WESTLANDS WATER QUALITY COALITION

Groundwater Quality Trend Monitoring Workplan

ADDENDUM

for the Western Tulare Lake Basin

July 2018

Prepared by

Luhdorff & Scalmanini Consulting Engineers
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1 Background

The Central Valley Regional Water Quality Control Board’s (Regional Board or CVRWQCB) Order No. R5-2014-0001 Waste Discharge Requirements General Order for Growers within the Western Tulare Lake Basin that are Members of a Third-Party Group, hereafter referred to as the WDRs (CVRWQCB, 2014), requires the Westlands Water Quality Coalition (Coalition) to develop a Groundwater Quality Trend Monitoring (GQTM) Program. On May 16, 2018, the Coalition submitted the Western Tulare Lake Basin Groundwater Quality Trend Monitoring Workplan to address the requirements for the GQTM Program as outlined in the WDRs Attachment B, Sections IV.C and IV.E. The Workplan:

1. Discusses the approach and rationale for the design of the monitoring program, as they relate to the WDRs,
2. Describes the methodology and presents the results for the delineation of areas where trend monitoring is to occur,
3. Outlines the process and criteria used to select a network of GQTM wells for fulfilling the monitoring requirements,
4. Presents the proposed GQTM well network,
5. Proposes a schedule for well sampling and GQTM reporting,
6. Develops a sampling and analysis plan,
7. Describes anticipated approaches to long-term data evaluation,
8. Discusses considerations for the ongoing evaluation and refinement of the GQTM Program, and
9. Highlights linkages and coordination of the GQTM with the Central Valley Groundwater Monitoring Collaborative (CVGMC).

In a letter dated June 29, 2018 (CVRWQCB, 2018), the Regional Board provided a review of the May 16, 2018 Workplan submittal and noted four items that needed to be addressed through an addendum to be submitted by July 31, 2018. The specific requirements of the addendum include the following:

- A rationale for the sufficiency of the number of proposed wells to provide adequate coverage in the Coalition’s area
- A list of the wells that have permission to sample and that compose the trend monitoring network
- A map showing the locations of the trend monitoring wells
- All information required by the WDRs for trend monitoring wells

This addendum to the Western Tulare Lake Basin Groundwater Quality Trend Monitoring Workplan addresses these four items and presents an initial GQTM network of wells. The initial GQTM well network presented in this addendum is considered the beginning of an evolving network, not a static end result. The initial GQTM network consists of wells selected to accomplish the GQTM Program objectives of monitoring regional and long-term trends in groundwater quality in relation to agricultural practices, and which meet specific requirements of the WDRs and have granted the Coalition permission to access for sampling. However, it is anticipated that there are additional wells monitored by other entities that may add substantial value to the GQTM effort, although they may not satisfy all criteria specified in the WDR. Such wells are not considered part of the GQTM network, although available data for such
complementary wells will be considered during analyses and reporting of groundwater quality trends in the Coalition.

The GQTM design approach recognizes the importance for the monitoring program to be allowed to evolve over time based on consideration of data derived through implementation of the program itself. This approach favors a relatively simple initial well network design but also necessitates continuous evaluation. Therefore, the spatial representation and sufficiency of the GQTM well network will be evaluated on an annual basis with respect to the objectives of the program.

The Coalition is a participant in the CVGMC, which is intended to facilitate coordinated groundwater quality monitoring and reporting efforts between numerous agricultural Coalitions. It is anticipated that the CVGMC will eventually include other dischargers and monitoring entities within the Central Valley who must meet regulatory requirements associated with the Central Valley Salt and Nitrate Management Plan (SNMP) and the associated forthcoming Region 5 Basin Plan Amendment¹, or individual WDRs. The ongoing efforts of the CVGMC will inform the evaluation of relationships between groundwater quality and agricultural practices.

2 Trend Monitoring Network

As described in the Workplan (LSCE, 2018), the selection of wells for the GQTM network focused on wells constructed in the Upper Zone as delineated by CV-SALTS (Addendum Figure 1). Westlands Water District has an extensive database of deep and shallow groundwater wells that was utilized to perform the mapping and data analysis for the well network. Within the available Westlands data, approximately 180 Upper Zone wells were identified as potential candidate wells. However, further analysis of these wells determined that many (48 percent) were classified as abandoned and/or non-operational, resulting in 95 candidate wells in the database. By utilizing other well sources including the California Department of Water Resources (DWR), State Water Resources Control Board (SWRCB), United States Geological Survey (USGS), SWRCB Division of Drinking Water (DDW), and California Department of Pesticide Regulation (DPR), the Coalition identified approximately 80 candidate wells for further evaluation for the initial GWTM well network.

The selection of specific network wells and their locations was based on delineated Monitoring Areas and a quantitative evaluation of monitoring priority based on required GQTM considerations indicated in the WDRs. The factors used to assess the monitoring priority included historical groundwater quality, high vulnerability areas delineated in the Groundwater Quality Assessment Report (GAR), proximity and flow direction relative to communities (including disadvantaged communities), and land use and agricultural areas. Addendum Figure 2 presents the prioritization of areas for monitoring based on these key factors that were used to inform the locations for monitoring in the GQTM Program. Unlike a random design approach, this ensures that the focus of monitoring efforts is in areas where impacts from agricultural

¹ Amendments to the Water Quality Control Plans for the Sacramento River and San Joaquin River Basins and the Tulare Lake Basin to Incorporate a Central Valley-Wide Salt and Nitrate Control Program
activities are more likely to manifest in the groundwater and where there is a heightened interest in monitoring because of the greater reliance on groundwater for beneficial uses.

In addition to local site-selection considerations, wells included in the GQTM network should also provide a representative indication of more regional groundwater conditions. Larger-capacity wells that pump larger volumes of water, have larger contributing areas, and are more likely to represent regional groundwater conditions and trends that are the focus of the GQTM. For this reason, irrigation wells and public water supply or community system wells, which tend to pump higher volumes of water, are the preferred well type for the GQTM network. Such wells screened in the Upper Zone are likely to provide more regional representation of groundwater quality within a time frame that enables the evaluation of trends in groundwater quality resulting from changes in land use practices. Although larger-capacity wells are preferred for the GQTM network, other well types such as domestic wells and observation wells, represent more localized groundwater quality conditions, which can also provide informative data on the effects of agricultural practices. To ensure that wells selected for the initial GQTM network provide reasonable indications of regional trends, the degree to which the land use composition within the vicinity of wells represents regional land uses and the land use composition in the vicinity of communities is also a consideration.

2.1 Selection of GQTM Network Wells

An initial network of wells was selected for the GQTM based on evaluation of candidate wells and their individual well characteristics in combination with locational considerations highlighted above. A process of vetting of candidate wells was undertaken as part of identifying network wells. Well vetting efforts conducted by the Coalition involves many steps, including, but not limited to the following:

1. Confirming the existence of the individual well and location through correspondence with well owners or site visits,
2. Evaluating well construction information through review of a DWR Well Completion Report (WCR) or other comparable documentation of the well construction,
3. Determining well accessibility and means of collecting groundwater quality samples and water level measurements,
4. Reviewing well location and site in relation to land use activities that may affect ability to detect trends in groundwater quality characteristics related to agricultural practices,
5. Acquiring well owner permission for inclusion of the well in the GQTM network.

Well vetting is a significant Coalition effort necessitating outreach to well owners and agencies, review and inspection of well information and condition, and includes the development of well access agreements and participation arrangements. All of the GQTM network wells presented in this addendum have been vetted to the extent possible and the well owners have agreed to participate in the program.

2.1.1 Summary of Coalition Well Vetting Efforts

Prior to and since the submittal of the GQTM Workplan, the Coalition spent considerable effort towards the development of a network of wells for use in the GQTM Program. This effort included evaluation of numerous candidate wells for consideration in the network involving review of existing well data records,
review of WCRs, well owner contacts, well site reconnaissance and inspections, and acquiring agreements for well owner participation in the program, when appropriate and possible. The Coalition conducted outreach to members and candidate well owners through phone calls, emails, and site visits to confirm all necessary details with respect to the GQTM well network. Through these communications, many of the initial candidate wells in the Upper Zone were determined to be abandoned, destroyed, or otherwise non-functioning. Additional candidate wells were sought to replace these wells. Some of the highlights of the Coalition well vetting efforts include:

- Approximately 80 candidate wells evaluated
- More than 30 well owners contacted
- Review of over 250 available WCRs
- Mapping and data analysis of locations for all known Upper Zone wells (including abandoned or destroyed) for current and future outreach activities to refine the well network

Resulting from these efforts, many candidate wells were determined to not be ideal network wells due to a variety of factors. Some examples of reasons candidate wells were not selected for the network include the well construction information is not available, the well is determined to be too deep, the well has been destroyed or no longer exists, the well is planned for abandonment/destruction, the well is not at the location where originally thought, the well is dry, the property is for sale (new owner will be contacted when/if appropriate), contact could not be made with the well owner, or the well owner did not agree to participate in the program (mainly for PWS candidate wells).

The Coalition is continuing coordination with 15 land owners to determine if their wells are suitable for the network and additional outreach activities are planned with the intent of incorporating additional wells as appropriate. The August 2018 Westlands Water District monthly notice emailed to growers will include information on the GQTM network and well owner participation. Additionally, the Coalition annual attendance workshop being held in September 2018 will also include details about the program and will include discussion of any needs related to member participation.

2.1.2 Initial GQTM Network

The initial GQTM well network consists of 16 wells spatially distributed throughout the Coalition region (Addendum Figure 3). The network wells are a mix of observation, irrigation, domestic, and public water supply wells. Available well details for the proposed network wells are presented in Addendum Table 1. Major land uses within one mile of network wells are representative of the top commodities grown in the Coalition region. Network wells were selected to target locations around the highest monitoring priority areas and wells were selected to monitor changes in groundwater quality associated with a variety of top commodities occurring near communities, as shown in Addendum Figure 4. WCRs for the network wells are also included in the Appendix, if currently available.

At this time, the Coalition has completed as much vetting as possible with currently available information. There are five wells for which a WCR or other well construction diagram is currently not available; the Coalition will continue efforts to obtain this documentation through the well owner and/or other sources. Detailed well information sheets on all GQTM network wells (similar to those provided in the Workplan) will be prepared and submitted as part of annual reporting.
**Addendum Table 1: GQTM Network Well Details**

<table>
<thead>
<tr>
<th>GQTM Well ID</th>
<th>State Well Number</th>
<th>Local Name or ID</th>
<th>WCR Number</th>
<th>Well Use¹</th>
<th>Well Information from Well Completion Report</th>
<th>Latitude (NAD83)</th>
<th>Longitude (NAD83)</th>
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<td>WWQC_01</td>
<td>13S/13E-30D02</td>
<td>Obs.</td>
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<td></td>
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<td>25944</td>
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<td>Cement</td>
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<td>500</td>
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<td>193</td>
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<td>Cement</td>
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<td>280</td>
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<td>Obs.</td>
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<td>Cement</td>
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<td>250</td>
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</table>

¹ PWS=public water supply; Dom=domestic; Obs=observation; Irrig=irrigation; Unkwn=well use unknown
2.1.3 Future GQTM Network Wells and Adjacent Coalition Monitoring

Five new monitoring wells, expected to be constructed in 2018 or 2019 under funding awarded to Westlands Water District (WWD) by DWR through a Proposition 1 Sustainable Groundwater Management grant, will be incorporated into the GQTM network upon their completion; it is anticipated that they would be available for the Fall 2019 sampling. The preliminary design of these monitoring facilities includes multiple wells at different depths within the Upper Zone and one well in the Lower Aquifer System at each site. Specifics of the design and well siting will be coordinated between WWD and the Coalition to maximize the value of the monitoring facilities for use in the GQTM and Sustainable Groundwater Management Act (SGMA) programs. A total of five monitoring wells are expected to be constructed under the Proposition 1 grant award and these wells will be incorporated into the GQTM network in the future. The initial GQTM network wells, along with six potential locations (five will be selected) for future monitoring wells indicated in the Proposition 1 grant proposal, are presented in Addendum Figure 5. The locations of potential GQTM network wells that are pending agreements or complete well construction information are also displayed on Addendum Figure 5.

Although not directly part of the GQTM network for the Westlands Coalition region, there are additional GQTM network wells proposed for adjacent coalition regions (i.e., Westside San Joaquin River Watershed Coalition, Grassland Drainage Area, Kings River Water Quality Coalition, and Westside Water Quality Coalition) that are located close to the Westlands Coalition boundary and which also serve the objectives of the GQTM Program in tracking of regional groundwater quality trends related agricultural practices. Collectively, the GQTM efforts being conducted by the Westlands Coalition, along with those of the adjacent Coalitions, which are participating in the CVGMC, will help inform regional groundwater quality trends in the area, including directly adjacent to the Westlands Coalition region, as they relate to agricultural practices.

2.2 GQTM Network Refinement

The initial GQTM well network is expected to be dynamic. The GQTM network design presented in this addendum represents the beginning of an ongoing process of network development and refinement. The spatial representation of the GQTM well network will be evaluated on an annual basis with respect to the objectives of the program. Specific attention will focus on the adequacy of monitoring in areas where the direction and magnitude of temporal trends in groundwater quality suggest a consistent pattern that may be attributable to influences from irrigated agriculture. Recommendations will be made regarding potential addition, elimination, or substitution of wells. During GQTM implementation, efforts will be made to verify well construction information for complementary wells, and if appropriate and beneficial, establish agreements to formally incorporate these wells into the GQTM network.

Although the GQTM network wells presented in this addendum represent the wells proposed for initial monitoring as part of the GQTM program, additional evaluation of candidate wells in several network well search areas is still ongoing. Some areas within the Coalition region have few or no wells constructed in the Upper Zone because of the high natural salinity of shallow groundwater and its limited beneficial use. Although wells producing water from greater depths, including from below the Corcoran Clay, are less likely to exhibit influences from agricultural practices occurring on the overlying
lands, wells screened across the Corcoran Clay (composite wells) in these areas will reflect some of the influences from agricultural practices (especially trends in concentrations) and can inform the GQTM Program. Efforts to find wells in the Upper Zone for use in the GQTM will continue in these areas, although monitoring of composite wells may also benefit the GQTM Program. Availability of historical water quality data for some composite wells can make them particularly useful wells for tracking temporal trends in groundwater quality. **Addendum Figure 5** shows several well search areas where efforts to find additional GQTM network wells continue. The target depths for network wells in these areas will be based on consideration of the Upper Zone depth in combination with the depth to groundwater and depth from which beneficial users extract groundwater. Focused outreach efforts and evaluation of available well information to identify suitable wells for the GQTM network will continue in these areas. As additional GQTM network wells are identified in these areas, they will be incorporated into the GQTM Program, including sampling and reporting efforts, as appropriate.

### 2.3 GQTM Network Rationale

The WDR (MRP Section IV.C) states that the objectives of the GQTM are:

“(1) to determine current water quality conditions of groundwater relevant to irrigated agriculture, and (2) to develop long-term groundwater quality information that can be used to evaluate the regional effects (i.e., not site-specific effects) of irrigated agriculture and its practices.”

In reference to the design of the GQTM network, the WDR states the following:

“The proposed network shall consist of a sufficient number of wells to provide coverage in the third-party geographic area so that current water quality conditions of groundwater and composite regional effects of irrigated agriculture can be assessed according to the trend monitoring objectives. The rationale for the distribution of trend monitoring wells shall be included in the workplan.”

The rationale for the distribution of the trend monitoring wells provided in the Workplan includes recognition of a variety of factors to ensure the appropriate location of monitoring considered all of the factors identified in the WDR and additional considerations of interest identified by the Coalition. These factors were incorporated into a monitoring prioritization scheme that included numeric weighting of factors for targeting areas for monitoring, and the distribution of the network wells is based on this quantitative prioritization of areas for monitoring.

The proposed GQTM network presented in this addendum represents an initial network of wells with additional wells anticipated to be added by Fall 2019 and ongoing network refinement as the program progresses. The ultimate GQTM network will consist of more wells than are presented in this addendum to evaluate long-term regional groundwater quality trends related to irrigated agriculture effects and practices. The initial GQTM network, along with the planned evolution of the network, is sufficient to address the GQTM requirements because the network design is based on a monitoring prioritization that incorporates the key factors and considerations required by the WDRs (e.g., consideration of agricultural commodities, consideration of factors in vulnerability prioritization, consideration of recharge areas to communities). The implementation of the GQTM sampling to be conducted in Fall 2018 represents an adequate network to begin the program while the continued evaluation and
refinement of the GQTM network during the implementation of the program will ensure that the network is sufficient to accomplish the objectives of the program. The appropriate number and location of wells for the GQTM network will be informed by the ongoing evaluation of data from the program itself. In conjunction with existing and ongoing groundwater quality data evaluated as part of the GAR (and updates to the GAR), the GQTM network and analyses conducted as part of the GQTM Program, will also complement the characterization of groundwater quality previously conducted and to be periodically updated as part of the GAR and GAR updates.

3 References


Figures
ADDENDUM FIGURE 1

Depth to the Base of the Upper Zone (from CV-SALTS)

Explanation
Depth to the Base of the Upper Zone (ft bgs)
- < 100
- 100.1 - 200
- 200.1 - 300
- 300.1 - 400
- 400.1 - 500
- 500.1 - 600
- 600.1 - 700
- > 700

Corcoran Clay Extent
Western Tulare Lake Basin
DWR Groundwater Subbasins

Data sources:
CV-SALTS

Groundwater Quality Trend Monitoring Workplan Addendum
Western Tulare Lake Basin
ADDENDUM FIGURE 2

Map of Monitoring Priority by Section

Groundwater Quality Trend Monitoring Workplan Addendum
Western Tulare Lake Basin
ADDENDUM FIGURE 3
Map of GQTM Network Wells
Groundwater Quality Trend Monitoring Workplan Addendum
Western Tulare Lake Basin

Explanation
- Proposed GQTM Network Wells

Monitoring Priority
- Very Low
- Low
- Medium
- High
- Very High

Monitoring Areas
- Currently Retired Lands
- Western Tulare Lake Basin
- DWR Groundwater Subbasins

Data sources:
ADDENDUM FIGURE 4

GQTM Network and Major Land Use Types

Groundwater Quality Trend Monitoring Workplan Addendum
Western Tulare Lake Basin

Explanation
- Proposed GQTM Network
- Wells
- Disadvantaged Communities

Crop Categories (2016)

Irrigated
- Citrus/Subtropical
- Field Crops
- Fruit Trees
- Grain/Hay
- Nut Trees
- Rice
- Seeds/Beans
- Vegetables
- Vineyards

Non-Irrigated
- Idle
- Native
- Pasture
- Urban

Currently Retired Lands

Western Tulare Lake Basin
DWR Groundwater Subbasins

Data sources:
USDA Cropscape 2016; Westlands Water District; Policylink, 2013; Tulare County DAC Study, 2014; CA DWR, 2015

Luhrdorff & Scalmanini Consulting Engineers
EXPLANATION

GQTM Network Wells

Potential Future Network Wells

- Potential Network Wells Needing Construction Info (have agreement)
- Potential Network Wells Needing Agreements (contacts in progress/agreements pending; have construction info)

Proposed Locations for New Monitoring Wells (Prop. 1 grant funded)

GQTM Network Well Search Areas

Monitoring Priority

- Very Low
- Low
- Medium
- High
- Very High

Monitoring Areas

- Currently Retired Lands
- Western Tulare Lake Basin
- DWR Groundwater Subbasins

DATA SOURCES:

- [Data source 1]
- [Data source 2]
Appendix:
Well Completion Reports for GQTM Network Wells

This appendix presents supplemental information about the proposed GQTM network wells, including available Well Completion Reports or other well construction documentation for the network wells.
### WELL LOG:

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<th>Formation</th>
<th>Depth</th>
<th>ft.</th>
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</thead>
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<td>11</td>
</tr>
<tr>
<td>Tough Clay</td>
<td>11 to 26</td>
<td>26</td>
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<tr>
<td>Clay</td>
<td>26 to 51</td>
<td>51</td>
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<tr>
<td>Fine Sand</td>
<td>33 to 58</td>
<td>58</td>
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<tr>
<td>Clay</td>
<td>51 to 75</td>
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<tr>
<td>Clay</td>
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<td>135</td>
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<td>Brown Sand</td>
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### CONSTRUCTION:
- Work started: 7-19-57, Completed: 7-20-57

### 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:** MYERS BROTHERS WELL DRILLING  
**Address:** 6650 EAST LAGZY BLVD, HANFORD, CALIFORNIA

**License No.:** 125566  **Dated:** July 21, 1957
WATER WELL DRILLERS REPORT

No. 298423
State Well No. 157/135-5T4
Other Well No. ______

(1) OWNER: Name US GEOLOGICAL SURVEY
Address 2800 COTTAGE WAY
City SACRAMENTO
ZIP 95825

(2) LOCATION OF WELL (See instructions):
County FRESNO
Owner's Well Number P5-1
Well address if different from above PANCHOKE RD ~ 1/2 MILE W. FAIRFAX
Township 15S
Range 13E
Section 5E
Distance from cities, roads, railroads, fences, etc. ~240 FEET N OF PANCHOKE RD ~ 1/2 MILES WEST OF FAIRFAX

(3) TYPE OF WORK:
New Well & Deepening
Reconstruction
Reconditioning
Horizontal Well

(4) PROPOSED USE:
Domestic
Irrigation
Industrial
Test Well
Municipal
Other

(5) EQUIPMENT:
Rotary X
Cable X

(6) GRAVEL PACK:
Type X

(7) CASING INSTALLED:
Steel X
Plastic X

(8) PERFORATIONS:
Type of perforation or size of screen

(9) WELL SEAL:
Was surface sanitary seal provided? Yes [X] No [ ] If yes, to depth 188 ft
Were strata sealed against pollution? Yes [X] No [ ] Interval
Method of sealing BENTONITE GROUT

(10) WATER LEVELS:
Depth of first water, if known
Standing level after well completion

(11) WELL TESTS:
Was well test made? Yes [X] No [ ] If yes, by whom?
Type of test Pump X
Bailer X
Air lift X
Depth to water at start of test ft
At end of test ft
Discharge gal/min after hours
Water temperature °F
Chemical analysis made? Yes [X] No [ ] If yes, by whom?
Was electric log made? Yes [X] No [ ] If yes, attach copy to this report

(12) WELL LOG: Total depth 219 ft Completed depth 215 ft
from ft to ft. Formation (Describe by color, character, size or material)

48 - 57 FINE GRAVEL
59 - 75 MEDIUM COARSE GRAVEL
75 - 99 FINE COARSE GRAVEL
99 - 106 COARSE SAND TO MUD GRAVEL
96 - 98 MUD GRAVEL, SAND
98 - 99 SOME CLAY
99 - 109 SAND, CLAY, SILT
109 - 119 SAND, CLAY, SILT
129 - 133 LT. BROWN CLAY
133 - 139 COARSE GRAVEL, INTERBEDDED CLAY
139 - 143 FINE GRAVEL, SILT INCREASING
143 - 146 FINE GRAVEL
146 - 153 FINE MUD GRAVEL
153 - 159 75/25 FINE MUD GRAVEL, MS SAND
159 - 161 50/50 GRANULITE GRAVEL
161 - 162 FINE GRAVEL, MS SAND Silt
162 - 168 MOSTLY CLAY, SOME GRAVEL
168 - 178 CLAY
178 - 183 GRAVEL, SAND
183 - 197 CLAY
197 - 204 SAND, COARSE GRAVEL
204 - 205 MUD, SAND, FINE GRAVEL
205 - 215 FINE MUD, SAND, CLAY
215 - 219 SAND, CLAY, some GRAVEL

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]

NAME US GEOLOGICAL SURVEY
Address SAME AS OWNER

License No. ______ Date of this report ______

DWR 188 REV. 12-96
IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM
### WELL LOG:

<table>
<thead>
<tr>
<th>From ft</th>
<th>To ft</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>385</td>
<td>SDR21 370</td>
</tr>
<tr>
<td>385</td>
<td>390</td>
<td>Sch40 370</td>
</tr>
</tbody>
</table>

### GRAVEL PACK:

- 385 ft: SDR21 370
- 390 ft: Sch40 370

### WATER LEVELS:

- Depth of first water, if known: 136 ft
- Standing level after well completion: 136 ft

### WELL TESTS:

- Type of test: Pump
- Air lift
- Depth to water at start of test: 136 ft
- Water temperature
- Chemical analysis made: No
- Was electric log made: No

---

**WELL DRILLER'S STATEMENT:**

This well and all work performed and this report is true to the best of my knowledge and belief.

Signed: [Signature]

**NAME:** U.S. Geological Survey

**Address:** Same as owner

**City:**

**License No.:**

**Date of this Report:** 5/9/1987

---

**NOT FOR PUBLICATION**
Notice of Intent No.:
Local Permit No. or Date:

(1) OWNER: Name: U.S. GEOLOGICAL SURVEY
Address: 2530 OUTAGE WAY
City: SACRAMENTO Zip: 95821
County: Other Well No.

(2) LOCATION OF WELL (See instructions):
Well address if different from above:
Township: 15S Range: 13E Section: 11B
Distance from cities, roads, railroads, fences, etc.

(3) TYPE OF WORK:
New Well □ Drilling □ Deepening □ Reconstruction □
Reconditioning □ Horizontal Well □

(4) PROPOSED USE:
Domestic □ Irrigation □ Industrial □ Test Well □
Stock □ Municipal □ Other □

(5) EQUIPMENT:
Rotary □ Reverse □ Cable □ Air □ Bucket □ Other □

(6) GRAVEL PACK:
Gravel pack n/a

(7) CASING INSTALLED:
Steel □ Plastic □ Other □
From ft. To ft. Dia. in. Gage ft. Wall
0 199 5 SDR21 184 194 33

(8) PERFORATIONS:
Type of perforations or size of screen:

(9) WELL SEAL:
Was surface sanitary seal provided? Yes □ No □
Were strings sealed against infiltration? Yes □ No □
Method of sealing:
Dentonite grout

(10) WATER LEVELS:
Standing level after well completion:

(11) WELL TESTS:
Was well test made? Yes □ No □
Type of test: Pump □ Boiler □ Air lift □
Depth to water at start of test: ft. At end of test: ft.
Discharge: gpm after hours
Water temperature:
Chemical analysis made? Yes □ No □
Was electric log made? Yes □ No □

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: U.S. GEOLOGICAL SURVEY
Address: SAME AS OWNER

DWR 108 (REV. 7-76) IF ADDITIONAL SPACE IS NEEDED. USE NEXT CONSECUTIVELY NUMBERED FORM
Notice of Intent No. __________________
Local Permit No. or Date ___________________________

(1) OWNER: Name: U.S. Geological Survey
Address: 2600 Cottage Way
City: SACRAMENTO
ZIP: 95825

(2) LOCATION OF WELL (See instructions):
County: FRESNO
Owner's Well Number: MH-1
Well address if different from above:
Township: 1S
Range: 12E
Section: 22A
Distance from cities, roads, railroads, fences, etc.: MANNING 3 MILES
EAST OF TS @ ORT RD. 1 MILE NORTH OF MANNING SE OWNED INTERSECTION

from ft. to ft. Formation (Describe by color, character, size or material):

<table>
<thead>
<tr>
<th>Depth (ft)</th>
<th>Formation</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 40</td>
<td>60/40 CLAY, SAND, SILT, CEMENTED SAND</td>
</tr>
<tr>
<td>40 - 59</td>
<td>CLAY</td>
</tr>
<tr>
<td>57 - 61</td>
<td>CLAY + GRAVEL</td>
</tr>
<tr>
<td>61 - 90</td>
<td>CLAY, SAND + SILT</td>
</tr>
<tr>
<td>90 - 103</td>
<td>CLAY, LITTLE SAND</td>
</tr>
<tr>
<td>103 - 110</td>
<td>40% CLAY, 50% GRAVEL, 5% SAND</td>
</tr>
<tr>
<td>110 - 130</td>
<td>CLAY, SOME GRAVEL, SAND + SILT</td>
</tr>
<tr>
<td>130 - 140</td>
<td>CLAY, LITTLE SAND, GYPSUM, CRYSALIDS</td>
</tr>
<tr>
<td>140 - 155</td>
<td>MOSTLY W/COARSE SAND</td>
</tr>
<tr>
<td>155 - 158</td>
<td>CLAY</td>
</tr>
<tr>
<td>158 - 210</td>
<td>GRAVEL, GLACIER</td>
</tr>
<tr>
<td>170 - 176</td>
<td>CLAY, GRAVEL, CONCRETE SAND</td>
</tr>
<tr>
<td>176 - 178</td>
<td>SAND, GRAVEL</td>
</tr>
<tr>
<td>178 - 190</td>
<td>CLAY, GRAVEL, CONCRETE SAND</td>
</tr>
<tr>
<td>190 - 197</td>
<td>GRAVEL</td>
</tr>
<tr>
<td>197 - 200</td>
<td>50% CLAY, 30% SAND, 20% GRAVEL</td>
</tr>
<tr>
<td>200 - 210</td>
<td>CLAY, SAND</td>
</tr>
<tr>
<td>210 - 212</td>
<td>CLAY, GRAVEL</td>
</tr>
<tr>
<td>212 - 218</td>
<td>CLAY, SAND</td>
</tr>
<tr>
<td>218 - 222</td>
<td>CLAY, SAND</td>
</tr>
<tr>
<td>222 - 227</td>
<td>CLAY, SAND</td>
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<tr>
<td>227 - 230</td>
<td>CLAY, SAND, SOME GRAVEL</td>
</tr>
<tr>
<td>230 - 310</td>
<td>CLAY, SAND, SOME GRAVEL</td>
</tr>
<tr>
<td>310 - 330</td>
<td>CLAY, SAND, GRAVEL</td>
</tr>
<tr>
<td>330 - 340</td>
<td>CLAY, SAND, GRAVEL</td>
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<td>340 - 360</td>
<td>50% SILT, 30% SAND, 25% CLAY</td>
</tr>
<tr>
<td>360 - 370</td>
<td>GRAVEL-MOSTLY GYPSUM</td>
</tr>
<tr>
<td>370 - 375</td>
<td>SILT, CLAY, SAND</td>
</tr>
<tr>
<td>375 - 380</td>
<td>SAND, GRAVEL</td>
</tr>
<tr>
<td>380 - 410</td>
<td>SAND, Silt, GRAVEL</td>
</tr>
<tr>
<td>410 - 417</td>
<td>SAND, CLAY + W/BUCK SAND, SAND, GRAINS</td>
</tr>
<tr>
<td>417 - 420</td>
<td>SAND, GRAVEL</td>
</tr>
</tbody>
</table>

(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

(6) GRAVEL PACK:
- No
- Yes
- Depth of bore: 350 ft
- Depth of pack: 360 ft

(7) CASING INSTALLED:
- Steel
- Plastic
- Other

(8) PERFORATIONS:
- Type of perforation or size of screen:
- From ft. to ft. Gage or Wall
- From ft. to ft. Size
- 0 to 377 Gage
- 377 to 80
- 80 to 363
- 363 to 0

(9) WELL SEAL:
- Was surface sanitary seal provided? Yes
- Were strata sealed against pollution? Yes
- Method of sealing

(10) WATER LEVELS:
- Depth of first water, if known
- Standing level after well completion

(11) WELL TESTS:
- Was well test made? Yes
- Type of test: Pump
- Type of lift: Air lift
- Discharge: gal/minute
- Chemical analysis made? Yes
- Was electric log made? Yes

(12) 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

NAME: U.S. Geological Survey
Address: Same as above
City: __________________ ZIP: __________________
License No: __________________ Date of this report: __________________
(1) OWNER: Name: U.S. Geological Survey  
Address:  
City:  ZIP:  
(2) LOCATION OF WELL (See instructions):  
County:  Owner's Well Number: M4-1  
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  
Municipal  Other  
(5) EQUIPMENT:  
Rotary  Reverse  
Cable  Air  
Other  Buciek  
(6) GRAVEL PACK:  
Yes  No  Screen  
Type of screen or size of screen:  
(7) CASING INSTALLED:  
Steel  Plastic  Other  
From ft. to ft. Dia. ft. Gage or Wall  
(8) PERFORATIONS:  
From ft. to ft. Interval ft.  
(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 409 ft. Completed depth 379 ft.  
from ft. to ft. Formation (Describe by color, character, size or material)  
403 - 407 50% Gravel, 40% Sand & Silt  
1076 Clay, Gravel, Bluish  
Muddy, Og, VGP, Grains to 1/2"  
Reddish Brown Volcanic Clasts  
Some Pink Clay Pebbles  
Claystones  
407 - 409 Core Samples, Interbedded  
Silt and Sand, Beds 1" thick  
Some Muds, Bottom of Sample  
Wastly Silty Clay  
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 Drillers) Hydrologic Technician  
NAME: U.S. Geological Survey  
Address: Same as Owner  
City:  ZIP:  
License No.  Date of this report:  
DWR 188 (REV. 12-88) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM.
WATER WELL DRILLERS REPORT

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES

Notice of Intent No. __________________________
Local Permit No. or Date: _______________________

No. 164857
Other Well No. M1-1
State Well No. 15515E-9D

(1) ADDRESS

City: __________________________

(2) LOCATION OF WELL (See instructions):

County: FRESNO
Owner's Well Number: M1-1

Well address if different from above: __________________________

Township: 15S
Range: 15E
Section: 4D

Distance from cities, roads, railroads, fences, etc., SW corner of Oil City and Lincoln, 7 miles south of Mendota

(3) TYPE OF WORK:

New Well □ Deepening □
Reconstruction □
Reconditioning □
Horizontal Well □

(4) PROPOSED USE:

Domestic □ Irrigation □ Industrial □
Public Use □ Municipal □

(5) EQUIPMENT:

Notary □ Reverse □ Cable □ Air □ Other □

(6) GRAVITY PUMP:

Yes □ No □ If yes, to depth: __________________________ ft.

(7) CASING INSTALLED:

Steel □ Plastic □ Concrete □

(8) PERFORATIONS:

From ft. To ft. Dia. in. Casing Wall From ft. To ft. Intervals in.

0-80 1-80 SDR21 11.5 126.0 0.03"

(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: pumped bentonite 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 □ Buffer □ 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.

Depth of completed well: __________________________ ft.

0 - 15 Sand, (fine to Med), moderate silt
15 - 33 Sand, (fine to coarse), some silt
33 - 41 Sand, (med), very clean, no clay or silt
41 - 85 Clay, some sand
45 - 53 Sand, (med), minor sand
53 - 60 Clay, moderate sand
60 - 65 Sand, gravel, clay
65 - 70 Clay, massive, minor sand
70 - 100 Clay, sand, slightly increasing with depth
100 - 107 Clay, sand, and some gravel
107 - 171 Clay, gray clay clast
171 - 173 Sand, (fine to Med), abundant quartz, mica
173 - 184 Core-Sand (very fine to Med), predominately quartz, very micaceous, some clay clast, some iron staining
184 - 185 Clay, abundant, fin sand
185 - 186 Sand, (fine)
186 - 187 Sand, (fine to coarse)

Work started: 6-30 19 96
Completed: 7-4 19 96

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: __________________________
(Company, firm, or corporation) __________________________
Address: __________________________
License No. __________________________
Date of this report: __________________________

DWR 188 (REV. 7-76) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM
STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
WATER WELL DRILLERS REPORT

No. 164858
State Well No. 155/5 E-92
Other Well No. M1-2

(1) NOTICE OF INTENT:
Notice of Intent No., Local Permit No. or Date.

(2) LOCATION OF WELL:
County Evesno Owner's Well Number M1-2
Well address if different from above
Township 15E Range 15E Section QP2
Distance from cities, roads, railroads, fences, etc., SW corner of Oil City and Lincoln, 7 miles south of Mendota

(12) WELL LOG:
Total depth 73 ft. Depth of completed well 70 ft.
from ft. to
ft. Formation (Describe by color, character, size or material)
0 - 15 Sand, (fine to medium), moderate silt
15 - 33 Sand, (fine to coarse), some silt
33 - 41 Sand, (med.), very clean, no clay or silt
41 - 65 Clay, some Sand
45 - 53 Sand, (med.), minor clay
53 - 60 Clay, moderate sand
60 - 65 Sand, gravel, clay
65 - 73 Clay, massive, minor sand

(3) TYPE OF WORK:
New Well ○ Deepening ○ Reconstruction ○ Reconditioning ○ Horizontal Well ○
Destruction ○ (Describe destruction materials and procedures in Item 4)

(4) PROPOSED USE:
Domestic ○ Irrigation ○ Industrial ○ Test Well ○ Stock ○ Municipal ○ Other ○

(5) EQUIPMENT:
Rotary ○ Reverse ○
Cable ○ Air ○ Bucket ○
Other ○

(6) GRAVITY PACK:
Yes ○ No ○ (State size, depth, length)
Meter of bore: 12 ft

(7) CASING INSTALLED:
Steel ○ Plastic ○ Composite ○
From ft. To ft. Dia. or Wall
0 70 SDR 21 55 65 .03"

(8) PERFORATIONS:
Type of perforation or size of screen

(9) WELL SEAL:
Was surface sanitary seal provided? Yes ○ No ○ If yes, to depth 50 ft.
Were strata sealed against pollution? Yes ○ No ○ Interval 50 ft.
Method of sealing pumped bentonite grout

(10) WATER LEVELS:
Depth of test water, if known ____________ ft.
Standing level after well completion APPROX. 7 ft

(11) WELL TESTS:
Was well tested? Yes ○ No ○ (If yes, by whom?)
Type of test Pump ○ Bail recommendations ○ 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

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

[Signature]
[Name: U.S. Geological Survey (Person, firm, or corporation) (Typed or printed)]

Address ________________ City ___ Zip ___

License No.: Date of this report: 7-30-86

DO NOT FOR PUBLIC USE WATER CODE SEC. 13752

UNCONFINED
STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
WATER WELL DRILLERS REPORT

No. 164859

(1) Address
City:

(2) LOCATION OF WELL (See instructions):
County: Fresno Owner's Well Number: M1-3
Well address if different from above:
Township: 15S Range: 15E Section: 9D3
SW corner of Oil City and Lincoln, 7 miles south of Mendota

(12) WELL LOG: Total depth 275 ft. Depth of completed well 267 ft.

<table>
<thead>
<tr>
<th>ft</th>
<th>0</th>
<th>15</th>
<th>32</th>
<th>41</th>
<th>45</th>
<th>53</th>
<th>60</th>
<th>65</th>
<th>80</th>
<th>100</th>
<th>107</th>
<th>118</th>
<th>122</th>
<th>130</th>
<th>136</th>
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<tbody>
<tr>
<td>ft</td>
<td>267</td>
<td>275</td>
<td>32</td>
<td>41</td>
<td>45</td>
<td>53</td>
<td>60</td>
<td>65</td>
<td>80</td>
<td>100</td>
<td>107</td>
<td>118</td>
<td>122</td>
<td>130</td>
<td>136</td>
</tr>
<tr>
<td>Formation</td>
<td>Sand (fine to med.), moderate silt</td>
<td>Sand (fine to coarse), some clay</td>
<td>Sand (med), very clean, no clay or silt</td>
<td>Clay, some sand</td>
<td>Sand (med), minor clay</td>
<td>Clay, moderate sand</td>
<td>Sand, gravel, clay</td>
<td>Clay, massive, minor sand</td>
<td>Clay, sand slightly increasing with depth</td>
<td>Clay, sand, and some gravel.</td>
<td>the clay is brown with some blue-gray clay clast</td>
<td>Sand (fine to med.), abundant quartz, micaeous</td>
<td>CORE-Sand (very fine to med), predominantly quartz, very micaeous, some feldspar, some orin staining</td>
<td>Sand (fine to med.)</td>
<td>Sand (fine, some coarse)</td>
</tr>
<tr>
<td>Depth</td>
<td>0</td>
<td>15</td>
<td>32</td>
<td>41</td>
<td>45</td>
<td>53</td>
<td>60</td>
<td>65</td>
<td>80</td>
<td>100</td>
<td>107</td>
<td>118</td>
<td>122</td>
<td>130</td>
<td>136</td>
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<tr>
<td>Permeability</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(3) TYPE OF WORK:
- New Well □ Deepening □ Reconstruction □ Reconditioning □ Horizontal Well □ Vertical Well □ Direct Push Method □ Other □

(4) PROPOSED USE:
- Domestic □ Industrial □ Other □

(5) EQUIPMENT:
- Rotary □ Reverse □ Cable □ Air □ Other □ Bucket □ Pump □

(6) GRAVITY PACK:
- Type of pack □ Size □ No. of packs □ Depth □

(7) CASING INSTALLED:
- Steel □ Plastic □ Concrete □

(8) PERFORATIONS:
- Type of perforating □ Size of screen □

(9) WELL SEAL:
- Surface sanitary seal provided? No □ Yes □ If yes, to depth 250 ft.
- Strata sealed against pollution? No □ If yes, to depth 250 ft.

(10) WATER LEVELS:
- Depth of first water, if known □
- Standing level after well completion □

(11) WATER TESTS:
- Was well tested? No □ If yes, by whom □
- Type of test □ Pump □ Bailer □ Air lift □
- Depth to water at start of test □ At end of test □
- Discharge gpm/min after hours □ Water temperature □
- Chemical analysis made? No □ If yes, by whom □
- Electric log made? No □ If yes, attach copy to this report □

(12) 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: U.S. Geological Survey (Person, firm, or corporation) (Typed or printed)
Address: same as owner
City: Zip:
License No.: Date of this report:

DWR 188 (REV. 7-76) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM
STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
WATER WELL DRILLERS REPORT

No. 164860

(12) WELL LOG: Total depth 28 ft. Depth of completed well 28 ft.
from ft. to ft. Formation (Describe by color, character, size or material):

- 0 - 4 clay
- 9 - 14 clay
- 14 - 24 sand
- 24 - 28 clay

(3) TYPE OF WORK:
New Well X Deepening □
Reconstruction □
Reconditioning □
Horizontal Well □
Dredging □ (Describe materials and procedures in Item 7)

(4) PROPOSED USE:
Domestic □
Irrigation □
Industrial □
Test Well □
State □
Municipal □
Other □

(5) EQUIPMENT:
Rotary □ Reverse □
Cable □ Air □
Other □ Auger □ Bucket □ Pressure from □

(7) CASING INSTALLED:
Steel □ Plastic □ Composites □
From 0 ft. To 28 ft. Dia. 6 in. casing or screen.
From 28 ft. To 20 ft. Dia. 6 in. screen.

(9) WELL SEAL:
Was surface sanitary seal provided? Yes □ No □
If yes, to depth 18 ft.
Were strata sealed against pollution? Yes □ No □ Interval __________ ft.
Method of sealing Bentonite 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 ejected □ Pump □
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

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 ________________________________
HYDROLOGIC TECHNICIAN

NAME ____________________________
(Well Driller)

ADDRESS ____________________________
(Person, firm, or corporation) ( Typed or printed)

CITY ____________________________ ZIP __________

LICENSE NO. ____________________________ DATE OF REPORT ____________________________
(1) OWNER: Name: U.S. GEOLOGICAL SURVEY
Address: 2800 Cottage Way
City: Sacramento
Zip: 95825
(2) LOCATION OF WELL (See instructions):
County: Fresno
Owner's Well Number: 2417 East of Newcomb on the north side North Ave.
Distance from cities, roads, railroads, fences, etc.: 247 ft
(3) TYPE OF WORK:
New Well X Deepening □
Reconstruction □
Reconditioning □
Horizontal Well □
(4) PROPOSED USE:
Domestic □
Irrigation □
Industrial □
Test Well □
Stock □
Municipal □
Other □
(5) EQUIPMENT:
Rotary □ Reverse □
Cable □ Air □ Other □ Bucket □
(6) GRAVEL PACK:
No □ Size: □
(7) CASING INSTALLED:
Steel □ Plastic X Composition: □
(from ft to ft Dia. in. Core or Well): □
From □ To □ Dia. in. gage or Wall: □
(8) PERFORATIONS:
Type of perforation or size of screen: □
(9) WELL SEAL:
Was surface sanitary seal provided? Yes □ No □
If yes, to depth: □
Were strata sealed against pollution? Yes □ No □ Interval: □
Method of sealing: □
(10) WATER LEVELS:
Depth of first water, if known: □
Standing level after well completion: □
(11) WELL TESTS:
Was well test made? Yes □ No □
If yes, by whom: □
Type of test Pump □ Boiler □ Air lift □
Depth to water at start of test: □
At end of test: □
Discharge: gal/min after: □
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: 505 ft
Depth of completed well: 705 ft
Formation (Describe by color, character, size or material):
0 - 7.5 clay, trace sand 5Y53
7.5 - 27.5 sand, some clay
27.5 - 53.8 sand, fine to coarse
53.8 - 57.5 clay, silty, 5Y53
57.5 - 60.0 no sample
61.3 - 92.0 clay, silty 10 YR 412
92.0 - 118.0 sand, some gravel
118.0 - 121.0 clay, some sand & gravel
127.0 - 142.0 sand, gravel and clay
142.0 - 157.0 sand, abundant clay
157.0 - 172.0 clay, abundant sand & gravel
172.0 - 191.0 sand, fine to coarse
191.0 - 206.0 sand and gravel
206.0 - 215.0 abundant sand
215.0 - 235.0 sand, gravel & clay
235.0 - 238.0 clay, silty 5Y56
238.0 - 252.0 gravel, fine to medium
252.0 - 282.0 sand and gravel
282.0 - 283.0 sand, fine to medium
283.0 - 345.0 clay, silty 5Y56
345.0 - 364.0 clay, silty
364.0 - 401.0 clay, sand
401.0 - 424.0 sand and gravel
424.0 - 420.0 clay, silty
420.0 - 450.0 gravel, fine to medium
450.0 - 465.0 clay, abundant sand
465.0 - 492.0 sand, fine to coarse
492.0 - 505.0 clay, some sand & gravel
(13) 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: U.S. GEOLOGICAL SURVEY
(14) ADDITIONAL INFORMATION:
DWR 188 (REV. 7-76) IF ADDITIONAL SPACE IS NEEDED. USE NEXT CONSECUTIVELY NUMBERED FORM
**Notice of Intent No.**

**Local Permit No. or Date**

**STATE OF CALIFORNIA**

**DEPARTMENT OF WATER RESOURCES**

**WATER WELL DRILLERS REPORT**

**No. 298406**

**State Well No. 13S/13E-28A1**

**Other Well No.**

---

**WELL LOG:**

<table>
<thead>
<tr>
<th>Depth (from ft)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 15</td>
<td>clay</td>
</tr>
<tr>
<td>15 - 18</td>
<td>sand and clay</td>
</tr>
<tr>
<td>18 - 25</td>
<td>clay</td>
</tr>
<tr>
<td>25 - 51</td>
<td>clay, some interbedded sand</td>
</tr>
<tr>
<td>51 - 60</td>
<td>sand and gravel</td>
</tr>
<tr>
<td>60 - 70</td>
<td>clay</td>
</tr>
<tr>
<td>70 - 77</td>
<td>sand</td>
</tr>
<tr>
<td>77 - 94</td>
<td>clay</td>
</tr>
<tr>
<td>94 - 98</td>
<td>fine sand</td>
</tr>
</tbody>
</table>

---

**TYPE OF WORK:**

- New Well [x]
- Deepening [ ]
- Reconstruction [ ]
- Reconditioning [ ]
- Horizontal Well [ ]
- Destruction [ ]

**PROPOSED USE:**

- Domestic [ ]
- Irrigation [x]
- Industrial [ ]
- Test Well [ ]
- Municipal [ ]

---

**WELL LOCATION SKETCH**

---

**EQUIPMENT:**

- Rotary [x]
- Cable [ ]
- Other [ ]

**GRAVEL PACK:**

- Gravel Pack [ ]

**CASING INSTALLED:**

- Steel [ ]
- Plastic [x]

<table>
<thead>
<tr>
<th>Depth</th>
<th>Diameter</th>
<th>Casing or Wall</th>
<th>Type of Protection or Size of Wire</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>200</td>
<td>SDR21</td>
<td>.03</td>
</tr>
</tbody>
</table>

---

**WELL SEAL:**

- Surface sanitary seal provided? Yes [x] No [ ]

- Were strata sealed against pollution? Yes [x] No [ ]

- Method of sealing: bentonite grout

---

**WATER LEVELS:**

- Depth of first water, if known:

  - Standing level after well completion: 28 ft

---

**WELL TESTS:**

- Was well test made? Yes [x] No [ ]

- Type of test: Pump [ ]

- Depth to water at start of test: 0 ft

- Water temperature:

---

**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] **HYDROLOGIC TECHNICIAN**

**NAME:** U.S.G.S.

**ADDRESS:** Same as Owner

**License No.**

---

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM
Notice of Intent No. 
Local Permit No. or Date 

(1) OWNER: Name Gary Hughes 
Address 7609 S. James Rd. 
City Tranquility, CA ZIP 93668 

(2) LOCATION OF WELL (See instructions): 
County Fresno Owner's Well Number
Well address if different from above: 
Township 16 Range 16 Section 33 
Distance from city, roads, railroads, fences, etc.: 1 mile south of Kamin Ave and 1 mile west of Napa Ave

(12) WELL LOG: Total depth 550 ft. Completed depth 520 ft. 
from ft. to ft. Formation (Describe by color, character, size or material) 
0 - 4 Top Soil 
4 - 8 Sand 
8 - 17 Clay 
17 - 26 Sand 
26 - 43 Clay 
43 - 51 Sand and Gravel 
51 - 95 Clay 
95 - 97 Sand 
97 - 111 Clay 
111 - 113 Sand 
113 - 133 Clay 
133 - 136 Sand 
136 - 136 Clay 
136 - 165 Sand and Small Rocks 
165 - 315 Clay 
315 - 325 Sand 
325 - 338 Clay 
338 - 338 Sand 
338 - 356 Sand 
356 - 360 Clay 
360 - 365 Sand 
365 - 405 Clay 
405 - 420 Sand 
420 - 425 Sand 
425 - 450 Clay 
450 - 460 Clay 
460 - 471 Sand 
471 - 476 Clay 
476 - 484 Sand 
484 - 492 Clay 
492 - 507 Sand 
507 - 512 Clay 
512 - 517 Sand 
517 - 532 Clay 
532 - 542 Sand 
542 - 550 Sticky Clay

(3) TYPE OF WORK: 
New Well ☑ 
Deepening ☐ 
Reconstruction ☐ 
Reconditioning ☐ 
Horizontal Well ☐ 
Drillout ☐ 

(4) PROPOSED USE: 
Domestic ☑ 
Irrigation ☐ 
Industrial ☐ 
Test Well ☐ 
Municipal ☐ 

(5) EQUIPMENT: 
Rotary ☑ 
Reverse ☐ 
Cable ☐ 
Air ☐ 

(6) GRAVEL PACK: 
XX No. ☑ Silt 18

(7) CASING INSTALLED: 
Steel ☑ Plastic ☐ Other ☐

(8) PERFORATIONS: 
Type of perforation or size of screen

(9) WELL SEAL: 
Was surface sanitary seal provided? Yes ☑ No ☐ If yes, to depth 40 ft.
Method of sealing: Cement

(10) WATER LEVELS: 
Depth of first water, if known 180 ft.
Standing level after well completion 180 ft.

(11) WELL TESTS: 
Was well test made? Yes ☑ No ☐ If yes, by whom? Arthur & Orin Well Drilling Inc
Type of test Pump ☐ Air lift ☑
Depth to water before test start 100 ft.
At end of test 100 ft.
Discharge gals/min after 10 hours Water temperature
Chemical analysis made? Yes ☑ No ☐ If yes, by whom? Arthur & Orin Well Drilling Inc
Was electric log made? Yes ☑ No ☐ If yes, attach copy to this report

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 ________________________ 
NAME Arthur & Orin Well Drilling Inc
ADDRESS 3762 E. Conejo Ave 
City Fresno, CA ZIP 93725 
LICENSE No. 361319 Date of this report 3-14-91

DWR 168 (REV. 12-86)
WELL SCHEDULE

U.S. DEPT. OF INTERIOR
GEOLICAL SURVEY
WATER RESOURCES DIVISION

MASTER CARD

Record by: Splaine. Source: U.S. B.R.
Date: 4-19-63

State: California
City: [Blank]
County: [Blank]
Well No.: 178/16E-2.0N2
Owner or name: U.S.B.R.
Address: [Blank]

Latitude: [Blank]
Longitude: [Blank]
Sequential number: 1.0

Total wells: [Blank]
Total number: 1.0

HYDROGEOLOGIC CARD

Drainage area (in.): [Blank]
Topo of: [Blank]

Depression, stream channel, seepage, hollow, hillside, terrace, undulating, valley, flat

Lithology: [Blank]
Length of well open to: [Blank]

Narrow: [Blank]
Diameter: [Blank]
Length of well open to: [Blank]

Data available: Field sketch chart.

Well data: [Blank]
Well lab data: [Blank]

Data description: [Blank]

“Well Description Card”

Depth: [Blank]
Date: 4-19-63

SW. Cor., could not get more information.

4-19-66
200 S.W. 75 E. of S.W. Cor.
WELL DATA

Investigation Area: San Luis Westside Service Area
Source of data: USBR
Record by: CMT J.
Date: 3-24-72

Owner: Address
Tenant: Address
Former Owner: Address
Driller: Address

LOCATION: State: CALIF. County: FRESNO
USGS Quad. WESTSIDE
SE 1/4, SE 1/4 Section 24, Twp. 17 S, Rge. 16 E (MD) SB, H, Base and Meridian
Description: 10 in S WO of the SE 1/4
90 S WO of White House
100 S WO of Harrow
10 N of former power pole west of N.S. Road

Elevation of land surface: 2430.0 ft. Determined from 1956 USGS Quad.
MEASURING POINT description: Top of 11" plastic casing

which is 10 ft. above land surface. Elevation of M.P.: 2450 ft. USBR levels

WELL: Use: Irr, Dom, Stock, Test, Unused. Type: Cable, rotary, dug

Water (oil) level: 19 ft. below ground surface. (measured, reported)
Geologic Log: filed. E-log: filed
Producing zones: Gravel Pack
Water Analyses: sampled by. Date: 19.

Quality: Temp. °F.

MOTOR: Make: H.P.: Serial No.
Electric Meter No.: Transformer No.

YIELD: g.p.m.; meas., repts., est.; Pumping level: ft.; Drawdown: ft.
after pumping: day, hrs., min. By.

Remarks

PERIOD OF RECORD FROM TO

T 17S R 16E S 26R1
Know what's below. Call before you dig.

WARNING
POWER LINES
OVERHEAD

FOR RIGHT OF WAY DATA AND ACCURATE ACCESS DETERMINATION, SEE DOCUMENTS IN THE DEPARTMENT OF PUBLIC WORKS AND PLANNING.

DEPARTMENT OF PUBLIC WORKS AND PLANNING
RECORD DRAWING SCALE PROJECT

CONTRACT NO. DRAWING NO. SHEET NO. TOTAL

DESIGNED: DRAWN: CHECKED:

DATE

FOR RIGHT OF WAY DATA AND ACCURATE ACCESS DETERMINATION, SEE DOCUMENTS IN THE DEPARTMENT OF PUBLIC WORKS AND PLANNING.

DEPARTMENT OF PUBLIC WORKS AND PLANNING

MONITORING WELL ANTICIPATED DIMENSIONS

<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
<th>FC-1</th>
<th>FC-2</th>
<th>FC-3</th>
<th>FC-4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>DEPTH TO BOTTOM OF SHALLOW ANNULAR SEAL</td>
<td>225</td>
<td>275</td>
<td>275</td>
<td>275</td>
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<tr>
<td>2</td>
<td>DEPTH TO TOP OF SHALLOW PERFORATED CASING</td>
<td>320</td>
<td>330</td>
<td>330</td>
<td>330</td>
</tr>
<tr>
<td>3</td>
<td>DEPTH TO BOTTOM OF SHALLOW PERFORATED CASING</td>
<td>350</td>
<td>350</td>
<td>350</td>
<td>350</td>
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<tr>
<td>4</td>
<td>DEPTH TO TOP OF INTERMEDIATE ANNULAR SEAL</td>
<td>350</td>
<td>350</td>
<td>350</td>
<td>350</td>
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<tr>
<td>5</td>
<td>DEPTH TO TOP OF INTERMEDIATE CASING</td>
<td>350</td>
<td>350</td>
<td>350</td>
<td>350</td>
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<tr>
<td>6</td>
<td>DEPTH TO BOTTOM OF DEEP PERFORATED CASING</td>
<td>800</td>
<td>800</td>
<td>800</td>
<td>800</td>
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<tr>
<td>7</td>
<td>DEPTH TO BOTTOM OF DEEP PERFORATED CASING</td>
<td>1100</td>
<td>1100</td>
<td>1100</td>
<td>1100</td>
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<tr>
<td>8</td>
<td>TOTAL DEPTH OF COMPLETE WELL</td>
<td>720</td>
<td>720</td>
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<tr>
<td>9</td>
<td>TOTAL DEPTH OF BOREHOLE</td>
<td>740</td>
<td>740</td>
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</table>

NOTES:
1. DEPTHS IN THE TABLE MAY CHANGE BASED ON THE STRATIGRAPHY ENCOUNTERED DURING DRILLING.
2. WELL FC-3 MAY NEED TO BE RAISED APPROXIMATELY 3 TO 4 FEET TO AVOID DRAWAL.

DEPARTMENT OF PUBLIC WORKS AND PLANNING

MONITORING WELL DETAILS

- DOUBLE COMPLETION MONITORING WELL DETAIL

SCHEDULE

RECORD DRAWING DRAWN: DATE

DEPARTMENT OF PUBLIC WORKS AND PLANNING

FRESNO COUNTY MONITORING WELLS

PROJECT: DEPARTMENT OF PUBLIC WORKS AND PLANNING

CONTRACT NO. 11272 SHEET NO. TOTAL

DATE: 3/18/2014 3/18/2014

1. SEE TABLE FOR DEPTHS OF WELLS
2. CONTRACTOR MAY KEEP THE DRAWING. SAME MUST FOR THE ENTIRE DEPTH OR MAY HARROW IT TO 8-ROSES DRAWING 3 FEET BELOW THE SHALLOW WELL CASING.
3. CONCRETE COLLAR TO HAVE MINIMUM COMPRESSIVE STRENGTH OF 2,500 PSI
4. RECOMMENDED PENT 0.00 calibration vertically in the collars and have a minimum 3-1/2" sewed on all sides.

5. DOUBLE COMPLETION MONITORING WELL DETAIL

NOTE:
- DOUBLE COMPLETION MONITORING WELL DETAIL

PROJECT: DEPARTMENT OF PUBLIC WORKS AND PLANNING

CONTRACT NO. 11272 SHEET NO. TOTAL

DATE: 3/18/2014 3/18/2014

1. SEE TABLE FOR DEPTHS OF WELLS
2. CONTRACTOR MAY KEEP THE DRAWING. SAME MUST FOR THE ENTIRE DEPTH OR MAY HARROW IT TO 8-ROSES DRAWING 3 FEET BELOW THE SHALLOW WELL CASING.
3. CONCRETE COLLAR TO HAVE MINIMUM COMPRESSIVE STRENGTH OF 2,500 PSI
4. RECOMMENDED PENT 0.00 calibration vertically in the collars and have a minimum 3-1/2" sewed on all sides.

5. DOUBLE COMPLETION MONITORING WELL DETAIL

NOTE:
- DOUBLE COMPLETION MONITORING WELL DETAIL

PROJECT: DEPARTMENT OF PUBLIC WORKS AND PLANNING

CONTRACT NO. 11272 SHEET NO. TOTAL

DATE: 3/18/2014 3/18/2014

1. SEE TABLE FOR DEPTHS OF WELLS
2. CONTRACTOR MAY KEEP THE DRAWING. SAME MUST FOR THE ENTIRE DEPTH OR MAY HARROW IT TO 8-ROSES DRAWING 3 FEET BELOW THE SHALLOW WELL CASING.
3. CONCRETE COLLAR TO HAVE MINIMUM COMPRESSIVE STRENGTH OF 2,500 PSI
4. RECOMMENDED PENT 0.00 calibration vertically in the collars and have a minimum 3-1/2" sewed on all sides.

5. DOUBLE COMPLETION MONITORING WELL DETAIL

NOTE:
- DOUBLE COMPLETION MONITORING WELL DETAIL
Notice of Intent No. 
Local Permit No. or Date 

(1) OWNER: Name HARRIS FARMS, INC. Address Hwy 145 & W. Oakland City Coalinga, CA ZIP 93210

(2) LOCATION OF WELL (See instructions): County Fresno Owner's Well Number 
Well address if different from above 
Township __________ Range _______ Section _______ 
Distance from cities, roads, railroads, fences, etc. 

(12) WELL LOC: Total depth 550 ft. Completed depth 400 ft. from ft. to ft. Formation (Describe by color, character, size or material) 

0 - 2. Clay Top Soil 
2 - 29 Soft Brown Clay 
29 - 34 Sand & Clay 
34 - 36 Soft Brown Clay 
36 - 38 Sand & Clay 
38 - 80 Soft Brown Clay 
80 - 84 Coarse Brown Sand 
84 - 98 Soft Brown Clay 
98 - 100 Coarse Brown Sand 

(3) TYPE OF WORK: 
New Well ☑ Deepening ☐ Reconstruction ☐ Reconditioning ☐ Horizontal Well ☐ Destriction ☐ (Describe destruction materials and procedures in Item 12) 

(4) PROPOSED USE: Domestic ☑ Irrigation ☐ Industrial ☐ Test Well ☐ Municipal ☐ Other ☐ 

WELL LOCATION SKETCH 

(5) EQUIPMENT: 
Rotary ☑ Reverse ☐ Cable ☐ Air ☐ Other ☐ 

(6) GRAVEL BACK: 
Gravel back size 

t. 

(7) CASING INSTALLED: 
Steel XX Plastic ☐ Grout ☐ 

(8) PERFORATIONS: 
Type of perforation or size of hole 

From ft. To ft. Diameter or Wall Elevation To ft. 

0 400 ft. 4" 280 ft. 

(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 

Bentonite 

(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 ☐ Boiler ☐ Air lift ☐ 
Depth to water at start of test __________ ft. At end of test __________ ft. 
Discharge __________ gal/min after __________ hours Water temperature __________ °F 
Chemical analysis made? Yes ☑ No ☐ If yes, by whom? 
Was electric log made? Yes ☑ No ☐ If yes, attach copy to this report 

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 (See next page) (Well Driller) 

NAME: (Person, firm or corporation) (Typed or printed) 
Address: 
City: ZIP: 

License No. Date of this report: 

DWR 186 (REV. 12-96) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM 86 96355
**WELL DATA**

**Investigation Area:** San Luis Solano Water District System
**Source of data:** U.S.B.R.

**Owner:** Address
**Tenant:** Address
**Former Owner:** Address
**Driller:** Address Sacramento, Calif.

**LOCATION:**
- **State:** California
- **County:** Fresno
- **USGS Quad:** Guadalupe Hills
- **Twp:** 20S
- **Rng:** 16E
- **Sec:** 10
- **Lot:** 1/4
- **NE 1/4**
- **Date:** 6-21-66

**Description:**
- **2435.5 ft** N of SE cor Sec 10
- **660.0 ft** W of the intersection of El Dorado and Polace Ave.

**Elevation of land surface:** 460.0 ft.
**Determined from Quads:** 1956

**MEASURING POINT description:**
- **Top of A Slab:** 456.0 ft.
- **which is 10 ft. (above, below) land surface.**

**Elevation of M.P. 456.0 ft.**

**WELL Use:** Irr., Dom., Stock, Test, Unused
**Type:** Cable, rotary, dug
**Drilled:** 6-7-66
**Depth:** 400 ft. Moss.

**Casing:**
- Diameter: 4 in., to 400 ft.
- Diameter: 6 in., to 660 ft.

**Perforations:** 380 - 400
**Shut-off pressure:** 375
**Discharge pipe:** Diam. in., open, closed

**Water (oil) level:** 19 ft. below ground surface (measured, reported)

**Geologic Log:**
- **Yes** filed
- **U.S.B.R. Sodco**
- **E-log** filed

**Producing zones:**
- **Gravel Pack**

**Water Analyses:**
- **Sampled by:**
- **Quality:**
- **Temp.:** 91°F
- **Date:** 1966

**PUMP:**
- **DWT, Cyl., Jet, Centrif.**

**MOTOR:**
- **Make:**
- **H. P.:**
- **Serial No.:**
- **Transformer No.:**

**YIELD:**
- **g.p.m.**
- **rept., est.:**
- **Pumping level:**
- **ft.; Drawdown:**
- **ft. after pumping:**
- **day, hrs., min.:**
- **By:** 19

**Remarks:**

**PERIOD OF RECORD FROM 6-9-66 TO**

**T20S R 16E S 10H**
**WELL DATA**

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<thead>
<tr>
<th>OWNER</th>
<th>Westlands Water District</th>
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<tbody>
<tr>
<td>ADDRESS</td>
<td>3130 N. Fresno St., Fresno CA 93703</td>
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<td>TENANT</td>
<td></td>
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<tr>
<td>ADDRESS</td>
<td>3130 N. Fresno St., Fresno CA 93703</td>
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<td>TYPE OF WELL</td>
<td>Special Studies</td>
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<td></td>
<td>Monthly</td>
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<td>LOCATION</td>
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<td>Gijarro Hills</td>
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<tr>
<td>COORDINATES (NAD83)</td>
<td>Longitud 120°08'19.5&quot;W</td>
</tr>
<tr>
<td></td>
<td>Latitude 36°09'25.3&quot;N</td>
</tr>
<tr>
<td>DESCRIPTION</td>
<td>Approximately 1720' n/o Phelps Ave. and 26' w/o Lake Ave.</td>
</tr>
<tr>
<td>REFERENCE POINT ELEVATION</td>
<td>428.0 FT.</td>
</tr>
<tr>
<td>DEPTH</td>
<td>500.0 FT.</td>
</tr>
<tr>
<td>CASING, SIZE</td>
<td>6.0 IN.</td>
</tr>
<tr>
<td>LAND SURFACE DATUM</td>
<td>NGVD29</td>
</tr>
<tr>
<td>GROUND ELEVATION</td>
<td>425.0 FT.</td>
</tr>
<tr>
<td>MEASUREMENTS BY</td>
<td>DWR, USGS, USBR, COUNTY, IRR. DIST., WATER DIST.</td>
</tr>
<tr>
<td></td>
<td>Other</td>
</tr>
<tr>
<td>GRAVEL PACK?</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td>DEPTH TO TOP GR. 350'</td>
</tr>
<tr>
<td></td>
<td>DEPTH TO BOT GR. 500'</td>
</tr>
<tr>
<td>TYPE OF MATERIAL</td>
<td>Alluvium</td>
</tr>
<tr>
<td></td>
<td>PERM. RATING</td>
</tr>
<tr>
<td></td>
<td>THICKNESS</td>
</tr>
<tr>
<td>CHIEF AQUIFER</td>
<td>Unconfined</td>
</tr>
<tr>
<td></td>
<td>DEPTH TO TOP AQ.</td>
</tr>
<tr>
<td></td>
<td>DEPTH TO BOT. AQ.</td>
</tr>
<tr>
<td>SUPP. AQUIFER</td>
<td>DEPTH TO TOP AQ.</td>
</tr>
<tr>
<td></td>
<td>DEPTH TO BOT. AQ.</td>
</tr>
<tr>
<td>DRILLER</td>
<td>Reylik</td>
</tr>
<tr>
<td>DATE DRILLED</td>
<td>5/10/2002</td>
</tr>
<tr>
<td>LOG NUMBER (DWR 188)</td>
<td></td>
</tr>
<tr>
<td>WELL PUMP TYPE</td>
<td>MAKE</td>
</tr>
<tr>
<td>WATER ANALYSIS MIN.</td>
<td>SAN.</td>
</tr>
<tr>
<td>POWER SOURCE</td>
<td>WATER LEVELS AVAILABLE?</td>
</tr>
<tr>
<td></td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td>NO</td>
</tr>
<tr>
<td>H.P.</td>
<td>MOTOR SERIAL NO.</td>
</tr>
<tr>
<td>PERIOD OF RECORD</td>
<td>BEGIN 5/10/2002 END</td>
</tr>
<tr>
<td>ELEC. METER NO.</td>
<td>TRANSFORMER NO.</td>
</tr>
<tr>
<td>COLLECTING AGENCY</td>
<td>Westlands Water District</td>
</tr>
<tr>
<td>SIZE OF DISCHARGE PIPE</td>
<td>IN.</td>
</tr>
<tr>
<td>YIELD G.P.M.</td>
<td>330.5 FT.</td>
</tr>
</tbody>
</table>

**Updated -- Well added to WWD Monitoring Network.**

**REMARKS**

**RECORDED BY** Dennis R. Loyd

**DATE** 2/7/2012
Owner: Westlands Water District  
Address: 3130 N. Fresno St., P.O. Box 6058, Fresno, CA 93798  
State No. 205/17E-29J001M  
District No. 205/17E-29J001M  
Tenant:  
Address:  
Type of Well: Hydrograph  
Location: County: Fresno  
U.S.G.S. Quod: Guijaral Hills, Calif.  
Description: From the intersection of Jayne Ave. and Butte Ave., near 7-5, 10 mi. north on Butte, 1.0 mi. east on Phelps Ave. (unpaved) then 0.3 mi. north on Lake Ave. (unpaved). Well is a six inch monitoring well standing 7' above ground painted white.  
Well is on W side of Lake just off road.  
Reference Point description: Top of 6' casing.