from the General Plan Update (Land Resource Management Objective D-3 for "General Plan Update").

Land Resource Management Objective D-4 states, "Modernize RMC: Modernize Title 15 (Building and Construction), Title 17 (Subdivision Ordinance), Title 18 (Zoning Ordinance) and Title 19 (Growth Management)."

Economic Development Objective B-6 states, "Downtown Specific Plan – Complete revised Downtown Specific Plan and Environmental Impact Report (EIR)."

SUBMITTED BY:
Brian Desatnik, Development Services Director

RECOMMENDED BY:
Charles M. Duggan, Jr., City Manager

REVIEWED BY:
Daniel J. McHugh, City Attorney
Janice McConnell, Assistant City Manager
Danielle Garcia, Management Services/Finance Director

PREPARED BY:
Brian Foote, City Planner/Planning Manager

Fiscal Impact

Fiscal Year:	21-22
Revenue Generating:	No
Appropriation Required Y/N:	No

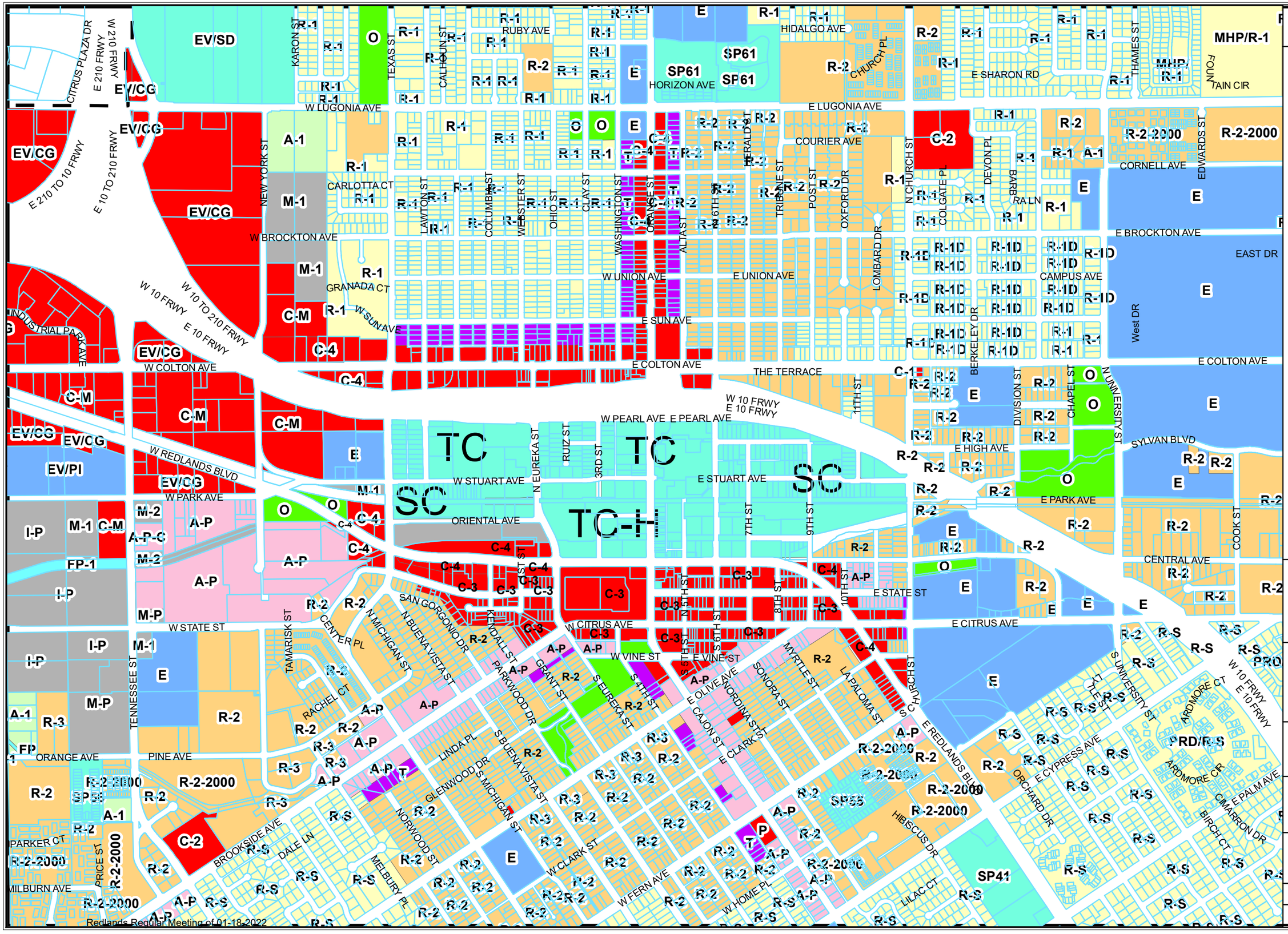
Discussion:

There are no fiscal impacts associated with the proposed zoning code amendments.

Attachments

Attachment A: Zone Map
Attachment B: Downtown Specific Plan Map
Attachment C: Summary of Parking and Trip Generation Studies
Attachment D: Transit Villages Concept (General Plan Section 4.5)
Attachment E: General Plan Land Use Map
Attachment F:Ordinance No. 2930 Legislative
Attachment G: Ordinance No. 2930 Clean
Attachment H. Resolution 8274

Zone Map



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The City of Redlands assumes no warranty or legal responsibility for the information contained on this map.
The data used to generate this map is dynamic in nature, therefore the information shown may or may not be the most current.

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City of Redlands
Department of Innovation & Technology
Geographic Information Systems

City of REDLANDS "A City That Works"

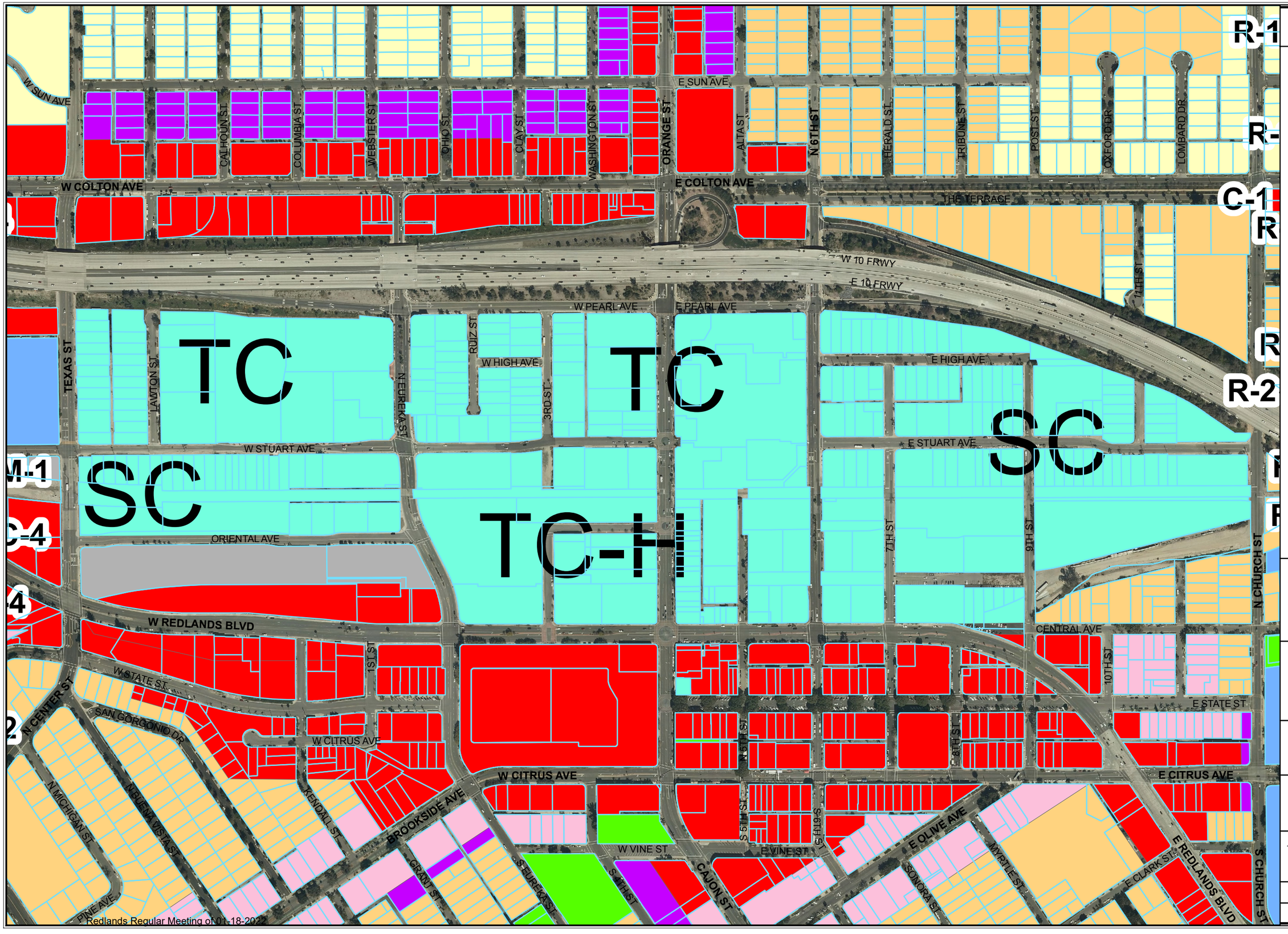
October 13, 2021

OneStop.mxd

Attachment A-2
Zone Map

Click on the link below to view the City's interactive Zone Map

Zone Map online



Zoning

Downtown Specific Plan (SP 45)
Zoning Districts

Town Center (TC)
Town Center - Historic (TC-H)
Service Commercial (SC)

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The City of Redlands assumes no warranty or legal responsibility for the information contained on this map.
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City of Redlands
Department of Innovation & Technology
Geographic Information Systems

City of REDLANDS "A City That Works"

January 15, 2020

OneStop.mxd

Attachment C

Summary of Parking and Trip Generation Research

Title of Research Article & Source	Vehicle Trip Generation Reduction	Parking Generation Reduction
"Empty Spaces: Real Parking Needs at Five TODs." Author: Smart Growth America (January 2017). *Click here for web link*	Trip reduction ranged between 34% to 70% less than ITE's expected values.	Peak parking occupancy ranged between 19% to 45% less than ITE expected values.
"Trip and parking generation at transit-oriented developments: Five U.S. Case Studies." Authors: Ewing, R., Tian, G., Torrey, L., Terzano, K. (2017). *Landscape and Urban Planning*, Vol. 160, pages 69-78. *Click here for web link*	Trip reduction ranged between 30% to 65% less than ITE's expected values.	Residential peak demand: between 54% to 80% less than ITE expected values. Commercial peak demand: significantly less than ITE's expected values.
"Trip and parking generation at transit-oriented developments: a case study of Redmond TOD, Seattle region." Authors: Ewing, R., Tian, G., Weinberger, R., Shively, K., Stinger, P., Hamidi, S. (2016). *Transportation*, Vol. 44, pages 1235-1254. *Click here for web link*	37% of ITE's expected value for vehicle trips; 3 times more trips made by transit than regional avg.; 1.7 times more trips made by walking.	Residential peak demand: 65% of ITE's expected value. Commercial peak demand: 27% of ITE's expected value.
"New Transit Cooperative Research Program Research Confirms Transit-Oriented Developments Produce Fewer Auto Trips." Authors: Arrington, G.B., Sloop, K.I. (2009). *ITE Journal*, Vol. 79, No. 6, pages 26-29. *Click here for web link*	17 TODs reviewed: Trip reduction averages ranged between 27% to 63% less than ITE's expected values.	TOD households were: Twice as likely to not own a car; Own about half as many cars as non-TOD units; More likely to ride transit.
"Vehicle Trip Reduction Impacts of Transit-Oriented Housing." Authors: Cervero, R., Arrington, G.B. (2008). *Journal of Public Transportation*, Vol. 11, No. 3, pages 1-17. *Click here for web link*	Trip reduction averages ranged between 26% to 61% less than ITE's expected values.	Parking not evaluated
"Trip Generation Rates for Urban Infill Land Uses in California (Final Report)." Author: Calif. Dept. of Transportation, Headquarters Divisions of Transportation Planning and Research & Innovation (June 15, 2009). *Click here for web link*	Residential uses: Trip reductions ranged between 17% to 32% less than ITE's expected values. Commercial uses: Trip reductions ranged between 26% to 50% less than ITE's expected values.	Parking not evaluated

Additional articles and resources available at: https://redlandstransitvillages.org/resources/

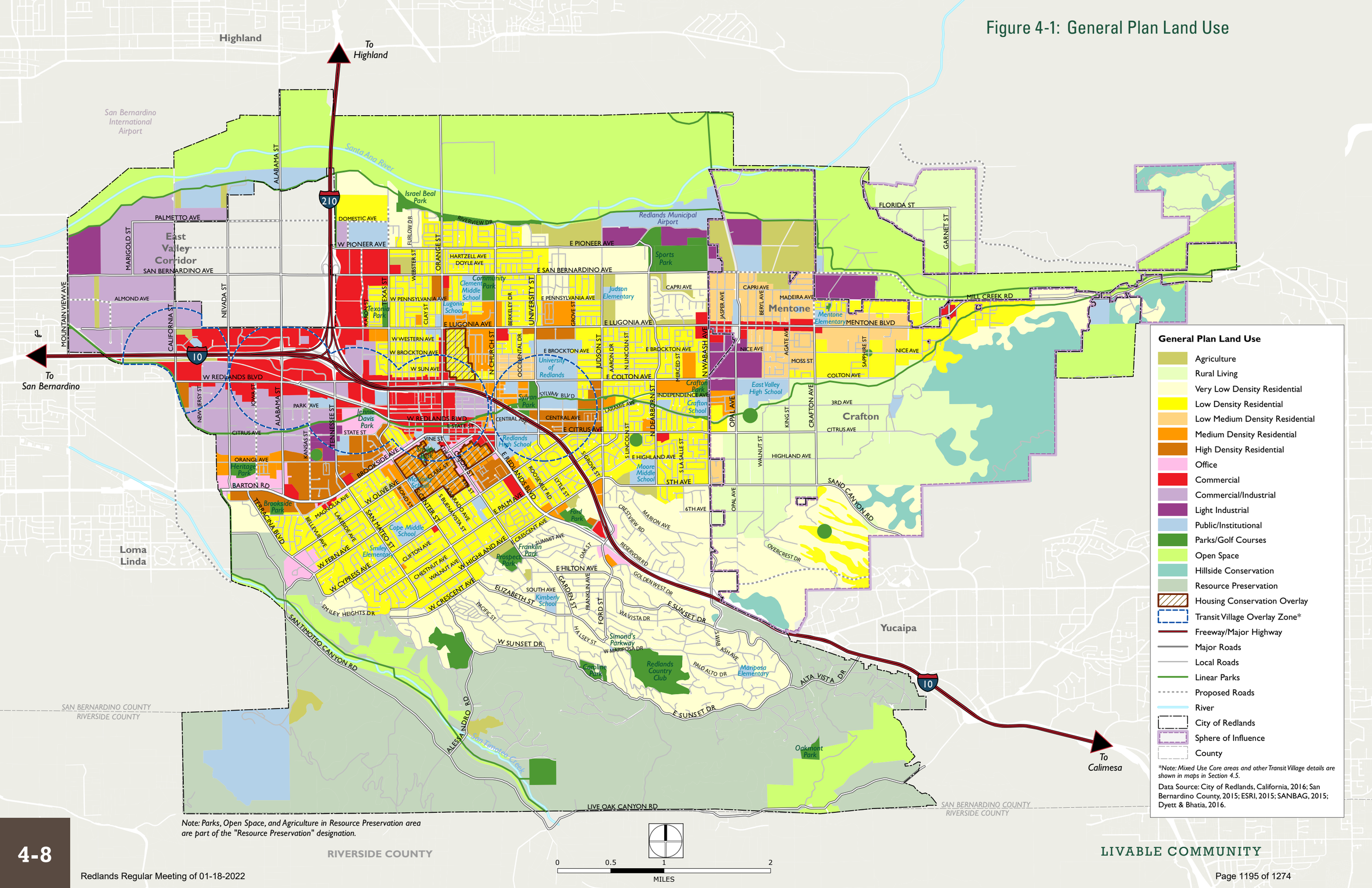
Attachment D

General Plan Section 4.5: Transit Villages

Click on the link below to view Section 4.5 of the 2035 General Plan

General Plan Section 4.5: Transit Villages

Figure 4-1: General Plan Land Use



General Plan Land Use

- Agriculture
- Rural Living
- Very Low Density Residential
- Low Density Residential
- Low Medium Density Residential
- Medium Density Residential
- High Density Residential
- Office
- Commercial
- Commercial/Industrial
- Light Industrial
- Public/Institutional
- Parks/Golf Courses
- Open Space
- Hillside Conservation
- Resource Preservation
- Housing Conservation Overlay
- Transit Village Overlay Zone*
- Freeway/Major Highway
- Major Roads
- Local Roads
- Linear Parks
- Proposed Roads
- River
- City of Redlands
- Sphere of Influence
- County

**Note: Mixed Use Core areas and other Transit Village details are shown in maps in Section 4.5.*

Data Source: City of Redlands, California, 2016; San Bernardino County, 2015; ESRI, 2015; SANBAG, 2015; Dyett & Bhatia, 2016.

Note: Parks, Open Space, and Agriculture in Resource Preservation area are part of the "Resource Preservation" designation.

ORDINANCE NO. 2930

AN ORDINANCE OF THE CITY OF REDLANDS AMENDING CHAPTER 18.92 OF THE REDLANDS MUNICIPAL CODE ESTABLISHING NEW C-3 GENERAL COMMERCIAL DISTRICT DEVELOPMENT STANDARDS FOR RESIDENTIAL DENSITY AND PARKING STANDARDS FOR MIXED USE DEVELOPMENT AND MULTIFAMILY-ATTACHED RESIDENTIAL PROJECTS LOCATED WITHIN A ONE-HALF MILE RADIUS FROM A TRAIN STATION.

WHEREAS, Ordinance No. 2930 would amend Chapter 18.92 of Title 18 of the Redlands Municipal Code to establish certain development standards pertaining to residential density and on-site parking requirements for mixed-use development, and multifamily-attached residential, projects located both within the C-3 General Commercial District, and within one-half mile of a train station; and

WHEREAS, on October 12, 2021, the Planning Commission held a noticed public hearing at which interested persons had an opportunity to testify in support of, or opposition to, Ordinance No. 2930 and at which the Planning Commission considered the Ordinance; and

WHEREAS, approval of Ordinance No. 2930 is exempt from environmental review pursuant to Section 15061(b)(3) of the State Guidelines implementing the California Environmental Quality Act because the proposal will not cause any significant environmental effects and will not result in a direct or reasonably foreseeable indirect physical change in the environment; and

WHEREAS, following the public hearing on October 12, 2021, the Planning Commission determined that Ordinance No. 2930 is in conformity with, and advances the goals of, the General Plan to create a compact, pedestrian-oriented environment that is consistent in character with downtown Redlands, while creating the potential to expand the City's economic opportunities and housing options; and

WHEREAS, on October 12, 2021, the Planning Commission recommended to the City Council that proposed Ordinance No. 2930 be approved; and

WHEREAS, in accordance with Government Code section 65090, on or about January 7, 2022, the City Clerk gave notice by publication in a newspaper of general circulation of the holding of a public hearing at which Ordinance No. 2930 would be considered by the City Council; and

WHEREAS, on January 18, 2022, the City Council held a noticed public hearing at which interested persons had an opportunity to testify in support of, or opposition to, Ordinance No. 2930;

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF REDLANDS DOES ORDAIN AS FOLLOWS:

Section 1. The City Council hereby determines that approval of Ordinance No. 2930 is exempt from environmental review under the California Environmental Quality Act ("CEQA") pursuant to Section 15061(b)(3) of the State Guidelines implementing CEQA because it can be seen with certainty that adoption of the Ordinance will not cause any significant environmental effects and will not result in a direct or reasonably foreseeable indirect physical change in the environment.

Section 2. Section 18.92.080 of the Redlands Municipal Code, titled "Conditional Uses," is hereby amended to read as follows:

"18.92.080: CONDITIONAL USES:

A. In the C-3 zone, the following uses may be permitted subject to approval of a conditional use permit:

Uses listed in chapter 18.192 of this title.

Audio and film production studios and schools.

Auto repair establishments; no open service bays shall face a public street, or they shall be screened.

Automobile parking garages and lots, public or private.

Beer and wine stores.

Bus terminals and similar transit facilities.

Commercial amusement establishments, such as skating rinks, bowling lanes, amusement machine arcades, pool halls, dance halls, nightclubs, cocktail lounges, taverns and beer and wine bars.

Drive-in stores, such as cleaner, liquor, milk and food.

Drive-through sales and/or service.

Frozen food locker.

Grocery; with alcohol beverage sales.

Hospitals and sanatoriums.

Mechanical or self-service auto wash.

Mortuaries or funeral homes.

Motels.

Open air sales, display and storage, including:

Miniature golf and similar commercial amusement establishments.

New or used auto, motorcycle and boat sales.

Swimming pools, commercial.

Tool and equipment sales or rental.

Service stations with alcohol beverage sales; all merchandise must be displayed within the building.

Social halls, with alcohol beverage sales.

Specialty food markets with alcohol beverage sales.

B. Residential uses are permitted subject to approval of a conditional use permit and (i) may be combined with nonresidential uses as a mixed use development, or (ii) be developed as a multifamily-attached residential project, ~~-~~in an existing building or an entirely new building provided:

1. The residential density permitted shall be that allowed by the R-3 district~~,~~; provided, however, that for projects deemed exempt from the "Principles of Managed Development" (section 4.2A) of the City's General Plan, pursuant to section 4.2B, for the reason that the project is determined to be development directly related to a proposed rail station, the floor area ratio shall govern the density/intensity of the project; and

2. For mixed use and multifamily attached residential projects on a property, all or part of which is within a one-half mile radius of a train station, ~~Required~~ required parking for the residential units shall be provided on site in accordance with subsection (a) below, in addition to that required for the commercial use~~(s)~~ in accordance with subsection (b) below. Residential guest spaces and commercial spaces may be shared.~~, except that up to fifty percent (50%) of the required uncovered guest parking spaces for the residential units may jointly use the required parking spaces for the commercial use(s).~~

(a) Residential attached units (apartments, condominiums, townhomes):

i. Units up to 999 sq. ft.: 1.0 space per unit.
ii. Units 1,000 to 1,499 sq. ft.: 1.5 space per unit.
iii. Units 1,500 sq. ft. or more: 2.0 space per unit.
iv. Guests: 0.25 space per unit
v. Live/Work units up to 1,499 sq. ft.: 1.0 space per unit.
vi. Live/Work units 1,500 sq. ft. or more: see Commercial.

(b) Commercial uses (retail, restaurant, office, personal services, and neighborhood-serving uses) within mixed use multi-tenant buildings:

i. Ground floor: 1 space per 300 sq. ft. of gross ground floor building area.
ii. Upper floors: 1 space per 350 sq. ft. of gross upper floor building area.

3. For mixed use projects on a property not within a one-half mile radius from a train station, required parking for the residential units shall be provided on site, in addition to that required for

the commercial uses, in accordance with Chapter 18.164 of this Title 18, except that up to fifty percent (50%) of the required guest parking spaces for the residential units may jointly use the required parking spaces for the commercial uses."

Section 3. The Mayor shall sign this ordinance and the City Clerk shall certify to the adoption of this ordinance and shall cause it, or a summary of it, to be published once in the Redlands Daily Facts, a newspaper of general circulation within the City, and thereafter, this ordinance shall take effect as provided by law.

_____
Paul T. Barich, Mayor

ATTEST:

_____
Jeanne Donaldson, City Clerk

I, Jeanne Donaldson, City Clerk, City of Redlands, hereby certify that the foregoing Ordinance was duly adopted by the City Council at the regular meeting thereof, held on the 18th day of January, 2022, by the following vote:

AYES:
NOES:
ABSENT:
ABSTAIN:

_____
Jeanne Donaldson, City Clerk

ORDINANCE NO. 2930

AN ORDINANCE OF THE CITY OF REDLANDS AMENDING CHAPTER 18.92 OF THE REDLANDS MUNICIPAL CODE ESTABLISHING NEW C-3 GENERAL COMMERCIAL DISTRICT DEVELOPMENT STANDARDS FOR RESIDENTIAL DENSITY AND PARKING STANDARDS FOR MIXED USE DEVELOPMENT AND MULTIFAMILY-ATTACHED RESIDENTIAL PROJECTS LOCATED WITHIN A ONE-HALF MILE RADIUS FROM A TRAIN STATION.

WHEREAS, Ordinance No. 2930 would amend Chapter 18.92 of Title 18 of the Redlands Municipal Code to establish certain development standards pertaining to residential density and on-site parking requirements for mixed-use development, and multifamily-attached residential, projects located both within the C-3 General Commercial District, and within one-half mile of a train station; and

WHEREAS, on October 12, 2021, the Planning Commission held a noticed public hearing at which interested persons had an opportunity to testify in support of, or opposition to, Ordinance No. 2930 and at which the Planning Commission considered the Ordinance; and

WHEREAS, approval of Ordinance No. 2930 is exempt from environmental review pursuant to Section 15061(b)(3) of the State Guidelines implementing the California Environmental Quality Act because the proposal will not cause any significant environmental effects and will not result in a direct or reasonably foreseeable indirect physical change in the environment; and

WHEREAS, following the public hearing on October 12, 2021, the Planning Commission determined that Ordinance No. 2930 is in conformity with, and advances the goals of, the General Plan to create a compact, pedestrian-oriented environment that is consistent in character with downtown Redlands, while creating the potential to expand the City's economic opportunities and housing options; and

WHEREAS, on October 12, 2021, the Planning Commission recommended to the City Council that proposed Ordinance No. 2930 be approved; and

WHEREAS, in accordance with Government Code section 65090, on or about January 7, 2022, the City Clerk gave notice by publication in a newspaper of general circulation of the holding of a public hearing at which Ordinance No. 2930 would be considered by the City Council; and

WHEREAS, on January 18, 2022, the City Council held a noticed public hearing at which interested persons had an opportunity to testify in support of, or opposition to, Ordinance No. 2930;

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF REDLANDS DOES ORDAIN AS FOLLOWS:

Section 1. The City Council hereby determines that approval of Ordinance No. 2930 is exempt from environmental review under the California Environmental Quality Act ("CEQA") pursuant to Section 15061(b)(3) of the State Guidelines implementing CEQA because it can be seen with certainty that adoption of the Ordinance will not cause any significant environmental effects and will not result in a direct or reasonably foreseeable indirect physical change in the environment.

Section 2. Section 18.92.080 of the Redlands Municipal Code, titled "Conditional Uses," is hereby amended to read as follows:

"18.92.080: CONDITIONAL USES:

A. In the C-3 zone, the following uses may be permitted subject to approval of a conditional use permit:

Uses listed in chapter 18.192 of this title.

Audio and film production studios and schools.

Auto repair establishments; no open service bays shall face a public street, or they shall be screened.

Automobile parking garages and lots, public or private.

Beer and wine stores.

Bus terminals and similar transit facilities.

Commercial amusement establishments, such as skating rinks, bowling lanes, amusement machine arcades, pool halls, dance halls, nightclubs, cocktail lounges, taverns and beer and wine bars.

Drive-in stores, such as cleaner, liquor, milk and food.

Drive-through sales and/or service.

Frozen food locker.

Grocery; with alcohol beverage sales.

Hospitals and sanatoriums.

Mechanical or self-service auto wash.

Mortuaries or funeral homes.

Motels.

Open air sales, display and storage, including:

Miniature golf and similar commercial amusement establishments.

New or used auto, motorcycle and boat sales.

Swimming pools, commercial.

Tool and equipment sales or rental.

Service stations with alcohol beverage sales; all merchandise must be displayed within the building.

Social halls, with alcohol beverage sales.

Specialty food markets with alcohol beverage sales.

B. Residential uses are permitted subject to approval of a conditional use permit and (i) may be combined with nonresidential uses as a mixed use development, or (ii) be developed as a multifamily-attached residential project, in an existing building or an entirely new building provided:

1. The residential density permitted shall be that allowed by the R-3 district; provided, however, that for projects deemed exempt from the "Principles of Managed Development" (section 4.2A) of the City's General Plan, pursuant to section 4.2B, for the reason that the project is determined to be development directly related to a proposed rail station, the floor area ratio shall govern the density/intensity of the project; and

2. For mixed use and multifamily attached residential projects on a property, all or part of which is within a one-half mile radius of a train station, required parking for the residential units shall be provided on site in accordance with subsection (a) below, in addition to that required for the commercial uses in accordance with subsection (b) below. Residential guest spaces and commercial spaces may be shared.

(a) Residential attached units (apartments, condominiums, townhomes):

i. Units up to 999 sq. ft.: 1.0 space per unit.
ii. Units 1,000 to 1,499 sq. ft.: 1.5 space per unit.
iii. Units 1,500 sq. ft. or more: 2.0 space per unit.
iv. Guests: 0.25 space per unit
v. Live/Work units up to 1,499 sq. ft.: 1.0 space per unit.
vi. Live/Work units 1,500 sq. ft. or more: see Commercial.

(b) Commercial uses (retail, restaurant, office, personal services, and neighborhood-serving uses) within mixed use multi-tenant buildings:

i. Ground floor: 1 space per 300 sq. ft. of gross ground floor building area.
ii. Upper floors: 1 space per 350 sq. ft. of gross upper floor building area.

3. For mixed use projects on a property not within a one-half mile radius from a train station, required parking for the residential units shall be provided on site, in addition to that required for the commercial uses, in accordance with Chapter 18.164 of this Title 18, except that up to fifty

percent (50%) of the required guest parking spaces for the residential units may jointly use the required parking spaces for the commercial uses."

Section 3. The Mayor shall sign this ordinance and the City Clerk shall certify to the adoption of this ordinance and shall cause it, or a summary of it, to be published once in the Redlands Daily Facts, a newspaper of general circulation within the City, and thereafter, this ordinance shall take effect as provided by law.

_____
Paul T. Barich, Mayor

ATTEST:

_____
Jeanne Donaldson, City Clerk

I, Jeanne Donaldson, City Clerk, City of Redlands, hereby certify that the foregoing Ordinance was duly adopted by the City Council at the regular meeting thereof, held on the 18th day of January, 2022, by the following vote:

AYES:
NOES:
ABSENT:
ABSTAIN:

_____
Jeanne Donaldson, City Clerk

RESOLUTION NO. 8274

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF REDLANDS APPROVING AMENDMENT NO. 22 TO SPECIFIC PLAN NO. 45 TO AMEND SUBSECTIONS 1.7 AND 3.7 OF SECTION III-C, TITLED "PROPERTY DEVELOPMENT STANDARDS," PERTAINING TO PARKING REQUIREMENTS FOR MIXED USE DEVELOPMENT, AND MULTIFAMILY ATTACHED RESIDENTIAL, PROJECTS.

WHEREAS, this Resolution No. 8274 would amend Specific Plan No. 45 (also known as the "Downtown Specific Plan") to establish new development standards in Section III-C thereof pertaining to on-site parking requirements for development located within one-half mile of the downtown train station at the historic Santa Fe Depot; and

WHEREAS, on October 12, 2021, the Planning Commission held a noticed public hearing at which interested persons had an opportunity to testify in support of, or opposition to, the amendments proposed for Specific Plan No. 45; and

WHEREAS, following the public hearing on October 12, 2021, the Planning Commission determined that approval of this Resolution would be in conformity with the City's General Plan, and would be consistent with goals of Specific Plan No. 45; and

WHEREAS, on October 12, 2021, the Planning Commission recommended to the City Council that Resolution No. 8274 be approved; and

WHEREAS, in accordance with Government Code section 65090, on November 5, 2021, the City Clerk gave notice by publication in a newspaper of general circulation of the holding of a public hearing at which Resolution No. 8274 would be considered by the City Council; and

WHEREAS, on January 18, 2022, the City Council held a noticed public hearing at which interested persons had an opportunity to testify in support of, or opposition to, Resolution No. 8274;

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF REDLANDS AS FOLLOWS:

Section 1. California Environmental Quality Act. The City Council hereby determines that approval of this Resolution is exempt from environmental review under the California Environmental Quality Act ("CEQA") pursuant to Section 15061(b)(3) of the State Guidelines implementing CEQA because it can be seen with certainty that adoption of the Resolution will not cause any significant environmental effects and will not result in a direct or reasonably foreseeable indirect physical change in the environment;

Section 2. Amendments to Specific Plan No. 45. Sub-sections 1.7 and 3.7 of Section III-C, titled "Property Development Standards," of Specific Plan No. 45 are hereby amended to read as follows:

"1.7 Off-Street Parking

a. Off-street parking shall be provided as required by Title 18 of the Redlands Municipal Code; provided, however, that mixed use projects, and multifamily attached residential projects, located all, or in part, within a one-half mile radius of the downtown train station of the historic Santa Fe Depot, shall be subject to the parking requirements contained in Section 18.92.080(B) of the Redlands Municipal Code.

b. Joint use parking facilities, as provided for by Title 18 of the Redlands Municipal Code, are encouraged as a means to reduce excess surface parking in the Specific Plan area.

c. An in-lieu fee for new construction, or existing development, may be paid to the City if parking is within 300 feet of the property and in compliance with Title 18 of the Redlands Municipal Code. The amount and schedule for payment shall be determined by Resolution of the City Council."

"3.7 Off-Street Parking

a. Off-street parking shall be provided as required by Title 18 of the Redlands Municipal Code; provided, however, that for mixed use projects and multifamily attached residential projects, on a project site all or part of which is located within a one-half mile radius of a train station, the parking requirements contained in Section 18.92.080(B) of the Redlands Municipal Code shall be applicable.

b. Joint use parking facilities, as provided for in Title 18 of the Redlands Municipal Code, are permitted if the joint use participating facility is located within three hundred (300) feet of the parking facility. Joint use parking in the Service-Commercial District is intended primarily for employee parking.

c. An in-lieu fee for new construction, or existing development, may be paid to the City, if the parking location meets all requirements of this Specific Plan and Title 18 of the Redlands Municipal Code. The amount and schedule for payment shall be determined by resolution of the City Council."

Section 3. Effective Date. This Resolution shall become effective upon the effective date of City of Redlands Ordinance No. 2930.

ADOPTED, SIGNED AND APPROVED this 18th day of January, 2022.

_____

Paul T. Barich, Mayor

ATTEST:

_____

Jeanne Donaldson, City Clerk

I, Jeanne Donaldson, City Clerk of the City of Redlands, do hereby certify that the foregoing Resolution was duly adopted by the City Council at a regular meeting thereof held on the 18th day of January, 2022, by the following vote:

AYES:
NOES:
ABSENT:
ABSTAINED:

_____
Jeanne Donaldson, City Clerk

"A City That Works"

City Council/Financing Authority Meeting **L. 1.**

DATE: 01/18/2022

TO: Honorable Mayor and City Council Members

SUBJECT: Consideration of Resolution No. 8263 authorizing the City Manager to approve standard form Independent Contractor Agreements for recreational services and programs, administered by the Facilities and Community Services Department Recreational Division, and determine that approval of the resolution is exempt from environmental review pursuant to Section 15061(b)(3) of the State's guidelines implementing the California Environmental Quality Act (Assistant City Manager Boatman)

MOTION(S):

If the City Council determines that staff's recommendation is appropriate, the following motions are provided:

1. I move to approve Resolution No. 8263.

RECOMMENDATION:

Staff recommends that the City Council approve Resolution No. 8263 authorizing the City Manager to approve standard form Independent Contractor Agreements for recreational services and programs administered by the Facilities and Community Services Department Recreational Division. Staff further recommends that approval of Resolution No. 8263 is exempt from environmental review pursuant to Section 15061(b)(3) of the State's Guidelines implementing the California Environmental Quality Act.

DISCUSSION:

The Facilities and Community Services Departments' Recreation Division offers programs that enrich the quality of life for Redlands residents by focusing on community support and partnerships, nutrition and healthy eating, active living, and promoting healthy attitudes towards fitness. The Division also facilitates the operation of the Community Center, Senior Center, Joslyn Center, and the rental

of a number of indoor and outdoor recreational sites.

The Recreation Division currently manages a number of independent contractor agreements for the City's various facilities. These agreements are in substantially the same format as recommended by staff and approved by the City Attorney, and provide a wide array of classes, programs, and resources to the community. The current process requires that each similar agreement be considered and approved by the City Council. The proposed resolution would streamline this process and allow the City Manager or designated City staff to administratively approve the Recreation Division standard form of independent contractor agreements.

The change to the procedure proposed within this resolution will enhance the number of programs offered through the Recreation Division and will provide for a more efficient, and timely permitting process. The revenue share with approved independent contractors is based on the Statewide Industry Standard obtained from the California Parks and Recreation Society. The costs of staff administration time are included in the fees, and no additional staff is required for these services. Approval of Resolution 8263 is determined to be exempt from environmental review pursuant to Section 15061(b)(3) of the State's Guidelines implementing the California Environmental Quality Act such that it can be seen with certainty that there is no possibility that the approval of the agreement would have a significant effect on the environment.

ALTERNATIVES:

City Council could choose not to approve Resolution No. 8263, change the assigned designee, or provide alternate direction to staff.

STRATEGIC PLAN:

Objective E-8: Enhance Recreational Program Services

SUBMITTED BY:
Chris Boatman, Assistant City Manager

RECOMMENDED BY:
Charles M. Duggan Jr., City Manager

REVIEWED BY:
Daniel J. McHugh, City Attorney
Janice McConnell, Assistant City Manager
Danielle Garcia, Management Services/Finance Director

PREPARED BY:
Joe Bierma, Administrative Analyst

Fiscal Impact

Fiscal Year: FY 2021-22
Revenue Generating: Y
Amount: Variable
Account No.: 101307-4530
Discussion:

In general, each independent contractor will return 30% of their collected revenue to the City per fiscal year. Revenue generation will depend on the number of independent contractors who sign agreements with the City. The revenue generated from independent contractor agreements a will support the City's Recreation Division Fund (101307).

Attachments

Resolution No. 8263

RESOLUTION NO. 8263

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF REDLANDS DELEGATING AUTHORITY TO THE CITY MANAGER FOR APPROVAL OF THE RECREATION DIVISION'S STANDARD FORM OF INDEPENDENT CONTRACTOR AGREEMENT

WHEREAS, the City customarily enters into Independent Contract Agreements for the provision of services for recreational programs and classes held at the City's Community Center, Joslyn Center, and Senior Center which add to the wide array of City-offered classes and, the costs for the same, which are funded by a Statewide Industry Standard obtained from the California Parks and Recreation Society; and

WHEREAS, the services proposed within these Independent Contractor Agreements will enhance the number of programs offered by the City; and

WHEREAS, in consultation with the City Manager, the Finance Director, and the City Attorney, City staff will annually review its list of Recreation Division's Independent Contract Agreements to ensure that the City Council's policy and goals established by this resolution are attained; and

WHEREAS, this City staff has further recommended that the City Manager be delegated the authority to approve and execute the Recreation Division's standard form of Independent Contractor Agreement, provided they are in a form substantially consistent with this Resolution; and

WHEREAS, the City Council finds, to increase efficiency and to expedite the process of the procurement and approval of Independent Contractor Agreements associated with recreational services and programs provided, it in the best interests of the City to implement City staff's recommendation and adopt this Resolution;

NOW, THEREFORE, BE IT RESOLVED by the City Council of the City of Redlands as follows:

Section 1. The City Council hereby determines that approval of this Resolution is exempt from environmental review pursuant to section 15061(b)(3) of the State Guidelines implementing the California Environmental Quality Act, as approval of this Resolution will not cause a direct physical change to the environment, nor a reasonably foreseeable indirect physical change to the environment.

Section 2. The City Council hereby authorizes the City Manager to approve the Recreation Division's standard form of Independent Contractor Agreements for recreational services and programs, which is substantially in the form attached hereto as Exhibit "A."

Section 3. The form of the agreement attached hereto as Exhibit "A" may be amended from time to time by City staff, with the consent of the City Attorney and without

further City Council action, to conform with new law and to reflect the best practices of the recreational industry. If such form is subsequently amended, within ten (10) days thereof, written notice of the same shall be provided to the City Council and the City Clerk, and the City Clerk shall substitute the amended form for that which is then attached to this Resolution.

ADOPTED, SIGNED AND APPROVED this 18th day of January, 2022.

_____
Paul T. Barich, Mayor

ATTEST:

_____
Jeanne Donaldson, City Clerk

EXHIBIT “A”

INDEPENDENT CONTRACTOR AGREEMENT FOR RECREATIONAL SERVICES AND PROGRAMS

[ATTACHED]

INDEPENDENT CONTRACTOR AGREEMENT

This agreement for the provision of _____ instruction classes ("Agreement") is made and entered into this ___ day of _____, 20__, ("Effective Date") by and between the City of Redlands, a municipal corporation (hereinafter "City") and _____, an individual (hereinafter "Contractor"). City and Contractor are sometimes individually referred to herein as a "Party" and, together, as the "Parties."

RECITALS

WHEREAS, Contractor has expressed an interest in developing and conducting _____ instruction classes for City's Recreation Division; and

WHEREAS, Contractor has represented to City that it has the requisite experience, special knowledge and professional expertise similar to others in the recreation industry who conduct _____ instruction classes services;

NOW, THEREFORE, in consideration of the mutual promises contained herein, the City and Contractor agree as follows:

AGREEMENT

Section 1 Term. The term of this Agreement shall commence on the Effective Date of this Agreement and be for a period of one (1) year, unless earlier terminated as provided for herein.

Section 2. Services.

A. City hereby engages Contractor to develop and conduct _____ instruction classes for the City's Recreation Division (the "Services"). The _____ instruction classes shall be conducted at the Redlands Community Center. Contractor shall determine the method, details and means of performing the Services and shall advise City of the same prior to the provision of any Services under this Agreement. Contractor further agrees to perform the Services to the best of its ability and in an efficient, safe and competent manner.

B. The Services may be scheduled by Contractor for any times, during business hours, depending upon the availability of the City facility.

C. As compensation for providing the Services, City shall register participants and collect registration fees for participants in Contractor's program. City shall pay Contractor seventy percent (70%) of the fees collected no later than twenty-one (21) days after the registration period ends. Contractor shall be responsible for payment of one hundred percent (100%) of the fees paid by a participant in connection with any refund to the participant. City shall have no obligation for refunds.

Section 3. Independent Contractor. It is the express intention of the Parties that Contractor is and shall remain during the term of this Agreement, an independent contractor and not be an employee or agent of City. Contractor represents to City that is free from the control of City as to how Contractor's Services are provided; the Services provided by Contractor are not part of City's regular business; and that Contractor is providing same or similar Services to other persons and entities through Contractor's own business, or through other businesses; and that Contractor agrees its provision of the Services pursuant to this Agreement is not Contractor's sole source of business. Nothing in this Agreement shall be interpreted or construed as creating or establishing the relationship of employer and employee between Contractor and City. The Parties acknowledge that Contractor is not a City employee for State tax, Federal tax or any other purpose.

Section 4. Publicity. Contractor-created marketing materials must be approved in writing by City before distribution and use. City reserves the right to broadcast, televise and photograph class participants for the purpose of marketing.

Section 5. Contractor's Employees. No other employees or agents of Contractor shall participate in the performance of the Services without the prior written consent of City.

Section 6. Business License. Contractor shall obtain a City of Redlands business license as a pre-condition of performing the Services.

Section 7. Termination. City shall have the right to terminate this Agreement, with or without cause, upon twenty (20) days prior written notice to Contractor. City shall have no liability for any claims or damages resulting to Contractor as a result of any exercise by City of its right to terminate this Agreement.

Section 8. Notices. Any notice or other communication required, or which may be given, pursuant to this Agreement, shall be in writing. Any such notice shall be deemed delivered (i) on the date of delivery in person; (ii) five (5) days after deposit in first class registered mail, with return receipt requested; (iii) on the actual delivery date if deposited with an overnight courier; or (iv) on the date sent by facsimile or electronic mail transmission (including PDF), if confirmed with a copy sent contemporaneously by first class, certified, registered or express mail; in each case properly posted and fully prepaid to the appropriate address set forth below, or such other address as a Party may provide notice in accordance with this section:

CITY:	CONTRACTOR:
City Clerk	_____
City of Redlands	_____
PO Box 3005	_____
Redlands, CA 92373	_____
jdonaldson@cityofredlands.org	_____
Phone: (909) 798-7531	_____

Section 9. Indemnity. Contractor shall defend, indemnify and hold City, its elected officials, officers, employees and agents harmless from and against any and all actions, damages, losses, causes of action and liability imposed or claimed relating to the injury or death of any person or damage to any property, including attorneys' fees and other legal expenses, arising directly or indirectly from any negligent act or omission of Contractor in performing the Services.

Section 10. Entire Agreement/Amendment. This Agreement represents the entire Agreement of the Parties as to the matters contained herein. Any amendment of this Agreement shall be effective only if it is in writing and signed by the Parties.

Section 11. Assignment. This Agreement shall not be assigned without the prior written consent of City. Any assignment, or attempted assignment, without such prior consent, shall be null and void and, at the option of City, result in the immediate termination of this Agreement.

Section 12. Insurance. Contractor shall obtain and maintain during the term of this Agreement all insurance required by this Section and shall submit to City certificates of insurance and appropriate endorsements evidencing that the insurance is in force and effect. Evidence of such insurance shall be provided to City within fifteen (15) days of the Effective Date of this Agreement, and prior to commencement of any Services. Acceptance of the certificates by City shall not relieve Contractor of any of the insurance requirements contained herein, nor decrease the liability of Contractor.

A. If applicable, workers' compensation and employer's liability insurance for its employees throughout the term of this Agreement pursuant to Labor Code Sections 1860 and 3700, and in amounts which satisfy statutory requirements.

B. Comprehensive and general liability insurance with a carrier acceptable to City in an amounts not less than One Million Dollars ($1,000,000) per occurrence and Two Million Dollars ($2,000,000) aggregate for public liability, property damage and personal injury. Such insurance shall not be cancelled unless thirty (30) days prior written notice is provided to City.

C. Except for workers' compensation and employer's liability insurance, City shall be named as an additional insured on all policies and such insurance shall be primary and non-contributing to any insurance or self-insurance maintained by City.

Section 13. Attorneys' Fees. In the event any action is commenced to enforce or interpret the terms or conditions of this Agreement the prevailing Party shall, in addition to any costs or other relief, be entitled to recover its reasonable attorneys' fees, including fees for use of in-house counsel by a Party.

CITY OF REDLANDS

CONTRACTOR

_____

Charles M. Duggan, Jr. City Manager

ATTEST:

_____

Jeanne Donaldson, City Clerk

"A City That Works"

City Council/Financing Authority Meeting **L. 2.**

DATE: 01/18/2022

TO: Honorable Mayor and City Council Members

SUBJECT: Consideration of a first amendment to the non-professional services agreement with RP Landscape and Irrigation to increase the second renewal annual compensation from $66,036 to $122,663.92 and the total compensation under the Agreement to an amount not-to-exceed $254,735.92, and determine approval of the amendment is exempt from environmental review pursuant to Section 15061(b)(3) of the State's guidelines implementing the California Environmental Quality Act (Assistant City Manager Boatman)

MOTION(S):

If the City Council determines that staff's recommendation is appropriate, the following motions are provided:

1. I move that the City Council determine approval of the first amendment to the non-professional services agreement with RP Landscape and Irrigation is exempt from environmental review pursuant to Section 15061(b)(3) of the State's guidelines implementing the California Environmental Quality Act; and

2. I move to approve the first amendment to the non-professional services agreement with RP Landscape and Irrigation to increase the second renewal annual total compensation from $66,036 to $122,663.92; and the total compensation under the agreement to an amount not-to-exceed $254,735.92.

RECOMMENDATION:

Staff recommends that the City Council find the approval of the first amendment to the non-professional services agreement between the City of Redlands and RP Landscape and Irrigation is exempt from environmental review pursuant to Section 15061(b)(3) of the State's guidelines implementing the California Environmental Quality Act and approve the amendment to the agreement.

DISCUSSION:

The Facilities and Community Services Department (FCS) oversees the acceptance and maintenance of Community Facilities Districts (CFD). A CFD is defined as an area of the City in which property owners have voted to impose assessments in order to finance the maintenance of public improvements in connection with the development of the subject property within each district. The districts were formed in accordance with the Mello-Roos Community Facilities Act of 1982.

The City utilizes outside contractual services to help ensure consistent maintenance and the resolution of issues within CFD areas. The City advertised a Request for Bid (RFB) for the provision of CFD maintenance in September 2018, and an agreement was awarded to RP Landscape and Irrigation in February 2019. The scope of service areas in 2019 included seven established CFD locations. Within the term of the agreement with RP Landscape and Irrigation, the City has accepted an additional five CFD locations.

Staff has performed a cost projection for the existing contract and has determined that an additional $56,627.92 will be needed for the remainder of the agreement to address the additional landscaping. Therefore, the attached amendment has been prepared to increase the second renewal annual total compensation amount by $56,627.92, for the current and final term, for a total compensation amount of $254,735.92. Sufficient funding for the $56,627.92 is included in the Fiscal Year 2021-22 Adopted Budget, specifically in the CFD Fund (261).

Approval of the first amendment to the agreement is exempt from environmental review pursuant to Section 15061(b)(3) of the State's guidelines implementing the California Environmental Quality Act as there is no possibility approval of the amendment will result in a significant impact on the environment.

ALTERNATIVES:

The City Council may elect to not approve the first amendment to the agreement and direct staff accordingly.

STRATEGIC PLAN:

Focus Area D - Land Resource Management

SUBMITTED BY:
Chris Boatman, Assistant City Manager

RECOMMENDED BY:
Charles M. Duggan Jr., City Manager

REVIEWED BY:
Daniel J. McHugh, City Attorney
Janice McConnell, Assistant City Manager
Danielle Garcia, Management Services/Finance Director

PREPARED BY:
Erik Reeves, Field Services Superintendent

Fiscal Impact

Fiscal Year:	2021-22
Revenue Generating:	N
Appropriation Required Y/N:	N
Budgeted Y/N:	Yes
Account No.:	261300-6710

Discussion:

Sufficient funding for this service is included in the Facilities and Community Services Department budget for Fiscal Year 2021-22 as approved by City Council. These landscaping services are funded by assessments collected by the Community Facility Districts (261300).

Attachments

RP Current Agreement
RP First Amendment

AGREEMENT TO PERFORM NON-PROFESSIONAL SERVICES FOR IMPROVEMENT TO PUBLIC BUILDINGS AND GROUNDS

This agreement for the provision of landscape maintenance services at Community Facilities Districts ("Agreement") is made and entered in this 5th day of February, 2019 ("Effective Date"), by and between the City of Redlands, a municipal corporation ("City)" and RP Landscape and Irrigation ("Contractor"). City and Contractor are sometimes individually referred to herein as a "Party" and, together, as "Parties." In consideration of the mutual promises contained herein, City and Contractor agree as follows:

ARTICLE 1 – ENGAGEMENT OF CONTRACTOR

1.1 City hereby engages Contractor to perform landscape maintenance services at Community Facilities Districts for City (the "Services").

1.2 The Services shall be performed by Contractor in a professional manner, and Contractor represents that it has the skill and the professional expertise necessary to provide the Services to City at a level of competency presently maintained by other practicing professional Contractors in the industry providing like and similar types of Services.

ARTICLE 2 – RESPONSIBILITIES OF CONTRACTOR

2.1 The Services that Contractor shall perform are more particularly described in Exhibit "A," entitled "Scope of Services," which is attached hereto and incorporated herein by reference.

2.2 Contractor shall comply with all applicable federal, state and local laws and regulations in the performance of the Services including, but not limited, to all applicable Labor Code and prevailing wage laws and non-discrimination laws, including the Americans with Disabilities Act. Pursuant to Labor Code section 1773.2, copies of the prevailing rates of per diem wages as determined by the Director of the California Department of Industrial Relations for each craft, classification or type of worker needed to undertake the Services are on file at City's Municipal Utilities and Engineering Department, located at the Civic Center, 35 Cajon Street, Suite 15A (Mailing: P.O. Box 3005), Redlands, California 92373.

2.3 Contractor acknowledges that if it violates the Labor Code provisions relating to prevailing wages that City may enforce such provisions by withholding payments to Contractor or its subcontractors pursuant to Labor Code section 1771.6.

2.4 If Contractor executes an agreement with a subcontractor to perform any portion of the Services, Contractor shall comply with Labor Code sections 1775 and 1777.7, and shall provide the subcontractor with copies of the provisions of Labor Code sections 1771, 1775, 1776, 1777.5, 1813 and 1815. Contractor acknowledges that the statutory provisions establishing penalties for failure to comply with state wage and hour laws and to pay prevailing wages may be enforced by City pursuant to Labor Code sections 1775 and 1813.

2.5 Contractor and its subcontractors shall comply with the provisions of Labor Code section 1776 regarding payroll records maintenance, certifications, retention and inspection.

2.6 Contractor acknowledges that eight (8) hours constitutes a legal day's work pursuant to Labor Code section 1810.

2.7 Contractor shall comply with the provisions of Labor Code section 1777.5 as to apprenticeships, and Labor Code sections 1771, 1775, 1776, 1777.5, 1813 and 1815.

2.8 Contractor shall obtain, execute and deliver to City a Labor and Materials Payment Bond, in the form attached hereto as Exhibit "C."

2.9 Pursuant to Public Contract Code section 7103.5(b), Contractor offers and agrees to assign to City all rights, title and interest in and to all causes of action it may have under section 4 of the Clayton Act (15 U.S.C. section 15) or under the Cartwright Act (Chapter 2 (commencing with section 16700) of Part 2 of Division 7 of the Business and Professions Code), arising from purchases of goods, Work or materials pursuant to this Agreement.

ARTICLE 3 – RESPONSIBILITIES OF CITY

3.1 City shall make available to Contractor information in its possession that may assist Contractor in performing the Services.

3.2 City designates Chris Boatman, Quality of Life Director, as City's representative with respect to performance of the Services, and such person shall have the authority to transmit instructions, receive information, interpret and define City's policies and decisions with respect to performance of the Services.

ARTICLE 4 – PERFORMANCE OF SERVICES

4.1 Contractor shall perform and complete the Services in a prompt and diligent manner in accordance with the schedule set forth in Exhibit "A," entitled "Scope of Services." The Services shall commence as of the Effective Date of this Agreement.

4.2 The term of this Agreement shall be for a period of one (1) year from the Effective Date of this Agreement (the "Initial Term"). The City shall have the option to extend the Initial Term of this Agreement by two (2) additional one-year terms (each, an "Extended Term"), on the same terms and conditions, by providing written notice to Contractor at least thirty (30) days prior to the expiration of the Initial Term or any Extended Term. The Initial Term and the Extended Terms are collectively referred to herein as the "Term" of this Agreement.

4.3 Contractor shall furnish a labor and material bond in the form attached hereto as Exhibit "C", in an amount equal to one hundred percent (100%) of the total compensation to be paid to Contractor pursuant to this Agreement.

ARTICLE 5 – PAYMENTS TO CONTRACTOR

5.1 Total compensation for Contractor's performance of the Services shall not exceed the amount of sixty six thousand thirty six dollars ($66,036) for the Services provided during the Initial Term. Should this Agreement be renewed, the compensation for Contractor's performance for the Services shall not exceed the amount of sixty six thousand thirty six dollars ($66,036) for the second Renewal Term; or sixty six thousand thirty six dollars ($66,036) for the third Renewal Term, bringing the total possible amount of compensation to a not-to-exceed amount of one hundred ninety eight thousand one hundred eight dollars ($198,108). For the Initial Term and each Renewal Term, City shall pay Contractor on a time and materials basis up to the not to not-to-exceed amount in accordance with the rates specified in Exhibit "B," entitled "Price Sheet," which is attached hereto and incorporated herein by reference.

5.2 Contractor shall submit monthly invoices to City describing the Services performed during the preceding month. Contractor's invoices shall include a brief description of the Services performed, the dates the Services were performed, the number of hours spent and by whom, and a description of reimbursable expenses related to the Services. City shall pay Contractor no later than thirty (30) days after receipt and approval by City of Contractor's invoice.

5.3 Any notice or other communication required, or which may be given, pursuant to this Agreement, shall be in writing. Any such notice shall be deemed delivered (i) on the date of delivery in person; (ii) five (5) days after deposit in first class registered mail, with return receipt requested; (iii) on the actual delivery date if deposited with an overnight courier; or (iv) on the date sent by facsimile, if confirmed with a copy sent contemporaneously by first class, certified, registered or express mail; in each case properly posted and fully prepaid to the appropriate address set forth below, or such other address as a Party may provide notice in accordance with this section:

City
City Clerk
City of Redlands
35 Cajon Street
P.O. Box 3005 (mailing)
Redlands, CA 92373
jdonaldson@cityofredlands.org
(909) 798-7531

Contractor
Roy Perez, Owner
RP Landscape & Irrigation
PO Box 1200
San Bernardino, CA 92402
rplandscapeinc@aol.com
(909) 889-9987

ARTICLE 6 – INSURANCE AND INDEMNIFICATION

6.1 The following insurance coverage required by this Agreement shall be maintained by Contractor for the duration of its performance of the Services. Contractor shall not perform any Services unless and until the required insurance listed below is obtained by Contractor. Contractor shall provide City with certificates of insurance and endorsements

evidencing such insurance prior to commencement of the Services. Insurance policies shall include a provision prohibiting cancellation or modification of the policy except upon thirty (30) days prior written notice to City.

A. Workers' Compensation and Employer's Liability insurance in the amount that meets statutory requirements with an insurance carrier acceptable to City, or certification to City that Contractor is self-insured or exempt from the workers' compensation laws of the State of California. Contractor shall execute and provide City with Exhibit "D" entitled "Workers' Compensation Insurance Certification," which is attached hereto and incorporated herein by this reference prior to performance of the Services.

B. Comprehensive General Liability insurance with carriers acceptable to City in the minimum amount of One Million Dollars ($1,000,000) per occurrence and Two Million Dollars ($2,000,000) aggregate, for public liability, property damage and personal injury is required. City shall be named as an additional insured and such insurance shall be primary and non-contributing to any insurance or self-insurance maintained by City.

C. Business Auto Liability coverage, with minimum limits of One Million Dollars ($1,000,000) per occurrence, combined single limit bodily injury liability and property damage liability. This coverage shall include all Contractor owned vehicles used in connection with Contractor's provision of the Services, hired and non-owned vehicles, and employee non-ownership vehicles. City shall be named as an additional insured and such insurance shall be primary and non-contributing to any insurance or self-insurance maintained by City.

6.2 Contractor shall defend, indemnify and hold harmless City and its elected officials, employees and agents from and against any and all claims, losses or liability, including attorneys' fees, arising from injury or death to persons or damage to property occasioned by any negligent act or omission by, or the willful misconduct of, Contractor, or its officers, employees and agents in performing the Services.

ARTICLE 7 – CONFLICTS OF INTEREST

7.1 Contractor covenants and represents that it does not have any investment or interest in any real property that may be the subject of this Agreement or any other source of income, interest in real property or investment that would be affected in any manner or degree by the performance of Contractor's Services. Contractor further covenants and represents that in the performance of its duties hereunder, no person having any such interest shall perform any Services under this Agreement.

7.2 Contractor agrees it is not a designated employee within the meaning of the Political Reform Act because Contractor:

A. Does not make a governmental decision whether to:

(i) approve a rate, rule or regulation, or adopt or enforce a City law;

(ii) issue, deny, suspend or revoke any City permit, license, application, certification, approval, order or similar authorization or entitlement;
(iii) authorize City to enter into, modify or renew a contract;
(iv) grant City approval to a contract that requires City approval and to which City is a party, or to the specifications for such a contract;
(v) grant City approval to a plan, design, report, study or similar item;
(vi) adopt, or grant City approval of, policies, standards or guidelines for City or for any subdivision thereof.

B. Does not serve in a staff capacity with City and in that capacity, participate in making a governmental decision or otherwise perform the same or substantially the same duties for City that would otherwise be performed by an individual holding a position specified in City's Conflict of Interest Code under Government Code section 87302.

7.3 In the event City determines that Contractor must disclose its financial interests, Contractor shall complete and file a Fair Political Practices Commission Form 700, Statement of Economic Interests, with the City Clerk's office pursuant to the written instructions provided by the City Clerk.

ARTICLE 8 – GENERAL CONSIDERATIONS

8.1 In the event any action is commenced to enforce or interpret any of the terms or conditions of this Agreement the prevailing Party shall, in addition to any costs and other relief, be entitled to the recovery of its reasonable attorneys' fees, including fees for the use of in-house counsel by a Party.

8.2 Contractor shall not assign any of the Services, except with the prior written approval of City and in strict compliance with the terms and conditions of this Agreement. Any assignment or attempted assignment without such prior written consent may, in the sole discretion of City, results in City's immediate termination of this Agreement.

8.3 Contractor is for all purposes under this Agreement an independent contractor and shall perform the Services as an independent contractor. Neither City nor of its agents shall have control over the conduct of Contractor or Contractor's employees, except as herein set forth. Contractor shall supply all necessary tools and instrumentalities required to perform the Services. Assigned personnel employed by Contractor are for its account only, and in no event shall Contractor or personnel retained by it be deemed to have been employed by City or engaged by City for the account of, or on behalf of City. Contractor shall have no authority, express or implied, to act on behalf of City in any capacity whatsoever as an agent, nor shall Contractor have any authority, express or implied, to bind City to any obligation.

8.4 This Agreement may be terminated by City, in its sole discretion, by providing not less than five (5) days prior written notice to Contractor of City's intent to terminate. If this Agreement is terminated by City, an adjustment to Contractor's compensation shall be made, but (1) no amount shall be allowed for anticipated profit or unperformed Services,

and (2) any payment due Contractor at the time of termination may be adjusted to the extent of any additional costs to City occasioned by any default by Contractor. Upon receipt of a termination notice, Contractor shall immediately discontinue its provision of the Services and, within five (5) days of the date of the termination notice, deliver or otherwise make available to City, copies (in both hard copy and electronic form, where applicable) of project related data, design calculations, drawings, specifications, reports, estimates, summaries and such other information and materials as may have been accumulated by Contractor in performing the Services. Contractor shall be compensated on a pro-rata basis for Services completed up to the date of termination.

8.5 Contractor shall maintain books, ledgers, invoices, accounts and other records and documents evidencing costs and expenses related to the Services for a period of three (3) years, or for any longer period required by law, from the date of final payment to Contractor pursuant to this Agreement. Such books shall be available at reasonable times for examination by City at the office of Contractor.

8.6 This Agreement, including the Exhibits incorporated herein by reference, represents the entire agreement and understanding between the Parties as to the matters contained herein, and any prior negotiations, written proposals or verbal agreements relating to such matters are superseded by this Agreement. Except as otherwise provided for herein, any amendment to this Agreement shall be in writing, approved by City and signed by City and Contractor.

8.7 This Agreement shall be governed by and construed in accordance with the laws of the State of California.

8.8 If one or more of the sentences, clauses, paragraphs or sections contained in this Agreement is declared invalid, void or unenforceable by a court of competent jurisdiction, the same shall be deemed severable from the remainder of this Agreement and shall not affect, impair or invalidate the remaining sentences, clauses, paragraphs or sections contained herein, unless to do so would deprive a Party of a material benefit of its bargain under this Agreement.

IN WITNESS WHEREOF, duly authorized representatives of City and Contractor have signed in confirmation of this Agreement.

CITY OF REDLANDS

By: _____
Paul W. Foster, Mayor

RP LANDSCAPE & IRRIGATION

By: _____
Roy Perez, Owner

ATTEST:

_____
Jeanne Donaldson, City Clerk

EXHIBIT "B"

(Price and Fee Schedule)

(ITEM 1) ORIGINAL – CFD 2004-01
CENTEX HOMES
5TH AND WABASH – APPROXIMATELY 173,060 SQUARE FEET– EXTERIOR STREETS ONLY

A. SERVICE (SEE DEFINITIONS- EXHIBIT A)	B. ANNUAL FREQUENCY	C. UNIT PRICE $	*D. ANNUAL TOTAL $
(1) TURF GRASS MOWING	4 TIMES PER MONTH DURING SUMMER (4 MONTHS) 2 TIMES PER MONTH DURING WINTER (8 MONTHS)	$ 172.50 /PER TIME 32 TIMES	$ 5,520
(2) TURF GRASS EDGING & TRIMMING	4 TIMES PER MONTH DURING SUMMER (4 MONTHS) 2 TIMES PER MONTH DURING WINTER (8 MONTHS)	$ 15 /PER TIME 32 TIMES	$ 480
(3) SHRUB/VINE MAINTENANCE	4 TIMES PER MONTH DURING SUMMER (4 MONTHS) 2 TIMES PER MONTH DURING WINTER (8 MONTHS)	$ 37.50 /PER TIME 32 TIMES	$ 1,200
(4) BLOW/SWEEP CURB, GUTTER, HARDSCAPE	1 TIME PER WEEK	$ 20 /PER WEEK 52 WEEKS	$ 1,040
(5) IRRIGATION MAINTENANCE & REPAIR (MONTHLY INSPECTION W/ REPAIRS AS NEEDED)	1 TIME PER MONTH	$ 100 /PER MONTH 12 MONTHS	$ 1,200
(6) WEED CONTROL (CHEMICAL TREATMENT, MANUAL REMOVAL)	4 TIMES PER MONTH DURING SUMMER (4 MONTHS) 2 TIMES PER MONTH DURING WINTER (8 MONTHS)	$ 37.50 /PER TIME 32 TIMES	$ 1,200
(7) PEST CONTROL	4 TIMES PER YEAR	$ 150 /PER TIME 4 TIMES	$ 600
(8) TREE MAINTENANCE	1 TIME PER YEAR	$ 200 /PER YEAR 1 YEAR	$ 200
(9)TRASH & DEBRIS REMOVAL	1 TIME PER WEEK	$ 20 /PER WEEK 52 WEEKS	$ 1,040
ORANGE GROVES – WATERED FOR 48 HOURS EVERY 26 DAYS ON A FAN MIST SPRAY HEAD (EXISTING). BIDDER RESPONSIBLE FOR TIMER ADJUSTMENTS BASED ON STAFF RECOMMENDATIONS.			
(1) IRRIGATION MAINTENANCE & REPAIR (MONTHLY INSPECTION WITH REPAIRS AS NEEDED)	1 TIME PER MONTH	$ 50 /PER MONTH (12 MONTHS)	$ 600
(2) WEED CONTROL	4 TIMES PER MONTH DURING SUMMER (4 MONTHS) 2 TIMES PER MONTH	$ 20 /PER TIME 32 TIMES	$ 640

	DURING WINTER (8 MONTHS)		
(3) PEST CONTROL	4 TIMES PER YEAR	$ 150 /PER TIME 4 TIMES	$ 600
		(BxC=*D) (1) SUBTOTAL	**$14,320**

(ITEM 2) ANNEXATION NO. 4
FORD STREET AT PATRICIA DRIVE MEDIAN – APPROXIMATELY 8,651 SQUARE FEET

A. SERVICE (SEE DEFINITIONS EXHIBIT A)	B. ANNUAL FREQUENCY	C. UNIT PRICE $	*D. ANNUAL TOTAL $
(1) SHRUB/VINE MAINTENANCE	4 TIMES PER MONTH DURING SUMMER (4 MONTHS) 2 TIMES PER MONTH DURING WINTER (8 MONTHS)	$ 60 /PER TIME 32 TIMES	$ 1,920
(2) BLOW/SWEEP CURB, GUTTER, HARDSCAPE	1 TIME PER WEEK	$ 5 /PER WEEK 52 WEEKS	$ 260
(3) IRRIGATION MAINTENANCE & REPAIR (MONTHLY INSPECTION WITH REPAIRS AS NEEDED)	1 TIME PER MONTH	$ 20 /PER MONTH 12 MONTHS	$ 240
(4) WEED CONTROL (CHEMICAL TREATMENT, MANUAL REMOVAL)	4 TIMES PER MONTH DURING SUMMER (4 MONTHS) 2 TIMES PER MONTH DURING WINTER (8 MONTHS)	$ 5 /PER TIME 32 TIMES	$ 160
(5) PEST CONTROL	4 TIMES PER YEAR	$ 60 /PER TIME 4 TIMES	$ 240
(6) TREE MAINTENANCE	1 TIME PER YEAR	$ 100 /PER YEAR 1 TIME	$ 100
(7) TRASH & DEBRIS REMOVAL	1 TIME PER WEEK	$ 3 /PER WEEK 52 WEEKS	$ 156
		BxC=*D (2) SUBTOTAL	**$3,076**

(ITEM 3) ANNEXATION NO. 5
CALIFORNIA STREET AT ORANGE TREE LANE – APPROXIMATELY 2,437 SQUARE FEET

A. SERVICE (SEE DEFINITIONS EXHIBIT A)	B. ANNUAL FREQUENCY	C. UNIT PRICE $	*D. ANNUAL TOTAL $
(1) TURF GRASS MOWING	4 TIMES PER MONTH DURING SUMMER (4 MONTHS) 2 TIMES PER MONTH DURING WINTER (8 MONTHS)	$ 20 /PER TIME 32 TIMES	$ 640
(2) TURF GRASS EDGING & TRIMMING	4 TIMES PER MONTH DURING SUMMER (4 MONTHS) 2 TIMES PER MONTH DURING WINTER (8 MONTHS)	$ 5 /PER TIME 32 TIMES	$ 160
(4) BLOW/SWEEP CURB, GUTTER, HARDSCAPE	1 TIME PER WEEK	$ 5 /PER WEEK 52 WEEKS	$ 260
(5) IRRIGATION MAINTENANCE & REPAIR (MONTHLY INSPECTION WITH REPAIRS AS NEEDED)	1 TIME PER MONTH	$ 5 /PER MONTH 12 MONTHS	$ 60
(6) WEED CONTROL (CHEMICAL TREATMENT, MANUAL REMOVAL)	4 TIMES PER MONTH DURING SUMMER (4 MONTHS) 2 TIMES PER MONTH DURING WINTER (8 MONTHS)	$ 5 /PER TIME 32 TIMES	$ 160
(7) PEST CONTROL	4 TIMES PER YEAR	$ 10 /PER TIME 4 TIMES	$ 40
(8) TREE MAINTENANCE	1 TIME PER YEAR	$ 20 /PER TIME 1 TIME	$ 20
(9) TRASH & DEBRIS REMOVAL	1 TIME PER WEEK	$ 5 /PER WEEK 52 WEEKS	$ 260
(10) FERTILIZATION AND AERATION	2 TIMES PER YEAR	$ 20 /PER YEAR 2 TIMES	$ 40
		(BxC=*D) (3) SUBTOTAL	**$1,640**

(ITEM 4) ANNEXATION NO. 9 -
REDLANDS BLVD AT NEVADA ST MEDIAN -- APPROXIMATELY 2,948 SQUARE FEET

A. SERVICE (SEE DEFINITIONS EXHIBIT A)	B. ANNUAL FREQUENCY	C. UNIT PRICE $	*D. ANNUAL TOTAL $
(1) SHRUB & VINE MAINTENANCE	4 TIMES PER MONTH DURING SUMMER (4 MONTHS) 2 TIMES PER MONTH DURING WINTER (8 MONTHS)	$ 40 /PER TIME 32 TIMES	$ 1,280
(2) BLOW/SWEEP CURB, GUTTER, HARDSCAPE	1 TIME PER WEEK	$ 5 /PER WEEK 52 WEEKS	$ 260
(3) IRRIGATION MAINTENANCE & REPAIR (MONTHLY INSPECTION WITH REPAIRS AS NEEDED)	1 TIME PER MONTH	$ 5 /PER MONTH 12 MONTHS	$ 60
(4) WEED CONTROL (CHEMICAL TREATMENT, MANUAL REMOVAL)	4 TIMES PER MONTH DURING SUMMER (4 MONTHS) 2 TIMES PER MONTH DURING WINTER (8 MONTHS)	$ 5 /PER TIME 32 TIMES	$ 160
(5) PEST CONTROL	4 TIMES PER YEAR	$ 10 /PER YEAR 4 TIMES	$ 40
(6) TREE MAINTENANCE	1 TIME PER YEAR	$ 20 /PER YEAR 1 TIME	$ 20
(7) TRASH & DEBRIS REMOVAL	1 TIME PER WEEK	$ 5 /PER WEEK 52 WEEKS	$ 260
		(BxC=*D) (4) SUBTOTAL	$2,080

(ITEM 5) ANNEXATION NO. 12B
LUCAS LANE AT JUDSON STREET – APPROXIMATELY 110,728 SQUARE FEET

A. SERVICE (SEE DEFINITIONS EXHIBIT A)	B. ANNUAL FREQUENCY	C. UNIT PRICE $	*D. ANNUAL TOTAL $
(1) TURF GRASS MOWING	4 TIMES PER MONTH	$ 125 /PER TIME 52 TIMES	$ 6,500
(2) TURF GRASS EDGING & TRIMMING	4 TIMES PER MONTH	$ 10 /PER TIME 52 WEEKS	$ 520
(3) SHRUB/VINE MAINTENANCE	4 TIMES PER MONTH DURING SUMMER (4 MONTHS) 2 TIMES PER MONTH DURING WINTER (8 MONTHS)	$ 10 /PER TIME 24 TIMES	$ 240
(4) BLOW/SWEEP CURB, GUTTER, HARDSCAPE	1 TIME PER WEEK	$ 10 /PER WEEK 52 TIMES	$ 520
(5) IRRIGATION MAINTENANCE & REPAIR (MONTHLY INSPECTION W/REPAIRS AS NEEDED)	1 TIME PER MONTH	$ 10 /PER MONTH 12 MONTHS	$ 120
(6) WEED CONTROL (CHEMICAL TREATMENT, MANUAL REMOVAL)	4 TIMES PER MONTH DURING SUMMER (4 MONTHS) 2 TIMES PER MONTH DURING WINTER (8 MONTHS)	$ 20 /PER TIME 24 TIMES	$ 480
(7) PEST CONTROL	2 TIMES PER MONTH	$ 20 /PER TIME 24 TIMES	$ 480
(8) TREE MAINTENANCE	1 TIME PER YEAR	$ 50 /PER YEAR 1 YEAR	$ 50
(9) TRASH & DEBRIS REMOVAL (WEEKLY TRASH RECEPTACLE DUMPING & LETTER ABATEMENT)	1 TIME PER WEEK	$ 10 PER WEEK 52 WEEKS	$ 520
(10) PLAYGROUND/EXERCISE EQUIPMENT MAINTENANCE & REPAIRS (WEEKLY INSPECTION & MAINTENANCE/REPAIRS)	1 TIME PER WEEK	$ 5 PER WEEK 52 WEEKS	$ 260
(11) BBQ & PICNIC AREA MAINTENANCE (CLEAN OUT ANY USED BBQ; INSPECT TABLES & FURNITURE)	1 TIME PER WEEK	$ 5 PER WEEK 52 WEEKS	$ 260
		(BxC=*D) (5) SUBTOTAL	$9,950

(ITEM 6) ANNEXATION NO. 14
CALIFORNIA STREET AT ALMOND AVE – APPROXIMATELY 4,862 SQUARE FEET

A. SERVICE (SEE DEFINITIONS EXHIBIT A)	B. ANNUAL FREQUENCY	C. UNIT PRICE $	*D. ANNUAL TOTAL $
(1) TURF GRASS MOWING	4 TIMES PER MONTH	$ 25 /PER TIME 52 TIMES	$ 1,300
(2) TURF GRASS EDGING & TRIMMING	4 TIMES PER MONTH	$ 5 /PER TIME 52 WEEKS	$ 260
(3) SHRUB/VINE MAINTENANCE	2 TIMES PER MONTH	$ 5 /PER TIME 24 TIMES	$ 120
(4) BLOW/SWEEP CURB, GUTTER, HARDSCAPE	1 TIME PER WEEK	$ 5 /PER WEEK 52 TIMES	$ 260
(5) IRRIGATION MAINTENANCE & REPAIR (MONTHLY INSPECTION W/REPAIRS AS NEEDED)	1 TIME PER MONTH	$ 5 /PER MONTH 12 MONTHS	$ 60
(6) WEED CONTROL (CHEMICAL TREATMENT, MANUAL REMOVAL)	2 TIMES PER MONTH	$ 5 /PER TIME 24 TIMES	$ 120
(7) PEST CONTROL	2 TIMES PER MONTH	$ 10 /PER TIME 24 TIMES	$ 240
(8) TREE MAINTENANCE	1 TIME PER YEAR	$ 20 /PER YEAR 1 YEAR	$ 20
(9) TRASH & DEBRIS REMOVAL	1 TIME PER WEEK	$ 5 PER WEEK 52 WEEKS	$ 260
		(BxC=*D) (6) SUBTOTAL	$2,640

(ITEM 7) ANNEXATION NO. 16
DOMESTIC AVENUE, TEXAS STREET, AND CLEMENTINE STREET – APPROXIMATELY 484,833 SQUARE FEET

A. SERVICE (SEE DEFINITIONS- EXHIBIT A)	B. ANNUAL FREQUENCY	C. UNIT PRICE $	*D. ANNUAL TOTAL $
(1) TURF GRASS MOWING	4 TIMES PER MONTH DURING SUMMER (4 MONTHS) 2 TIMES PER MONTH DURING WINTER (8 MONTHS)	$ 480 /PER TIME 32 TIMES	$ 15,360
(2) TURF GRASS EDGING & TRIMMING	4 TIMES PER MONTH DURING SUMMER (4 MONTHS) 2 TIMES PER MONTH DURING WINTER (8 MONTHS)	$ 30 /PER TIME 32 TIMES	$ 960
(3) SHRUB/VINE MAINTENANCE	4 TIMES PER MONTH DURING SUMMER (4 MONTHS) 2 TIMES PER MONTH DURING WINTER (8 MONTHS)	$ 50 /PER TIME 32 TIMES	$ 1,600
(4) BLOW/SWEEP CURB, GUTTER, HARDSCAPE	1 TIME PER WEEK	$ 50 /PER WEEK 52 WEEKS	$ 2,600
(5) IRRIGATION MAINTENANCE & REPAIR (MONTHLY INSPECTION W/ REPAIRS AS NEEDED)	1 TIME PER MONTH	$ 50 /PER MONTH 12 MONTHS	$ 600
(6) WEED CONTROL (CHEMICAL TREATMENT, MANUAL REMOVAL)	4 TIMES PER MONTH DURING SUMMER (4 MONTHS) 2 TIMES PER MONTH DURING WINTER (8 MONTHS)	$ 50 /PER TIME 32 TIMES	$ 1,600
(7) PEST CONTROL	4 TIMES PER YEAR	$ 100 /PER TIME 4 TIMES	$ 400
(8) TREE MAINTENANCE	1 TIME PER YEAR	$ 50 /PER YEAR 1 YEAR	$ 50
(9)TRASH & DEBRIS REMOVAL (WEEKLY TRASH RECEPTACLE DUMPING & LETTER ABATEMENT)	1 TIME PER WEEK	$ 30 /PER WEEK 52 WEEKS	$ 1,560
(10) PLAYGROUND/EXERCISE EQUIPMENT MAINTENANCE & REPAIRS (WEEKLY INSPECTION & MAINTENANCE/REPAIRS)	1 TIME PER WEEK	$ 10 /PER WEEK 52 WEEKS	$ 520
(11) BBQ & PICNIC AREA MAINTENANCE (CLEAN OUT ANY USED BBQ; INSPECT TABLES & FURNITURE)	1 TIME PER WEEK	$ 20 /PER WEEK 52 WEEKS	$ 1,040
(12) GRAFFITI ABATEMENT (CHECK ALL AMENITIES AND FURNITURE FOR GRAFFITI & BLIGHT WEEKLY)	1 TIME PER WEEK	$ 20 /PER WEEK 52 WEEKS	$ 1,040

CONTINUED ON NEXT PAGE

(ITEM 7 CONTINUED)

(ITEM 7) ANNEXATION NO. 16
DOMESTIC AVENUE, TEXAS STREET, AND CLEMENTINE STREET – APPROXIMATELY 484,833 SQUARE FEET

ORANGE GROVES – WATERED FOR 48 HOURS EVERY 26 DAYS ON A FAN MIST SPRAY HEAD (EXISTING). BIDDER RESPONSIBLE FOR TIMER ADJUSTMENTS BASED ON STAFF RECOMMENDATIONS.			
A. SERVICE (SEE DEFINITIONS- EXHIBIT A)	B. ANNUAL FREQUENCY	C. UNIT PRICE $	*D. ANNUAL TOTAL $
(1) IRRIGATION MAINTENANCE & REPAIR (MONTHLY INSPECTION WITH REPAIRS AS NEEDED)	1 TIME PER MONTH	$ 100 /PER MONTH (12 MONTHS)	$ 1,200
(2) WEED CONTROL	4 TIMES PER MONTH DURING SUMMER (4 MONTHS) 2 TIMES PER MONTH DURING WINTER (8 MONTHS)	$ 100 /PER TIME 32 TIMES	$ 3,200
(3) PEST CONTROL	4 TIMES PER YEAR	$ 150 /PER TIME 4 TIMES	$ 600
		(BxC=*D) (7) SUBTOTAL	$32,330

TOTALING PAGE:

(ITEM 1) SUBTOTAL $14,320

(ITEM 2) SUBTOTAL $ 3,076

(ITEM 3) SUBTOTAL $ 1,640

(ITEM 4) SUBTOTAL $ 2,080

(ITEM 5) SUBTOTAL $ 9,950

(ITEM 6) SUBTOTAL $ 2,640

(ITEM 7) SUBTOTAL $32,330

GRAND TOTAL	$66,036

EXHIBIT "C"

LABOR AND MATERIAL BOND

Whereas, the City Council of the City of Redlands, State of California, and RP Landscape and Irrigation (hereinafter designated as "Principal") have entered into an agreement (the "Agreement") whereby Principal agrees to install and complete certain designated public improvements (the "Work"), which said agreement, dated February 5, 2019, and identified as agreement for the provision of landscape maintenance services at Community Facilities Districts is hereby referred to and made a part hereof; and

Whereas, under the terms of the Agreement, Principal is required before commending the performance of the Work, to file a good and sufficient Labor and Material bond with the City of Redlands to secure the claims to which reference is made in Title 3 (commencing with Section 9550) of Part 6 of Division 4 of the Civil Code of the State of California.

Now, therefore, said Principal and the undersigned as corporate surety, are held firmly bound unto the City and all contractors, subcontractors, laborers, material men and other persons employed in the performance of the Agreement and referred to in the aforesaid Code of Civil Procedure in the sum of one hundred ninety eight thousand one hundred eight dollars ($198,108) for materials furnished or labor thereon of any kind, or for amounts due under the Unemployment Insurance Act with respect to such work or labor, that said surety will pay the same in an amount not exceeding the amount hereinabove set forth, and also in case suit is brought upon this bond, will pay, in addition to the face amount thereof, costs and reasonable expenses and fees, including reasonable attorneys' fees, incurred by the City in successfully enforcing such obligation, to be awarded and fixed by the court, and to be taxed as costs and to be included in the judgment therein rendered.

It is hereby expressly stipulated and agreed that this bond shall insure to the benefit of any and all persons, companies and corporations entitled to file claims under Title 3 (commencing with Section 9550) of Part 6 of Division 4 of the Civil Code, so as to give a right of action to them or their assigns in any suit brought upon this bond.

Should the condition of this bond be fully performed, then this obligation shall become null and void, otherwise it shall be and remain in full force and effect.

The surety hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Agreement or the specifications accompanying the same shall in any manner affect its obligations on this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition.

In witness whereof, this instrument has been duly executed by the Principal and surety above named, on _____, 2019.

(SEAL)	(SEAL)
RP Landscape & Irrigation	
(Contractor)	(Surety)
	BY:
(Signature)	(Signature)
	Address:
(Seal and Notarial Acknowledgment of Surety)	Telephone( )

EXHIBIT "D"

WORKERS' COMPENSATION INSURANCE CERTIFICATION

Every employer, except the State, shall secure the payment of compensation in one or more of the following ways:

(a) By being insured against liability to pay compensation by one or more insurers duly authorized to write compensation insurance in this State.

(b) By securing from the Director of Industrial Relations, a certificate of consent to self-insure, either as an individual employer, or as one employer in a group of employers, which may be given upon furnishing proof satisfactory to the Director of Industrial Relations of ability to self-insure and to pay any compensation that may become due to his or her employees.

CHECK ONE

__X__ I am aware of the provisions of Section 3700 of the Labor Code which requires every employer to be insured against liability for Workers' Compensation or to undertake self-insurance in accordance with the provisions of that Code, and I will comply with such provisions before commencing the performance of the work and activities required or permitted under this Agreement. (Labor Code §1861).

_____ I affirm that at all times, in performing the work and activities required or permitted under this Agreement, I shall not employ any person in any manner such that I become subject to the workers' compensation laws of California. However, at any time, if I employ any person such that I become subject to the workers' compensation laws of California, immediately I shall provide the City with a certificate of consent to self-insure, or a certification of workers' compensation insurance.

I certify under penalty of perjury under the laws of the State of California that the information and representations made in this certificate are true and correct.

RP LANDSCAPE & IRRIGATION Date: 1/31/19

By: _____
Roy Perez, Owner

FIRST AMENDMENT TO AGREEMENT TO PERFORM NON-PROFESSINAL SERVICES FOR IMPROVEMENT TO PUBLIC BUILDINGS AND GROUNDS

This first amendment ("First Amendment") to the agreement for the provision of landscape maintenance services at Community Facilities Districts ("Agreement") dated February 5, 2021, by and between the City of Redlands, a municipal corporation ("City"), and RP Landscape & Irrigation, Inc., a California company ("Contractor"), is made and entered into this 18th day of January, 2022.

RECITALS

WHEREAS, the staff of the Facilities and Community Services Department administers contractual services for public landscape maintenance through the establishment of Mello-Roos Community Facilities Districts; and

WHERAS, on February 5, 2019, City Council and Contractor entered into a multi-year agreement for the provision such public landscape maintenance services; and

WHEREAS, it is the desire of City and Contractor to amend their existing Agreement to increase the amounts of annual compensation and total compensation to be paid to Contractor:

NOW, THEREFORE, City and Contractor agree as follows:

AGREEMENT

Section 1. Section 5.1 of the Agreement, titled "Payments to Contractor," is hereby amended to read as follows:

"5.1 Total compensation for Contractor's performance of the Services shall not exceed the amount of sixty six thousand thirty six dollars ($66,036) for the Services provided during the Initial Term. Should this Agreement be renewed, the compensation for Contractor's performance for the Services shall not exceed the amount of sixty six thousand thirty six dollars ($66,036) for the first Renewal Term; and shall not exceed the amount of one hundred twenty-two thousand six hundred sixty-three dollars and ninety two cents ($122,663.92) for the second Renewal Term, bringing the total possible amount of compensation to a not-to-exceed amount of two hundred fifty-four thousand seven hundred thirty five dollars and ninety two cents ($254,735.92). For the Initial Term and each Renewal Term, City shall pay Contractor on a time and materials basis up to the not-to-exceed amount in accordance with the rates specified in Exhibit "B," which is attached hereto and incorporated herein by reference."

Section 2. All other provisions of the Agreement shall remain unchanged by this First Amendment and in effect.

IN WITNESS WHEREOF, the parties have executed this First Amendment, to be effective as of January 18, 2022.

CITY OF REDLANDS

By: _____
Paul T. Barich, Mayor

ATTEST:

By: _____
Jeanne Donaldson, City Clerk

RP LANDSCAPE & IRRIGATION, INC.

By: _____
Roy Perez, Owner

EXHIBIT “1”

[ATTACHED]

BID PRICE SHEET

ANNEXATION NO. 12A **VENDOR NAME: RP Landscape & Irrigation**

LUCAS LANE WEST OF JUDSON STREET – APPROXIMATELY 21,5315 SQUARE FEET

A. SERVICE (SEE DEFINITIONS EXHIBIT A)	B. ANNUAL FREQUENCY	C. UNIT PRICE $	*D. ANNUAL TOTAL $
TURF GRASS MOWING	**1 TIME PER WEEK**	$ 137.00 ____ /PER WEEK 52 TIMES PER YEAR	$7,124.00
TURF GRASS EDGING & TRIMMING	**1 TIME PER WEEK**	$ 40.00 _____ /PER WEEK 52 TIMES PER YEAR	$2,080.00
SHRUB/VINE MAINTENANCE	**6 TIMES PER YEAR**	$ 50.00 _ /PER APPLICATION ; 6 TIMES PER YEAR	$300.00
BLOW/SWEEP CURB, GUTTER, HARDSCAPE	**1 TIME PER WEEK**	$40.00 ____ /PER WEEK 52 TIMES PER YEAR	$2,080.00
IRRIGATION MAINTENANCE & REPAIR (MONTHLY INSPECTION W/REPAIRS AS NEEDED)	**1 TIME PER MONTH**	$ 100.00_____ /PER MONTH 12 TIMES PER YEAR	$1,200.00
WEED CONTROL (CHEMICAL TREATMENT, MANUAL REMOVAL)	**1 TIME PER WEEK**	$200.00 _____/PER WEEK 52 TIMES PER YEAR	$10,400.00
PEST CONTROL	**2 TIMES PER MONTH**	$ 100.00 _/PER APPLICATION; 24 TIMES PER YEAR	$2,400.00
TREE MAINTENANCE	**1 TIME PER YEAR**	$ 200.00 ____ /PER YEAR 52 TIMES PER YEAR	$200.00
TRASH & DEBRIS REMOVAL (WEEKLY TRASH RECEPTACLE DUMPING & LETTER ABATEMENT)	**1 TIME PER WEEK**	$ 40.00 _____ /PER WEEK 52 TIMES PER YEAR	$2,080.00
PLAYGROUND/EXERCISE EQUIPMENT MAINTENANCE & REPAIRS (WEEKLY INSPECTION & MAINTENANCE/REPAIRS)	**1 TIME PER WEEK**	$ 20.00 _____ /PER WEEK 52 TIMES PER YEAR	$1,040.00
BBQ & PICNIC AREA MAINTENANCE (CLEAN OUT ANY USED BBQ; INSPECT TABLES & FURNITURE)	**1 TIME PER WEEK**	$40.00 _____ /PER WEEK 52 TIMES PER YEAR	$2,080.00
RETENTION BASIN MAINTENANCE	**2 TIMES PER YEAR**	$ 400.00 _/PER APPLICATION; 2 TIMES PER YEAR	$800.00
FERTILIZATION AND AERATION	**2 TIMES PER YEAR**	$ 500.00 __/PER APPLICATION; 2 TIMES PER YEAR	$1,000.00
DG PATHWAY AND EXERCISE PADS	**1 TIME PER WEEK**	$ 40.00 _____ /PER WEEK 52 TIMES PER YEAR	$2,080.00
(BxC=*D) ANNUAL TOTAL			**$34,864.00**
MONTHLY TOTAL			**$2,905.34**

BID PRICE SHEET
ANNEXATION NO. 12C **VENDOR NAME: RP Landscape & Irrigation**
LUCAS LN/ SAN BERNARDINO AVE – APPROXIMATELY 43,625 SQUARE FEET

A. SERVICE (SEE DEFINITIONS EXHIBIT A)	B. ANNUAL FREQUENCY	C. UNIT PRICE $	*D. ANNUAL TOTAL $
TURF GRASS MOWING	**1 TIME PER WEEK**	$ 137.00 ____ /PER WEEK 52 TIMES PER YEAR	$1,820.00
TURF GRASS EDGING & TRIMMING	**1 TIME PER WEEK**	$ 15.00 ____ /PER WEEK 52 TIMES PER YEAR	$ 780.00
SHRUB/VINE MAINTENANCE	**6 TIMES PER YEAR**	$ 38.00 ____ /PER APPLICATION; 6 TIMES PER YEAR	$228.00
BLOW/SWEEP CURB, GUTTER, HARDSCAPE	**1 TIME PER WEEK**	$ 20.00 ____ /PER WEEK 52 TIMES PER YEAR	$1,040.00
IRRIGATION MAINTENANCE & REPAIR (MONTHLY INSPECTION W/REPAIRS AS NEEDED)	**1 TIME PER MONTH**	$ 50.00 ____ /PER MONTH 12 TIMES PER YEAR	$600.00
WEED CONTROL (CHEMICAL TREATMENT, MANUAL REMOVAL)	**1 TIME PER WEEK**	$ 38.00 ____ /PER WEEK 52 TIMES PER YEAR	$1,976
PEST CONTROL	**2 TIMES PER MONTH**	$ 10.00 ____ /PER APPLICATION; 24 TIMES PER YEAR	$240.00
TREE MAINTENANCE	**1 TIME PER YEAR**	$ 200.00 ____ /PER YEAR	$200.00
FERTILIZATION AND AERATION	**2 TIMES PER YEAR**	$ 200.00 ____ /PER APPLICATION; 2 TIMES PER YEAR	$400.00
TRASH & DEBRIS REMOVAL	**1 TIME PER WEEK**	$ 10.00 ____ /PER WEEK 52 TIMES PER YEAR	$520.00
(BxC=*D) ANNUAL TOTAL			**$7,804.00**
MONTHLY TOTAL			**$650.33**

BID PRICE SHEET
ANNEXATION NO. 12D **VENDOR NAME RP LANDSCAPING & IRRIGATION**
San Bernardino Ave. & Adeline St. – APPROXIMATELY 282,654 SQUARE FEET

A. SERVICE (SEE DEFINITIONS EXHIBIT A)	B. ANNUAL FREQUENCY	C. UNIT PRICE $	*D. ANNUAL TOTAL $
SHRUB/VINE MAINTENANCE	**6 TIMES PER YEAR**	$ 400.00 ____ /PER APPLICATION; 6 TIMES PER YEAR	$2,400.00
BLOW/SWEEP CURB, GUTTER, HARDSCAPE	**1 TIME PER WEEK**	$ 25.00 ____ /PER WEEK 52 TIMES PER YEAR	$1,300.00
IRRIGATION MAINTENANCE & REPAIR (MONTHLY INSPECTION W/REPAIRS AS NEEDED)	**1 TIME PER MONTH**	$ 100.00 ____ /PER MONTH 12 TIMES PER YEAR	$1,200.00
WEED CONTROL (CHEMICAL TREATMENT, MANUAL REMOVAL)	**1 TIME PER WEEK**	$ 300.00 ____ /PER WEEK 52 TIMES PER YEAR	$15,600.00
PEST CONTROL	**2 TIMES PER MONTH**	$ 125.00 ____ /PER APPLICATION; 24 TIMES PER YEAR	$3,000.00
TREE MAINTENANCE (SMALL TREE)	**1 TIME PER YEAR**	$ 2,400.00 ____/PER YEAR	$2,400.00
TRASH & DEBRIS REMOVAL	**1 TIME PER WEEK**	$ 25.00 ____ /PER WEEK 52 TIMES PER YEAR	$1,300.00
RETENTION BASINS MAINTENANCE (*44 SMALL BASINS ALONG WABASH*)	**2 TIMES PER YEAR**	$ 600.00 ____ /PER APPLICATION; 2 TIMES PER YEAR	$1,200.00
DG PATHWAY AND EXERCISE PADS	**1 TIME PER WEEK**	$ 25.00 ____ /PER WEEK 52 TIMES PER YEAR	$1,300.00
(BxC=*D) ANNUAL TOTAL			**$29,700**
MONTHLY TOTAL			**$2,475**

BID PRICE SHEET
ANNEXATION NO. 19 **VENDOR NAME RP LANDSCAPING & IRRIGATION**
WABASH St. & SYLVAN BLVD – APPROXIMATELY 100,652 SQUARE FEET

A. SERVICE (SEE DEFINITIONS EXHIBIT A)	B. ANNUAL FREQUENCY	C. UNIT PRICE $	*D. ANNUAL TOTAL $
SHRUB/VINE MAINTENANCE	**6 TIMES PER YEAR**	$ 400.00 ____ /PER APPLICATION; 6 TIMES PER YEAR	$2,400.00
BLOW/SWEEP CURB, GUTTER, HARDSCAPE	**1 TIME PER WEEK**	$ 25.00 ____ /PER WEEK 52 TIMES PER YEAR	$1,300.00
IRRIGATION MAINTENANCE & REPAIR (MONTHLY INSPECTION W/REPAIRS AS NEEDED)	**1 TIME PER MONTH**	$ 100.00 ____ /PER MONTH 12 TIMES PER YEAR	$1,200.00
WEED CONTROL (CHEMICAL TREATMENT, MANUAL REMOVAL)	**1 TIME PER WEEK**	$ 245.00 ____ /PER WEEK 52 TIMES PER YEAR	$12,700.00
PEST CONTROL	**2 TIMES PER MONTH**	$ 125.00 ____ /PER APPLICATION; 24 TIMES PER YEAR	$3,000.00
TREE MAINTENANCE (SMALL TREE)	**1 TIME PER YEAR**	$ 1400.00 ____/PER YEAR	$1,400.00
TRASH & DEBRIS REMOVAL	**1 TIME PER WEEK**	$ 25.00 ____ /PER WEEK 52 TIMES PER YEAR	$1,300.00
RETENTION BASINS MAINTENANCE	**2 TIMES PER YEAR**	$ 600.00 ____ /PER APPLICATION; 2 TIMES PER YEAR	$1,200.00
DG PATHWAYS	**1 TIME PER WEEK**	$ 25.00 ____ /PER WEEK 52 TIMES PER YEAR	$1,300.00
(BxC=*D) ANNUAL TOTAL			**$25,800**
MONTHLY TOTAL			**$2,150**

BID PRICE SHEET
ANNEXATION NO. 20 **VENDOR NAME RP LANDSCAPING & IRRIGATION**
Citrus Ave. & Highland St. – APPROXIMATELY 92,520 SQUARE FEET

A. SERVICE (SEE DEFINITIONS EXHIBIT A)	B. ANNUAL FREQUENCY	C. UNIT PRICE $	*D. ANNUAL TOTAL $
SHRUB/VINE MAINTENANCE	**6 TIMES PER YEAR**	$ 200.00 ____ /PER APPLICATION; 6 TIMES PER YEAR	$1,200.00
BLOW/SWEEP CURB, GUTTER, HARDSCAPE	**1 TIME PER WEEK**	$ 25.00 ____ /PER WEEK 52 TIMES PER YEAR	$1,300.00
IRRIGATION MAINTENANCE & REPAIR (MONTHLY INSPECTION W/REPAIRS AS NEEDED)	**1 TIME PER MONTH**	$ 100.00 ____ /PER MONTH 12 TIMES PER YEAR	$1,200.00
WEED CONTROL (CHEMICAL TREATMENT, MANUAL REMOVAL)	**1 TIME PER WEEK**	$ 150.00 ____ /PER WEEK 52 TIMES PER YEAR	$7,800.00
PEST CONTROL	**2 TIMES PER MONTH**	$ 42.50 ____ /PER APPLICATION; 24 TIMES PER YEAR	$1,020.00
TREE MAINTENANCE (SMALL TREE)	**1 TIME PER YEAR**	$ 1,120.00 ____/PER YEAR	$1,120.00
TRASH & DEBRIS REMOVAL	**1 TIME PER WEEK**	$ 25.00 ____ /PER WEEK 52 TIMES PER YEAR	$1,300.00
RETENTION BASINS MAINTENANCE (*44 SMALL BASINS ALONG WABASH*)	**2 TIMES PER YEAR**	$ 600.00 ____ /PER APPLICATION; 2 TIMES PER YEAR	$1,200.00
DG PATHWAY AND EXERCISE PADS	**1 TIME PER WEEK**	$ 25.00 ____ /PER WEEK 52 TIMES PER YEAR	$1,300.00
(BxC=*D) ANNUAL TOTAL			**$17,440.00**
MONTHLY TOTAL			**$1,453.00**

BID PRICE SHEET

ANNEXATION NO. 21 **VENDOR NAME RP LANDSCAPING & IRRIGATION**

PENNSYLVANNIA AVE / LUGONIA AVE – APPROXIMATELY 147,134 SQUARE FEET

A. SERVICE (SEE DEFINITIONS EXHIBIT A)	B. ANNUAL FREQUENCY	C. UNIT PRICE $	*D. ANNUAL TOTAL $
TURF GRASS MOWING	**1 TIME PER WEEK**	$ 261.00 ____ /PER WEEK 52 TIMES PER YEAR	$13,572.00
TURF GRASS EDGING & TRIMMING	**1 TIME PER WEEK**	$ 40.00 ____ /PER WEEK 52 TIMES PER YEAR	$2080.00
SHRUB/VINE MAINTENANCE	**6 TIMES PER YEAR**	$ 38.00 ____ /PER WEEK 6 TIMES PER YEAR	$228.00
BLOW/SWEEP CURB, GUTTER, HARDSCAPE	**1 TIME PER WEEK**	$ 40.00 ____ /PER WEEK 52 TIMES PER YEAR	$2080.00
IRRIGATION MAINTENANCE & REPAIR (MONTHLY INSPECTION W/REPAIRS AS NEEDED)	**1 TIME PER MONTH**	$ 50.00 ____ /PER WEEK 12 TIMES PER YEAR	$600.00
WEED CONTROL (CHEMICAL TREATMENT, MANUAL REMOVAL)	**1 TIME PER WEEK**	$ 85.00 ____ /PER WEEK 52 TIMES PER YEAR	$4,420
PEST CONTROL	**2 TIMES PER MONTH**	$ 20.00 ____ /PER WEEK 24 TIMES PER YEAR	$480.00
TREE MAINTENANCE	**1 TIME PER YEAR**	$ 200.00 ____ /PER YEAR	$200.00
TRASH & DEBRIS REMOVAL (WEEKLY TRASH RECEPTACLE DUMPING & LETTER ABATEMENT)	**1 TIME PER WEEK**	$ 200.00 ____ /PER WEEK 52 TIMES PER YEAR	$1,040.00
PLAYGROUND/EXERCISE EQUIPMENT MAINTENANCE & REPAIRS (WEEKLY INSPECTION & MAINTENANCE/REPAIRS)	**1 TIME PER WEEK**	$ 15.00 ____ /PER WEEK 52 TIMES PER YEAR	$780.00
BBQ& PICNIC AREA MAINTENANCE (CLEAN OUT ANY USED BBQ; INSPECT TABLES & FURNITURE)	**2 TIMES PER YEAR**	$ 50.00 ____ /PER WEEK 2 TIMES PER YEAR	$100.00
FERTILIZATION AND AERATION	**1 TIME PER WEEK**	$ 10.00 ____ /PER WEEK 52 TIMES PER YEAR	$520.00
RETENTION BASIN MAINTENANCE	**1 TIME PER WEEK**	$ 20.00 ____ /PER WEEK 52 TIMES PER YEAR	$1,040.00
DG PATHWAY AND EXERCISE PADS	**1 TIME PER WEEK**	$ 10.00 ____ /PER WEEK 52 TIMES PER YEAR	$520.00
(BXC=*D) ANNUAL TOTAL			**$27,660.00**
MONTHLY TOTAL			**$2,475.00**

"A City That Works"

City Council/Financing Authority Meeting **L. 3.**

DATE: 01/18/2022

TO: Honorable Mayor and City Council Members

SUBJECT: Consideration of a Professional Services Agreement with Carollo Engineers for the WWTP Recycled Water Reservoir Engineering Project, an additional appropriation in the amount of $734,839 from the Non-Potable Capital Improvement Fund (532), which is a Development Impact Fee Fund, and determine that these actions are exempt from review pursuant to Section 15061(b)(3) of the State's guidelines implementing the California Environmental Quality Act (Municipal Utilities and Engineering Department Director Harris)

MOTION(S):

If the City Council determines that staff's recommendation is appropriate, the following motions are provided:

1. I move that the City Council determine approval of a Professional Services Agreement with Carollo Engineers is exempt from environmental review pursuant to Section 15061(b)(3) of the State's guidelines implementing the California Environmental Quality Act; and,

2. I move approval of an additional expenditure appropriation of $734,839 from the Non-Potable Capital Improvement Fund (532), which is a Development Impact Fee Fund; and,

3. I move that the City Council approve a Professional Services Agreement with Carollo Engineers for the WWTP Recycled Water Reservoir Engineering Project in an amount not-to-exceed $734,839.

RECOMMENDATION:

Staff recommends City Council determine approval of a Professional Services Agreement with Carollo Engineers for the WWTP Recycled Water Reservoir Engineering Project is exempt from environmental review pursuant to Section 15061(b)(3) of the State's guidelines implementing the California Environmental Quality Act, approval of an additional expenditure appropriation of $734,839 from the Non-Potable Capital Improvement Fund (532), which is a Development Impact Fee Fund, and approval a Professional Services Agreement with Carollo Engineers in an amount not-to-exceed $734,839.

DISCUSSION:

The City of Redlands Municipal Utilities and Engineering Department (MUED) produces and distributes potable, non-potable, and recycled water to customers within its service area. MUED discourages the use of potable water for outdoor landscape irrigation and other non-consumptive uses, and produces more than 5,000 acre-feet of recycled water through its wastewater treatment plant (WWTP). Southern California Edison is entitled to use this recycled water through a "take-or-pay" agreement, although the utility provider typically uses only a small portion. The remainder is discharged into percolation ponds at the WWTP. Pending recycled water customer applications cannot be processed without additional recycled water storage facilities. The intent of this project is to engineer two (2) 1.5 MG recycled water reservoirs at the WWTP to store this water for a more beneficial use. One (1) reservoir is scheduled for construction in FY 22/23, and the second reservoir is scheduled for construction in FY 23/24.

On October 25, 2021, MUED issued a Request for Proposals to qualified consultants to prepare construction plans and specifications for this project. On November 15, 2021, proposals were received from the following consultants:

1. Albert A. Webb Associates (Riverside, CA)
2. Carollo Engineers (Riverside, CA)
3. Richard Brady & Associates (San Diego, CA)

In accordance with Chapter 2.16.180 of the Redlands Municipal Code, a committee reviewed each proposal and identified Carollo Engineers as the most qualified consultant to complete this project. Staff negotiated a reasonable consultant fee and recommends City Council approval of a Professional Services Agreement with Carollo Engineers in an amount not-to-exceed $734,839. Carollo Engineers has successfully completed projects similar in scope and size, and was recommended by references contacted by MUED staff. This project requires an additional appropriation of $734,839 from the Non-Potable Capital Improvement Fund (532), which is a Development Impact Fee Fund.

Approval of this Agreement is exempt from environmental review pursuant to Section 15061(b)(3) of the State's guidelines implementing the California Environmental Quality Act as there is no possibility this action will result in any significant impact to the environment.

ALTERNATIVES:

City Council may elect to deny approval of the staff recommendation.

STRATEGIC PLAN:

N/A

SUBMITTED BY:
John R. Harris, MUED Director

RECOMMENDED BY:
Charles M. Duggan Jr., City Manager

REVIEWED BY:
Daniel J. McHugh, City Attorney
Janice McConnell, Assistant City Manager
Danielle Garcia, Management Services/Finance Director

PREPARED BY:
John R. Harris, MUED Director

Fiscal Impact

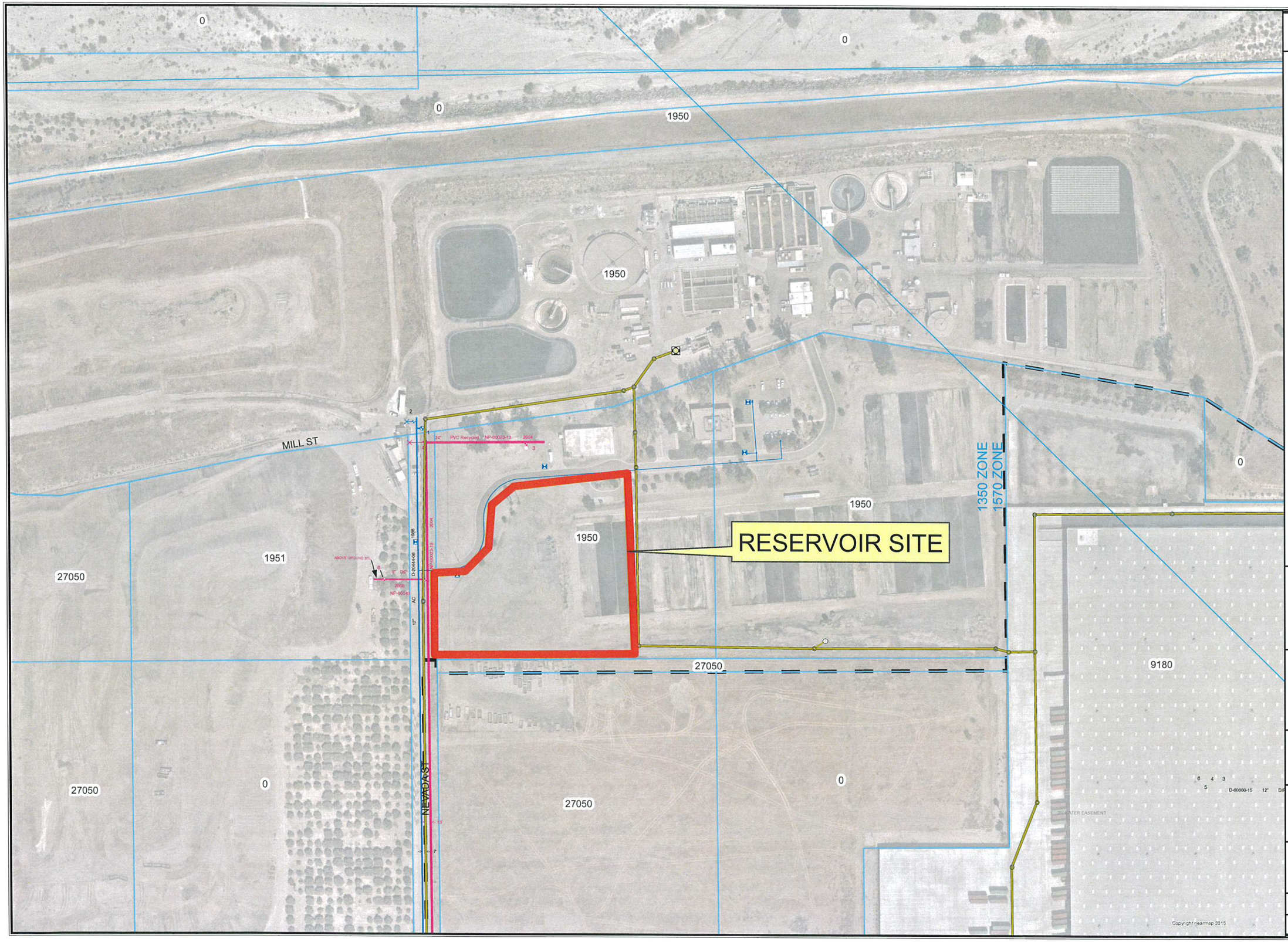
Fiscal Year:	FY 21/22
Revenue Generating:	N
Appropriation Required Y/N:	Y
Amount:	734,839
Budgeted Y/N:	N
Account No.:	532920-8402

Discussion:

This project requires an additional expenditure appropriation of $734,839 from the Non-Potable Capital Improvement Fund (532), which is a Development Impact Fee Fund. The current estimated unrestricted cash balance of the Non-Potable Water Development Impact Fee Fund (532) is $1,600,883, therefore, there are sufficient funds available.

Attachments

Project Location Map
Agreement
Additional Appropriation Form



Title

WWTP
RECYCLED WATER
RESERVOIR
ENGINEERING

1" = 200'

This map was produced by the City of Redlands, Geographic Information System.
The City of Redlands assumes no warranty or legal responsibility for the information contained on this map.
The data used to generate this map is dynamic in nature, therefore the information shown may or may not be the most current.

N
W E
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Scale
0 160 320
Feet

City of Redlands
Department of Innovation & Technology
Geographic Information Systems

City of REDLANDS "A City That Works"

October 22, 2021

OneStop.mxd

AGREEMENT TO PERFORM PROFESSIONAL SERVICES

This agreement for the provision of professional engineering services ("Agreement") is made and entered in this 18th day of January, 2022 ("Effective Date"), by and between the City of Redlands, a municipal corporation ("City") and Carollo Engineers, Inc., a Delaware corporation ("Consultant"). City and Consultant are sometimes individually referred to herein as a "Party" and, together, as the "Parties." In consideration of the mutual promises contained herein, City and Consultant agree as follows:

ARTICLE 1 – ENGAGEMENT OF CONSULTANT

1.1 City hereby engages Consultant to design and prepare plans and specifications for City for two (2) recycled water reservoirs to be constructed in the future at the City of Redlands Wastewater Treatment Plant (the "Services").

1.2 The Services shall be performed by Consultant in a professional manner, and Consultant represents that it has the skill and the professional expertise necessary to provide the Services to City at a level of competency presently maintained by other practicing professional consultants in the industry providing like and similar types of Services.

ARTICLE 2 – SERVICES OF CONSULTANT

2.1 The Services that Consultant shall perform are more particularly described in Exhibit "A," titled "Scope of Services," which is attached hereto and incorporated herein by reference.

2.2 Consultant shall comply with applicable federal, state and local laws and regulations in the performance of this Agreement including, but not limited to, any applicable State prevailing wage laws.

2.3 Consultant shall not be liable to and/or indemnify City and/or any third party related to any inconsistencies between Consultant's data projections and estimates and actual costs and/or quantities realized by City and/or any third party in the future, except to the extent such inaccuracies are caused by Consultant's negligent performance hereunder.

ARTICLE 3 – RESPONSIBILITIES OF CITY

3.1 City designates John R. Harris, Municipal Utilities and Engineering Department Director, as City's representative with respect to performance of the Services, and such person shall have the authority to transmit instructions, receive information, interpret and define City's policies and decisions with respect to performance of the Services.

3.2 City shall furnish Consultant available studies, reports and other data pertinent to Consultant's services; obtain or authorize Consultant to obtain or provide additional reports and data as required; furnish to Consultant services of others required for the performance of Consultant's services hereunder, and Consultant shall be entitled to use

and reasonably rely upon all such information and services provided by City or others in performing Consultant's services under this Agreement.

3.3 Documents, including drawings and specifications, prepared by Consultant pursuant to this Agreement are not intended or represented to be suitable for reuse by City or others for this project or on any other project. Any reuse of completed documents or use of partially completed documents without written verification or concurrence by Consultant for the specific purpose intended will be at City's sole risk and without liability or legal exposure to Consultant.

3.4 City shall arrange for access to and make all provisions for Consultant to enter upon public and private property as required for Consultant to perform services hereunder.

ARTICLE 4 – PERFORMANCE OF SERVICES

4.1 Consultant shall perform and complete the Services in a prompt and diligent manner in accordance with the schedule set forth in Exhibit "A," titled "Consultant Proposal," which is attached hereto and incorporated herein by reference.

4.2 The term of this Agreement shall be for a period of eighteen (18) months from the Effective Date of this Agreement, unless terminated earlier as provided herein.

4.3 If Consultant's Services include deliverable electronic visual presentation materials, such materials shall be delivered in a form, and made available to City, consistent with City Council-adopted policy for the same. It shall be the obligation of Consultant to obtain a copy of such policy from City staff.

4.4 Consultant is not responsible for damage or delay in performance caused by events beyond the reasonable control of Consultant. In the event Consultant's services are suspended, delayed or interrupted for the convenience of City or delays occur beyond the reasonable control of Consultant, an equitable adjustment in Consultant's time of performance and cost of Consultant's personnel and subcontractors may be made.

ARTICLE 5 – PAYMENTS TO CONSULTANT

5.1 Total compensation for Consultant's performance of the Services shall not exceed the amount of seven hundred thirty four thousand eight hundred thirty nine dollars ($734,839). City shall pay Consultant on a time and materials basis up to the not to exceed amount in accordance with Exhibit "B," titled "Cost Proposal," which is attached hereto and incorporated herein by reference.

5.2 Consultant shall submit monthly invoices to City describing the Services performed during the preceding month. Consultant's invoices shall include a brief description of the Services performed, the dates the Services were performed, the number of hours spent and by whom, and a description of reimbursable expenses related to the Services. City

shall pay Consultant no later than thirty (30) days after receipt and approval by City of Consultant's invoice.

5.3 Any notice or other communication required, or which may be given, pursuant to this Agreement, shall be in writing. Any such notice shall be deemed delivered (i) on the date of delivery in person; (ii) five (5) days after deposit in first class registered mail, with return receipt requested; (iii) on the actual delivery date if deposited with an overnight courier; or (iv) on the date sent by facsimile or electronic mail transmission (including PDF), if confirmed with a copy sent contemporaneously by first class, certified, registered or express mail; in each case properly posted and fully prepaid to the appropriate address set forth below, or such other address as a Party may provide notice in accordance with this section:

CITY:	CONSULTANT:
John R. Harris, MUED Director	Graham J.G. Juby, Senior Project Manager
City of Redlands	Carollo Engineers, Inc.
35 Cajon Street, Suite 15A	3400 Central Avenue, Suite 205
P.O. Box 3005 (mailing)	Riverside, CA 92506
Redlands, CA 92373	GJGJuby@carollo.com
jharris@cityofredlands.org	Phone: (951) 776-3955
Phone: (909) 798-7658	Fax: (951) 776-4207

ARTICLE 6 – INSURANCE AND INDEMNIFICATION

6.1 The following insurance coverage required by this Agreement shall be maintained by Consultant for the duration of its performance of the Services. Consultant shall not perform any Services unless and until the required insurance listed below is obtained by Consultant. Consultant shall provide City with certificates of insurance and endorsements evidencing such insurance prior to commencement of the Services. Insurance policies shall include a provision prohibiting cancellation or modification of the policy except upon thirty (30) days prior written notice to City.

A. Workers' Compensation and Employer's Liability insurance in the amount that meets statutory requirements with an insurance carrier acceptable to City, or certification to City that Consultant is self-insured or exempt from the workers' compensation laws of the State of California. Consultant shall execute and provide City with Exhibit "C," titled "Workers' Compensation Insurance Certification," which is attached hereto and incorporated herein by this reference, prior to performance of the Services.

B. Comprehensive General Liability insurance with carriers acceptable to City in the minimum amount of One Million Dollars ($1,000,000) per occurrence and Two Million Dollars ($2,000,000) aggregate, for public liability, property damage and personal injury is required. City shall be named as an additional insured and such insurance shall be primary and non-contributing to any insurance or self-insurance maintained by City.

C. Consultant shall secure and maintain professional liability insurance throughout the term of this Agreement in the amount of One Million Dollars ($1,000,000) per claim made.

D. Business Auto Liability coverage, with minimum limits of One Million Dollars ($1,000,000) per occurrence, combined single limit bodily injury liability and property damage liability. This coverage shall include all Consultant owned vehicles used in connection with Consultant's provision of the Services, hired and non-owned vehicles, and employee non-ownership vehicles. City shall be named as an additional insured and such insurance shall be primary and non-contributing to any insurance or self-insurance maintained by City.

E. Consultant is expressly prohibited from assigning or subcontracting any of the Services without the prior written consent of City. In the event of mutual agreement by the Parties to assign or subcontract a portion of the Services, Consultant shall add such assignee or subcontractor as an additional insured to the insurance policies required hereby and provide City with the insurance endorsements prior to any Services being performed by the assignee or subcontractor.

6.2 Consultant shall defend, indemnify and hold harmless City and its elected and appointed officials, employees and agents from and against any and all claims, losses or liability, including attorneys' fees, arising from injury or death to persons or damage to property to the extent caused by any negligent act or omission by, or the willful misconduct of, Consultant, or its officers, employees and agents in performing the Services. In no event shall the cost to defend charged to Consultant exceed Consultant's proportionate percentage of fault.

ARTICLE 7 – CONFLICTS OF INTEREST

7.1 Consultant covenants and represents that it does not have any investment or interest in any real property that may be the subject of this Agreement or any other source of income, interest in real property or investment that would be affected in any manner or degree by the performance of Consultant's Services. Consultant further covenants and represents that in the performance of its duties hereunder, no person having any such interest shall perform any Services under this Agreement.

7.2 Consultant agrees it is not a designated employee within the meaning of the Political Reform Act because Consultant:

A. Does not make a governmental decision whether to:

(i) approve a rate, rule or regulation, or adopt or enforce a City law;
(ii) issue, deny, suspend or revoke any City permit, license, application, certification, approval, order or similar authorization or entitlement;
(iii) authorize City to enter into, modify or renew a contract;
(iv) grant City approval to a contract that requires City approval and to which

City is a party, or to the specifications for such a contract;

(v) grant City approval to a plan, design, report, study or similar item;

(vi) adopt, or grant City approval of, policies, standards or guidelines for City or for any subdivision thereof.

B. Does not serve in a staff capacity with City and in that capacity, participate in making a governmental decision or otherwise perform the same or substantially the same duties for City that would otherwise be performed by an individual holding a position specified in City's Conflict of Interest Code under Government Code section 87302.

7.3 In the event City determines that Consultant must disclose its financial interests, Consultant shall complete and file a Fair Political Practices Commission Form 700, Statement of Economic Interests, with the City Clerk's office pursuant to the written instructions provided by the City Clerk.

ARTICLE 8 – GENERAL CONSIDERATIONS

8.1 In the event any action is commenced to enforce or interpret any of the terms or conditions of this Agreement the prevailing Party shall, in addition to any costs and other relief, be entitled to the recovery of its reasonable attorneys' fees, including fees for the use of in-house counsel by a Party.

8.2 Consultant shall not assign any of the Services, except with the prior written approval of City and in strict compliance with the terms and conditions of this Agreement. Any assignment or attempted assignment without such prior written consent may, in the sole discretion of City, result in City's immediate termination of this Agreement.

8.3 Consultant is for all purposes under this Agreement an independent contractor and shall perform the Services as an independent contractor. Neither City nor any its agents shall have control over the conduct of Consultant or Consultant's employees, except as herein set forth. Consultant shall supply all necessary tools and instrumentalities required to perform the Services. Assigned personnel employed by Consultant are for its account only, and in no event shall Consultant or personnel retained by it be deemed to have been employed by City or engaged by City for the account of, or on behalf of City. Consultant shall have no authority, express or implied, to act on behalf of City in any capacity whatsoever as an agent, nor shall Consultant have any authority, express or implied, to bind City to any obligation.

8.4 This Agreement may be terminated by City, in its sole discretion, by providing not less than five (5) days prior written notice to Consultant of City's intent to terminate. If this Agreement is terminated by City, an adjustment to Consultant's compensation shall be made, but (1) no amount shall be allowed for anticipated profit or unperformed Services, and (2) any payment due Consultant at the time of termination may be adjusted to the extent of any additional costs to City occasioned by any default by Consultant. Upon receipt of a termination notice, Consultant shall immediately discontinue its provision of

the Services and, within five (5) days of the date of the termination notice, deliver or otherwise make available to City, copies (in both hard copy and electronic form, where applicable) of project related data, design calculations, drawings, specifications, reports, estimates, summaries and such other information and materials as may have been accumulated by Consultant in performing the Services. Consultant shall be compensated on a pro-rata basis for Services completed up to the date of termination.

8.5 Consultant shall maintain books, ledgers, invoices, accounts and other records and documents evidencing costs and expenses related to the Services for a period of three (3) years, or for any longer period required by law, from the date of final payment to Consultant pursuant to this Agreement. Such books shall be available at reasonable times for examination by City at the office of Consultant.

8.6 This Agreement, including the Exhibits incorporated herein by reference, represents the entire agreement and understanding between the Parties as to the matters contained herein, and any prior negotiations, written proposals or verbal agreements relating to such matters are superseded by this Agreement. Except as otherwise provided for herein, any amendment to this Agreement shall be in writing, approved by City and signed by City and Consultant.

8.7 This Agreement shall be governed by and construed in accordance with the laws of the State of California, without regard to its conflicts of laws provisions. The Parties agree that all actions or proceedings arising in connection with this Agreement shall be tried and litigated only in the state courts located in San Bernardino County, California, and the federal courts located in Riverside County, California.

8.8 If one or more of the sentences, clauses, paragraphs or sections contained in this Agreement is declared invalid, void or unenforceable by a court of competent jurisdiction, the same shall be deemed severable from the remainder of this Agreement and shall not affect, impair or invalidate the remaining sentences, clauses, paragraphs or sections contained herein, unless to do so would deprive a Party of a material benefit of its bargain under this Agreement.

8.9 The services to be performed by Consultant are intended solely for the benefit of City. No person or entity not a signatory to this Agreement shall be entitled to rely on Consultant's performance of its services hereunder, and no right to assert a claim against Consultant by assignment of indemnity rights or otherwise shall accrue to a third party as a result of this Agreement or the performance of Consultant's services hereunder.

IN WITNESS WHEREOF, duly authorized representatives of City and Consultant have signed in confirmation of this Agreement.

CITY OF REDLANDS

By: _____
Paul T. Barich, Mayor

ATTEST:

_____
Jeanne Donaldson, City Clerk

CAROLLO ENGINEERS, INC.

By: _____
Graham J.G. Juby, Senior Project Manager

By: _____
Eric M. Mills, Client Services Director

EXHIBIT “A”

SCOPE OF SERVICES

[ATTACHED]

EXHIBIT “B”

COST PROPOSAL

[ATTACHED]

EXHIBIT "D"

WORKERS' COMPENSATION INSURANCE CERTIFICATION

Every employer, except the State, shall secure the payment of compensation in one or more of the following ways:

(a) By being insured against liability to pay compensation by one or more insurers duly authorized to write compensation insurance in this State.

(b) By securing from the Director of Industrial Relations, a certificate of consent to self-insure, either as an individual employer, or as one employer in a group of employers, which may be given upon furnishing proof satisfactory to the Director of Industrial Relations of ability to self-insure and to pay any compensation that may become due to his or her employees.

CHECK ONE

_____I am aware of the provisions of Section 3700 of the Labor Code which requires every employer to be insured against liability for Workers' Compensation or to undertake self-insurance in accordance with the provisions of that Code, and I will comply with such provisions before commencing the performance of the work and activities required or permitted under this Agreement. (Labor Code §1861).

_____I affirm that at all times, in performing the work and activities required or permitted under this Agreement, I shall not employ any person in any manner such that I become subject to the workers' compensation laws of California. However, at any time, if I employ any person such that I become subject to the workers' compensation laws of California, immediately I shall provide the City with a certificate of consent to self-insure, or a certification of workers' compensation insurance.

I certify under penalty of perjury under the laws of the State of California that the information and representations made in this certificate are true and correct.

CAROLLO ENGINEERING, INC.

By:_____ Date: _____

Graham J.G. Juby, Senior Project Manager

CITY OF REDLANDS
REQUEST FOR ADDITIONAL APPROPRIATION

DATE OF REQUEST: 1/18/2022

FINANCE USE ONLY
TRANSACTION NO:
ACCOUNTING PERIOD:

An additional appropriation is hereby requested as follows:

Department: MUED

EXPENDITURE APPROPRIATION INCREASE (if applicable)				
Account Description	**Orgkey**	**Object Code**	**Job Ledger (If applicable)**	**Amount**
Non-Potable Water Projects	532910	8402		$ 734,839.00
			$	$ 734,839.00

REVENUE APPROPRIATION INCREASE (if applicable)				
Account Description	**Orgkey**	**Object Code**	**Job Ledger (If applicable)**	**Amount**
			$	$ 0.00

JUSTIFICATION: Use of available Development Impact Fees to Engineer two (2) recycled water reservoirs to expand storage capacity for expanding customer base.

Requested By: John R Harris
Department Head

Recommended By Finance Director:

Yes X No ____ Signed ____

Recommended: ____
City Manager

Comments: ____

Approved by City Council:

Date: ____

Signed: ____
City Clerk

"A City That Works"

City Council/Financing Authority Meeting **O. 3.**

DATE: 01/18/2022

TO: Honorable Mayor and City Council Members

SUBJECT: Approve the minutes of the regular meeting of September 21, 2021 (Secretary Donaldson)

MOTION:

I move to approve the minutes of the regular meeting of September 21, 2021.

Attachments

Minutes of the regular meeting of September 21, 2021

MINUTES

Regular meetings of the City Council and the Redlands Financing Authority of the City of Redlands held in the Council Chambers, Civic Center, 35 Cajon Street, on September 21, 2021 at 5:00 P.M.

Present:	Paul Barich, Mayor Eddie Tejeda, Mayor Pro Tempore Denise Davis, Council Member Jenna Guzman-Lowery, Council Member
Absent:	Paul Foster, Council Member
Staff:	Charles M. Duggan, Jr., City Manager; Dan McHugh, City Attorney; Robert Dawes, City Treasurer; Jeanne Donaldson, City Clerk; Carl Baker, Public Information Officer; Chris Catren, Police Chief; Danielle Garcia, Management Services/Finance Director; Chris Boatman, Facilities and Community Services Director; Brian Desatnik, Development Services Director; Jim Topoleski, Fire Chief; John Harris, Municipal Utilities and Engineering Director; Janice McConnell, Assistant City Manager

Mayor Barich called the meeting to order and offered those present the opportunity to provide public comment on any item on the agenda for the closed session.

PUBLIC COMMENT

None forthcoming

CLOSED SESSION

Conference with real property negotiators - Government Code §54956.8
(Facilities and Community Services Director Boatman)

Property:	APNs 0168-031-12-0000
Agency Negotiators:	Charles M. Duggan, Jr.; Chris Boatman
Negotiating Party:	Gil Brown, Coyote Aviation
Under Negotiation:	Terms of payment and price of possible lease of City property

Conference with legal counsel: Existing Litigation - Government Code §54956.9(d)(1)
(City Attorney McHugh)
One Case:

a. Daniel, Ruth vs. City of Redlands, et al., San Bernardino County Superior Court Case Number CIVDS 2015572

Public Employee Performance Evaluation - Government Code §54957

a. City Manager

Conference with labor negotiator - Government Code §54957.6
(Assistant City Manager McConnell)

Agency Negotiators:	Mayor Barich and Mayor Pro Tem Tejeda
Unrepresented Employee:	City Manager

RECONVENE CITY COUNCIL MEETING

The meeting reconvened at 6:00 P.M.

PUBLIC HEARING

2021 By-District Council Member Election Boundaries

Mayor Barich declared the meeting open as a public hearing and called upon Development Services Director Desatnik who briefly discussed the review process required to consider the 2021 Council Member Election Boundaries. He explained the intent of this hearing was to receive public input and testimony and introduced Jeff Simonetti, of National Demographics Corporation (NDC), the consulting firm specializing in the California Voting Rights Act of 2001 (CVRA) to assist with the potential redistricting of current Council district boundaries. Mr. Simonetti provided a detailed presentation, including project timelines, key deadlines, redistricting rules and goals, a demographic summary of the City's existing districts, a review of protected classes and communities of interest. He announced the new Census data was released on September 20, 2021.

On Thursday, September 30, the Development Services Department will conduct a public workshop via Zoom at 5:00 p.m. to seek public input and provide direction on criteria to be considered while drafting district maps. Following that workshop, draft district maps and proposed election sequencing will be posted to the City website and available at City Hall. Future hearing dates to consider draft maps will be held on January 18 and February 15, and will be followed by a hearing on the proposed ordinance on March 1, with the ordinance adoption hearing scheduled for March 15, 2022. The City's deadline to adopt and submit the approved map to San Bernardino County Registrar of Voters is April 17, 2022. As public comment, Dennis Bell was opposed to gerrymandering, and he suggested District 5 boundaries should be modified to include portions of the downtown area, like the other four districts. One written comment was received recommending districts should not be drawn to protect current Council Members. With no further discussion, the Mayor closed the public hearing.

PLEDGE OF ALLEGIANCE

Mayor Barich delivered an invocation followed by the pledge of allegiance to the American flag.

CLOSED SESSION REPORT

City Attorney McHugh announced that no reportable action was taken during the closed session.

PUBLIC COMMENT

Oriental Avenue Name Change - Rob McDermott spoke in support of a proposal to rename Oriental Avenue to Al Harris Avenue, in memory of the man known to the community as the "Movie Man". The proposal's goal was not to erase history but instead to enhance it by honoring the telling of the history and contributions of the Asian American presence in Redlands. He suggested a walking plaque display, a pocket park and a display in the new commuter train depot that would contain artifacts discovered in the area.

City Survey - Dennis Bell voiced various questions and concerns with the recent survey conducted by the City and wondered if the results would be rigged to make the City look good. He requested to see survey statistics, such as how many people actually responded.

CONSENT CALENDAR

Minutes

On motion of Mayor Pro Tempore Eddie Tejeda, seconded by Council Member Denise Davis, the City Council approved the minutes of the regular meeting of September 7, 2021.

Vote: 4 - 0

Proclamation Beaver Medical Group's 75th Anniversary

In honor of Beaver Medical Group's 75th Anniversary, Mayor Barich presented a Proclamation to Sameh Naseib, M.D., Charles Chen, M.D., Sherif Khalil, M.D., Steven Rimmer, M.D. and Raymond Chan, M.D., recognizing the high quality of care provided by the Medical Group to Redlands and the surrounding communities.

On motion of Council Member Jenna Guzman-Lowery, seconded by Council Member Denise Davis, the City Council approved the issuance of a Proclamation recognizing Beaver Medical Group's 75th Anniversary.

Vote: 4 - 0

Emergency Resolution No. 8065 COVID-19

On motion of Mayor Pro Tempore Eddie Tejeda, seconded by Council Member Denise Davis, the City Council approved the Report regarding Emergency Resolution No. 8065 proclaiming the existence of a local emergency in response to COVID-19 (Coronavirus Disease 2019).

Vote: 4 - 0

Resolution No. 8260 & City's Deferred Compensation Program

On motion of Mayor Pro Tempore Eddie Tejeda, seconded by Council Member Denise Davis, the City Council approved the Plan Documents with Nationwide Financial Services for the City's Deferred Compensation Program; and approved Resolution No. 8260 authorizing the City Manager, or his or her designee, to review and execute plan documents in support of the administration of the City's Deferred Compensation Program.

Vote: 4 - 0

Cooperative Agreement Pavement Program City of Yucaipa

On motion of Mayor Pro Tempore Eddie Tejeda, seconded by Council Member Denise Davis, the City Council determined that approval of the Cooperative Agreement with the City of Yucaipa is exempt from environmental review pursuant to Section 15061(b)(3) of the State's guidelines implementing the California Environmental Quality Act; and approved the Cooperative Agreement with the City of Yucaipa delineating responsibilities for rehabilitating 16th Street, 18th Street, and Florida Street paving during the Pavement Management Program 2021 Street Resurfacing Project.

Vote: 4 - 0

Cellular Towers Ownership Transfer

On motion of Mayor Pro Tempore Eddie Tejeda, seconded by Council Member Denise Davis, the City Council determined that acceptance of a Consent Request related to ownership transfer of cellular towers located at the Sunset Reservoir site is exempt from environmental review under Section 15061(b)(3) of the State's guidelines implementing the California Environmental Quality Act; and accepted a Consent Request with Md7 related to ownership transfer of cellular towers located at the Sunset Reservoir site.

Vote: 4 - 0

Food Stand License Agreement

On motion of Mayor Pro Tempore Eddie Tejeda, seconded by Council Member Denise Davis, the City Council determined that approval of the License Agreement with Juan Morales is exempt from environmental review pursuant to Section 15301 of the California Environmental Quality Act Guidelines; and approved the License Agreement with Juan Morales for a food stand at the City's Corporate Yard, 1270 W. Park Avenue.

Vote: 4 - 0

Consulting Agreement Airport Layout Plan

On motion of Mayor Pro Tempore Eddie Tejeda, seconded by Council Member Denise Davis, the City Council determined that approval of the agreement with Coffman Associates, Inc. is categorically exempt from environmental review pursuant to Section 15301 of State's guidelines implementing the California Environmental Quality Act; approved an additional appropriation in the amount of $194,363 from the Airport Projects and Grants fund; and approved the agreement with Coffman Associates, Inc. in the amount of $194,363.

Vote: 4 - 0

License Agreement Zanja Trail Construction

On motion of Mayor Pro Tempore Eddie Tejeda, seconded by Council Member Denise Davis, the City Council approved a License Agreement with W. Wood & Associates Development, Inc. authorizing construction of the Zanja Trail between Church Street and 7th Street.

Vote: 4 - 0

COMMUNICATIONS

Video Series: Working for You

Public Information Officer Baker presented a new video from the video series "Working for You: Making Redlands a Better Place." This month's video highlighted Loralee Farris, Principal Planner. Filming and production work was performed by Cheryl Williams, Multimedia Production Coordinator.

PUBLIC HEARINGS

Development Project MLC Holdings, Inc.

Mayor Barich opened the public hearing and called on Project Planner Sean Reilly, of Development Services, for an overview of the development applications related to 58.6 gross acres of land located on the north side of Domestic Avenue, approximately 625 feet west of Texas Street, and on the east side of Interstate 210. The project proposes to construct a total of 317 single family one-story and two-story homes, new interior streets to serve the project, private recreational open space areas and on-site amenities, landscape and lighting, a new 11.84-acre public park for active recreation, and related improvements including drainage basins and public/private utility connections. The park will be available for use as a public park. Aaron Talorico, of MLC Holdings, Inc, the Applicant, and Pat Meyer presented additional detail and pointed out this project will offer much needed entry-level workforce housing. The developer was in agreement with all the Conditions of Approval but requested an extra two weeks to finalize plans for a secondary access point to address concerns.

As public comment, Jennifer Forsythe, representing her grandfather William Cunningham, said the Mitigated Negative Declaration was not appropriate for this project because of the loss of prime agricultural land and in his opinion, Council should deny the project and a full Environmental Impact Report should be performed. Gail Howard questioned whether football fields were being considered for the public park rather than only soccer and baseball. Facilities and Community Services Director Boatman confirmed the fields are intended to be multi-use and football was part of the equation. Edward Bonadiman and Gilberto Gil stressed the need for a secondary access point for the project. Six written comments were received declaring various perspectives of the project.

On motion of Mayor Pro Tempore Eddie Tejeda, seconded by Council Member Denise Davis, the City Council approved to continue the Public Hearing to the City Council meeting of October 5, 2021.

Vote: 4 - 0

Urgency Ordinance No. 2928 Temporary Moratorium

Mayor Barich opened the public hearing and called upon Development Services Director Desatnik who reviewed urgency Ordinance No. 2928 and explained staff's recommendation of a temporary 45-day moratorium on certain new development projects for those limited number of properties that are: 1) located within the EV/IC district, and 2) identified on the list and map of potential housing sites associated with the Housing Element Update. The City is currently updating the Housing Element which is a required piece of the General Plan that provides policies, programs, and actions to achieve the City's housing goals. The sites that are subject to the proposed Moratorium will assist the City in providing sufficient land to meet the City's required number and density of housing units as required by the State and the temporary moratorium will allow staff time to thoroughly study these sites and related land use issues. The identified sites will be required to be rezoned to authorize residential development as the primary use. As public comment, Alan and Robin Gotta, longtime property owners on Iowa Street, urged the Council to deny the rezoning of certain parcels, adding that they personally stood to lose millions in the value of their property, as they now prepare to retire and sell their property.

On motion of Mayor Pro Tempore Eddie Tejeda, seconded by Council Member Denise Davis, the City Council approved to continue the Public Hearing to the City Council meeting of October 5, 2021.

Vote: 4 - 0

TEFRA Tax Equity & Fiscal Responsibility Act Resolution No. 8258

Mayor Barich declared the meeting open as a public hearing and called on Management Services/Finance Director Garcia for details of Resolution No. 8258, approving the issuance of the California Municipal Finance Authority Revenue Bonds, Series 2021 (HumanGood). A portion of the proceeds of the Bonds, in a principal amount not to exceed $25,000,000, will be used to finance expenditures for various renovations to existing infrastructure and upgrades to housing units and amenities at the following continuing care community owned and operated by HumanGood and located in the City of Redlands: Plymouth Village, located at 900 Salem Drive, Redlands, California, 92373. This is the same property site as the California Municipal Finance Authority Revenue Bonds, Series 2019 (HumanGood). The borrower wishes to take advantage of favorable market conditions for financing opportunities. The Bonds to be issued by the CMFA for the Project will be the sole responsibility of the Borrower, and the City will have no financial, legal, moral obligation, liability or responsibility for the Project or the repayment of the Bonds for the financing of the Project. With no further comments, Mayor Barich closed the Public Hearing.

On motion of Mayor Pro Tempore Eddie Tejeda, seconded by Council Member Jenna Guzman-Lowery, the City Council unanimously approved Resolution No. 8258, approving the Issuance of the California Municipal Finance Authority Revenue Bonds, Series 2021 (HumanGood).

Vote: 4 - 0

NEW BUSINESS

Resolution No.8200 Personnel Rules and Regulations

Assistant City Manager McConnell summarized Resolution No. 8200, approving the City of Redlands Personnel Rules and Regulations. She explained the revisions were made to comply with new or updated regulations and to ensure that practices are in line with supporting employee morale and creating a productive working environment. Changes in this revision include modifications to the family leave policy in conjunction with new legislation, the addition of a lactation accommodation policy as required by law, and updates to reporting procedures and post-accident drug testing regarding employee accidents to be consistent with requirements under the Department of Transportation.

On motion of Mayor Pro Tempore Eddie Tejeda, seconded by Council Member Denise Davis, the City Council unanimously approved Resolution No.8200 approving the City of Redlands Personnel Rules and Regulations.

Vote: 4 - 0

First Amendment WWTP Improvements Project Phase 1B

Municipal Utilities and Engineering Director Harris detailed the need for a First Amendment to the Contract with GSE Construction Company, Inc. for construction of the Wastewater Treatment Plant Improvements Project - Phase 1B, increasing the contract amount by $751,219 to offset the costs for additional construction elements. The scope of this work included communication scheduling protocols, control panel design, loop diagrams, equipment and control strategy, and generation of equipment designs and standards. The negotiated cost for this additional scope of work related to SCADA was $313,344. The negotiated cost to construct this IPW pump station is $437,875, including all labor, materials, and installation.

On motion of Mayor Pro Tempore Eddie Tejeda, seconded by Council Member Denise Davis, the City Council unanimously approved the First Amendment to the Contract with GSE Construction Company, Inc. for construction of the Wastewater Treatment Plant Improvements Project - Phase 1B, increasing the contract amount by $751,219 to offset the costs for additional construction elements; and authorized an additional appropriation of $751,219 from the Wastewater Fund.

Vote: 4 - 0

Property Donation Conformance with General Plan

Facilities & Community Services Director Boatman stated that on June 24, 2021, staff received an offer to donate 0.03 acres of land located on the corner of Tennessee Street and West Redlands Boulevard. The property is within the existing 100' Redlands Blvd. street right-of-way (ROW). In compliance with Government Code Section 65402, the Planning Commission considered the proposed acquisition on September 14, 2021, and determined the use of the property to be in conformity with the adopted General Plan.

On motion of Mayor Pro Tempore Eddie Tejeda, seconded by Council Member Jenna Guzman-Lowery, the City Council accepted the donation of the property identified as County of San Bernardino Assessor Parcel Number 0169-053-11-0000; determined that the project is exempt from further environmental review pursuant to Section 15061(b)(3) of the state's guidelines implementing the California Environmental Quality Act; and authorized the City Manager to execute the associated property transfer and ownership documentation related to the donation of the subject property.

Vote: 4 - 0

Resolution No. 8259 300 E State Street Purchase Additional Appropriations

Management Services/Finance Director Garcia presented the request for additional appropriations for the purchase of 300 East State Street and reviewed Resolution No. 8259, authorizing an interfund loan from the Water Fund (501) to the General Fund (101) in the amount of $4,500,000 to offset timing differences in cash flow and support the building purchase for a period of time not-to-exceed one year, per the City Council's Interfund Loan Policy.

On motion of Mayor Pro Tempore Eddie Tejeda, seconded by Council Member Denise Davis, the City Council approved additional appropriations in the following funds and for the following amounts: General Fund (101), $14,000,000 from the unassigned fund balance; Water Fund (501), $5,577,569 from the unassigned fund balance, $4,500,000 of which is an interfund loan; Solid Waste Fund (511), $516,844 from the unassigned fund balance; Sewer Fund (521), $405,587 from the unassigned fund balance; and adopted Resolution No. 8259, authorizing an interfund loan from the Water Fund (501) to the General Fund (101) in the amount of $4,500,000 to offset timing differences in cash flow and support the building purchase of 300 East State Street for a period of time not-to-exceed one year, per the City Council's Interfund Loan Policy.

Vote: 4 - 0

PSA Amendment Acquisition of 300 E. State Street

Facilities and Community Services Director Boatman explained that on June 15, 2021, the City Council approved a Purchase and Sale Agreement (PSA) with Redlands Community Investment Corporation for the acquisition of the property located at 300 E. State Street. An amendment to the PSA would extend the close of escrow to September 30, 2021. It is the City's desire to provide continuity of service to the existing tenants within the property once the sale is complete and to facilitate this objective, an Assumption and Assignment Agreement has been prepared and will allow the City to assume the existing service contracts and tenant agreements. Resolution No. 8261 authorizes the City Manager to amend and/or terminate existing tenant lease agreements and any new tenant lease agreements will be brought before the City Council for consideration.

On motion of Mayor Pro Tempore Eddie Tejeda, seconded by Council Member Denise Davis, the City Council unanimously determined the agreements and Resolution No. 8261 are exempt from environmental review pursuant to Section 15061(b)(3) of the state's guidelines implementing the California Environmental Quality Act; approved the amendment to the Purchase and Sale Agreement and the Assumption and Assignment Agreement, with Redlands Community Investment Corporation; and approved Resolution No. 8261.

Vote: 4 - 0

COUNCIL MEMBER ANNOUNCEMENTS AND ACTIVITIES

Council Member Davis was pleased to announce the first Redlands Youth Council, held on September 8, was a great success with twenty-nine students in attendance. She spoke to the California Association of Student Councils, Region 11, via zoom, and was honored to give California State Treasurer Fiona Ma a tour of Redlands. Ms. Ma was especially impressed with the new mural on Vine Street.

Mayor Barich sadly announced the City lost one of its prominent citizens with the passing of Bob Leonard. Born and raised in town and part of a family with deeps roots to the community, he served as a Marine in the 1st Division in World War II and earned the Purple Heart after being wounded in Okinawa.

ADJOURNMENT

There being no further action required the meeting adjourned at 7:50 P.M. The next regular meeting of the City of Redlands City Council will be held on October 5, 2021.

REDLANDS FINANCING AUTHORITY

Chairman Barich called the meeting to order and offered anyone present the opportunity to address the Board on any subject, not already on the agenda, within the jurisdiction of the Redlands Financing Authority.

PUBLIC COMMENT

None forthcoming

Minutes

On motion of Vice Chair Tejeda, seconded by Board Member Davis, the minutes of the regular meeting of May 18, 2021 were approved.

Vote: 4 - 0 Passed

ADJOURNMENT

There being no further business, the Redlands Financing Authority adjourned at 7:51 P.M. The next regular meeting of the Agency will be held on January 18, 2022.