EAST BAY
MUNICIPAL UTILITY DISTRICT

September 19, 2016

RECEIVED
By Alameda County Environmental Health 10:47 am, Sep 22, 2016

Mr. Keith Nowell
Alameda County Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Transmittal
Sensitive Receptor Survey Work Plan
East Bay Municipal District Adeline Maintenance
Oakland, California
Geotracker Global ID: T0600102115

Dear Mr. Nowell:

East Bay Municipal Utility District (EBMUD), is pleased to submit this sensitive receptor work plan for EBMUD's Adeline Maintenance Center's leaking underground storage tank site located at 1200 21st Street in Oakland, California. This report was prepared by Engineering/Remediation Resources Group, Inc. (ERRG) on behalf of EBMUD in compliance with Alameda County Environmental Health directives related to Fuel Leak Case No. RO0000030.

> *I declare, under penalty of perjury, that the information and/or recommendations contained in the attached document or report is true and correct to the best of my knowledge.*

If you have any questions, please contact John Walter of my staff at (510) 986-7524 or via e-mail at john.walter@ebmud.com.

Sincerely,

Chandra Johannesson
Manager of Environmental Compliance

enc: Sensitive Receptor Survey Work Plan, East Bay Municipal Utility District, Adeline Maintenance Center, Oakland, California, August 2016

cc: Dan Lohr, ERRG
Michael Friedman, ERRG
ERRG Project File

Final
Sensitive Receptor Survey Work Plan
East Bay Municipal Utility District
Adeline Maintenance Center
Oakland, California

Geotracker Global ID: T0600102115

August 2016

ERRG Project No. 20160093

Prepared for:

East Bay Municipal Utility District
375 11th Street MS 704
Oakland, CA 94607

Prepared by:

ERRG
Engineering/Remediation Resources Group, Inc.
4585 Pacheco Boulevard, Suite 200
Martinez, California 94553
(925) 969-0750

Final
Sensitive Receptor Survey Work Plan
East Bay Municipal Utility District
Adeline Maintenance Center
Oakland, California

Submitted by:
Engineering/Remediation Resources Group, Inc.

	8/2/2016
Signature	Date
Erik Oehlschlager	Project Manager
Name	Title
	8/2/2016
Signature	Date
Michael Friedman	Program Manager
Name	Title

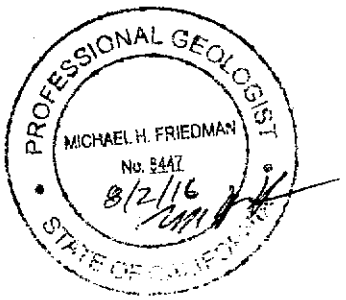

Table of Contents

List of Figures

List of Table

List of Appendices

Abbreviations and Acronyms

ACEH	Alameda County Environmental Health Department
ACPWA	Alameda County Public Works Agency
AMC	Adeline Maintenance Facility
AOCs	areas of concern
bgs	below ground surface
DWR	Department of Water Resources
EBMUD	East Bay Municipal Utility District
ERRG	Engineering/Remediation Resources Group, Inc.
GeoPlexus, Inc.	GeoPlexus
LNAPL	light nonaqueous-phase liquids
LUST	leaking underground storage tank
SRS	sensitive receptor survey
UST	underground storage tank
§	section

Section 1. Introduction

Engineering/Remediation Resources Group, Inc. (ERRG) has produced this work plan in response to East Bay Municipal Utilities District's (EBMUD) request for a sensitive receptor survey (SRS) related to the Adeline Maintenance Center (AMC) leaking underground storage tank (LUST) site in Oakland, California. This work plan for State Water Resources Control Board GeoTracker Global Identification No. T0600102115 case follows the directive of the Alameda County Environmental Health Department (ACEH) of the Alameda County Health Care Services Agency SRS (ACEH, 2016), and describes the specific activities that ERRG will perform to evaluate the presence of sensitive receptors in proximity to the AMC LUST site.

The primary elements of the SRS are summarized below.

- Section 2.1. Request a well radius search of the surrounding vicinity of the site to locate any domestic, agricultural, and municipal wells on record with the California Department of Water Resources and Alameda County Public Works Water Resources Section.
- Section 2.2. Conduct a geophysical survey to locate and determine the depths of any subsurface utilities at the site to evaluate whether utility corridors are potential preferential pathways for lateral migration of contaminants in the subsurface.

The remainder of this section describes the site's location, description, and background.

In addition to this introduction, this work plan describes activities that will be performed as part of this SRS (Section 2), and reporting of SRS findings (Section 3). Section 4 lists the guidance and documents that were used to prepare this work plan.

1.1. SITE LOCATION AND DESCRIPTION

The site is located at 1200 21st Street in Oakland, California (Figure 1). EBMUD owns the property and it currently houses the Central Warehouse and Shops Building. Historically, the site has been used for vehicle and equipment maintenance and fuel storage/distribution for EBMUD vehicles and equipment since the 1930s. Current areas of concern (AOCs) include a former gasoline and service station (AOC-1), a former auto shop (AOC-2) and a former machine shop and waste oil tank (AOC-3). The locations of former and current structures are presented on Figure 2.

1.2. REGIONAL GEOLOGY AND HYDROGEOLOGY

The site is part of the Oakland sub-area of the East Bay Plain. Regional lithology beneath the site consists of Holocene and late Pleistocene alluvial fan deposits. Local lithology at the site is mostly clay, silty clay or sandy clay to a maximum explored depth of 26 feet below ground surface (bgs) (AECOM, 2015).

Groundwater in the East Bay Plain basin is designated as a potential drinking water source; however, groundwater in the basin is not currently used as a municipal drinking water supply due to readily available imported water provided by EBMUD. There are no known active drinking water supply wells located within 1,500 feet of the site; and the nearest natural surface water is San Francisco Bay, which is 1.1 miles to the northwest (AECOM, 2015).

In 2009, groundwater at the site was encountered at approximately 9 to 12 feet bgs. Groundwater flow direction is anticipated to be to the west toward San Francisco Bay. However, there are currently no groundwater monitoring wells at the site to determine actual groundwater flow direction and gradient (AECOM, 2015).

1.3. SITE BACKGROUND

ACEH reported the unauthorized release of light non-aqueous-phase liquids (LNAPL) at the site from the LUSTs in 1988. Six underground storage tanks (USTs) in AOC-1 were subsequently removed and over-excavated in November 1994. A seventh UST was removed from AOC-3 in August 1998 (AECOM, 2015). A list of USTs removed from the site is presented in Table 1.

Two site-wide subsurface investigations were conducted by GeoPlexus, Inc. (GeoPlexus) in January 1995 and October 1996 (GeoPlexus, 1995; GeoPlexus, 1997), which included soil borings in AOC-1, AOC-2, and AOC-3. Nine soil borings were advanced in 1995 and 15 additional borings were completed in 1996. All soil boring locations are shown on Figure 2. The 1995-1996 investigations concluded that shallow soils in AOC-1 and AOC-2 required excavation due to the residual petroleum hydrocarbons, volatile organic compounds, and polynuclear aromatic compounds. The remedial excavation took place in June 1997, and removed approximately 1,300 cubic yards of soil from AOC-1 and 200 cubic yards from AOC-2 (GeoPlexus, 1998).

The new Adeline Maintenance Center was constructed in 1998. During construction the 2,500 gallon UST was removed and soil was overexcavated from AOC-3. In May 2008, ACEH requested that EBMUD conduct an additional investigation, which was completed by Alisto Engineering Group (Alisto). Thirty-eight soil borings were advanced in 2009 for the collection of soil and groundwater samples for analyses (Figure 2). Additional details of the drilling and sampling methodology and boring log details can be found in Alisto's 2009 Site Investigation Report (Alisto, 2009).

In 2015, AECOM prepared a technical memorandum that presented the results from Alisto's 2009 Site Investigation Report as well as historical soil and groundwater data to assess potential data gaps for the AMC. AECOM recommended installation of groundwater monitoring wells to define the extent of the groundwater contamination and allow for the determination of groundwater flow and direction (AECOM, 2015). However, in 2016 ACEH concluded that it is premature to perform a groundwater contamination study and requested preparation of a work plan for a sensitive receptor survey to be submitted to ACEH by August 26, 2016 (ACEH, 2016).

Section 2. Sensitive Receptor Survey

The objective of this SRS, is to develop an understanding of potential contaminant exposure and preferential migration pathways at the site. To accomplish this goal, ERRG will conduct a sensitive receptor survey consisting of a groundwater well search and an underground utility investigation. The SRS will attempt to associate contaminant sources with potential receptors through exposure pathways.

The SRS will not assess the severity of risk associated with potential exposure, yet will attempt to identify any domestic, agricultural, and municipal water wells on record as well as any underground utility corridors that may serve as preferential contaminant migration pathways.

2.1. WELL RADIUS SEARCH

In order to identify potential exposure pathways, ERRG will request well radius searches using the forms provided by the Department of Water Resources (DWR) and Alameda County Public Works Agency (ACPWA). According to California Water Code Section (§) 13752, the DWR and ACPWA individually allow the release of confidential copies of well records on file to governmental agencies and to the public. In pursuant of California Water Code § 13751, inquiring agencies may complete the DWR Well Completion Report Request Form and ACPWA Well Completion Report Release Agreement, included in Appendix A, to receive a report of water wells in the vicinity of a property. The well radius search will identify the well type, owner, and status of wells within a given radius of the site.

2.2. GEOPHYSICAL SURVEY

As part of the SRS, ERRG will subcontract a third party private utility locator to perform a geophysical survey to locate and determine the depths of any underground utilities in the area of the three AOCs in order to determine whether utility corridors are potential preferential pathways for lateral migration of contamination to subsurface soil and groundwater. The utility lines will be electrically energized or a transmitter will be inserted to locate the utility and identify its depth. Any located utilities will be marked on the ground with paint and ERRG will document their locations using a hand held global position system device.

Section 3. Reporting

ERRG will prepare a brief letter report summarizing the findings of the sensitive receptor survey, which will include a summary of field activities, well search results, a map of any located utilities with depths. Well search data will be evaluated to determine well proximity to the site and located utilities depths will be evaluated against known encountered groundwater depths at the site.

Section 4. References

Alameda County Environmental Health Services (ACEH), 2016. "Letter regarding Fuel Leak Case No. RO0000030 and Geotracker Global ID T0600102115, EBMUD, 1200 21st Street, Oakland, CA 94607. From Keith Nowell, Hazardous Materials Specialist, ACEH. To John Walter, East Bay Municipal Utility District (EBMUD)." June 24.

AECOM, 2015. "Adeline Maintenance Center Technical Memorandum, Oakland, California." June 30.

Alisto Engineering Group, 2009. "Site Investigation Report for Bay Municipal Utility District Adeline Maintenance Center, 1200 21st Street, Oakland, California." May 21.

GeoPlexus, Inc. (GeoPlexus), 1995. "Preliminary Site Assessment Report for Adeline Maintenance Facility." March 2. September 12.

GeoPlexus, 1997. "Subsurface Investigation Report and Response to Agency Comments on Addendum No. 2 to Materials Management Plan for EBMUD Adeline Maintenance Facility, Oakland, CA." January 22.

GeoPlexus, 1998. "Transmittal of Phase II Construction Materials Management Final Report for EBMUD Adeline Maintenance Center, Oakland CA." June 30.

Figures

Figure 1. Site Vicinity Map
EBMUD - Adeline Maintenance Center
Oakland, California

ERRG

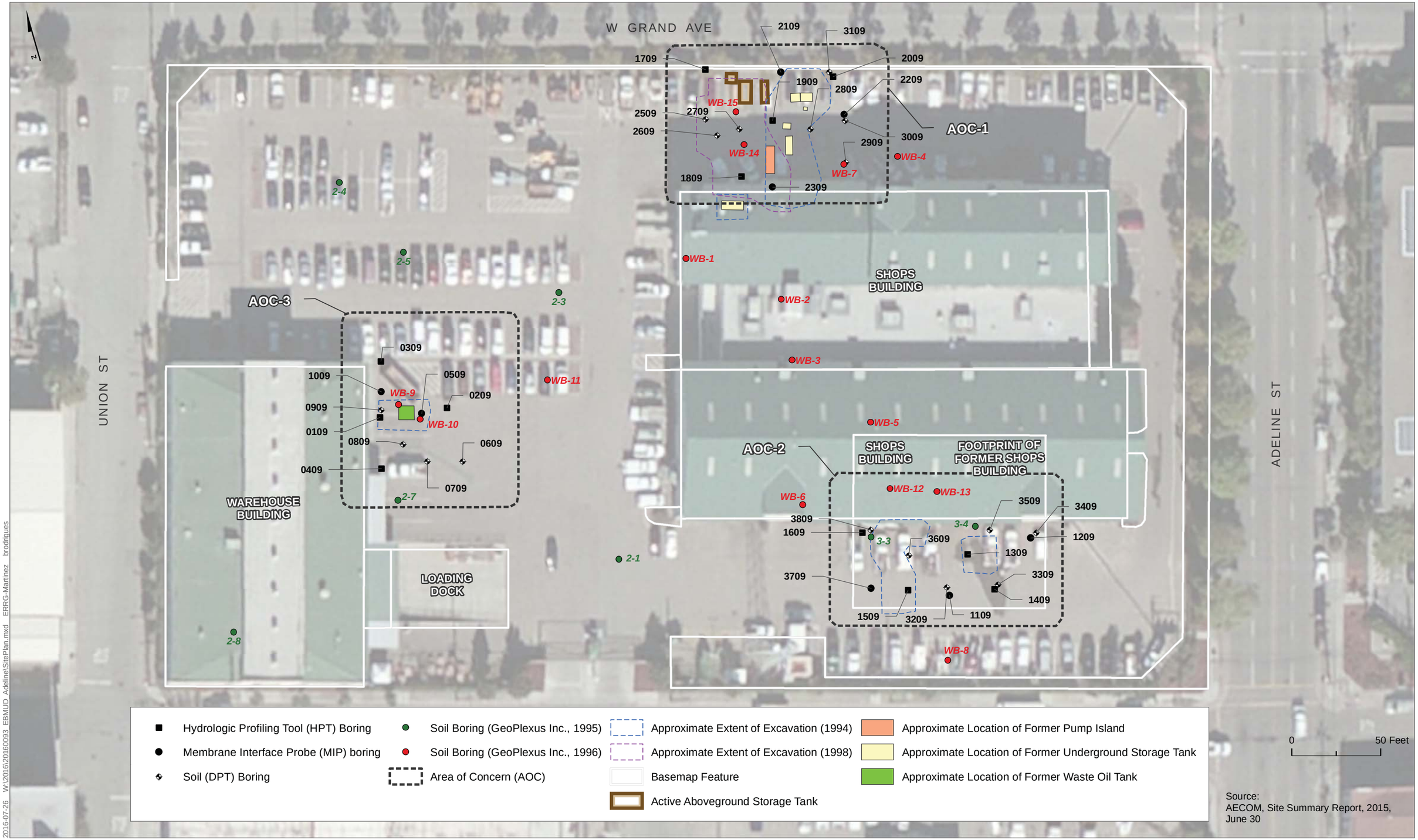

Figure 2. Site Plan
EBMUD - Adeline Maintenance Center
Oakland, California

ERRG

Table

Table 1. List of Removed USTs

Location	Volume (Gallons)	Contents	Year
AOC-1	4,000	Gasoline	1994
AOC-1	6,000	Gasoline	1994
AOC-1	500	Oily Fluid	1994
AOC-1	350	Water	1994
AOC-1	350	Water	1994
AOC-1	300	Unknown	1994
AOC-3	2,500	Waste Oil	1998

Appendix A. Forms

Public Works Agency
Alameda County

COUNTY OF ALAMEDA
PUBLIC WORKS AGENCY
WATER RESOURCES SECTION
399 Elmhurst Street, Hayward, CA 94544-1307
James Yoo PH: (510) 670-6633 FAX: (510) 782-1939
FOR GENERAL DRILLING PERMIT INFO:
www.acgov.org/pwa/wells

WELL COMPLETION REPORT RELEASE AGREEMENT—AGENCY

(Government and Regulatory Agencies and their Authorized Agents)

Project No./Site Address _____ City _____

Township, Range, and Section _____ Radius _____
(Must include entire study area and a map that shows the area of interest.)

Under California Water Code Section 13752, the agency named below requests permission from Department of Water Resources to inspect or copy, or for our authorized agent named below to inspect or copy, Well Completion Reports filed pursuant to Section 13751 to (check one):

☐ Make a study, or,

☐ Perform an environmental cleanup study associated with an unauthorized release of a contaminant within a distance of 2 miles.

In accordance with Section 13752, information obtained from these reports shall be kept confidential and shall not be disseminated, published, or made available for inspection by the public without written authorization from the owner(s) of the well(s). The information shall be used only for the purpose of conducting the study. Copies obtained shall be stamped **CONFIDENTIAL** and shall be kept in a restricted file accessible only to agency staff or the authorized agent.

Authorized Agent	Government or Regulatory Agency
Address	Address
City, State, and Zip Code	City, State, and Zip Code
Signature	Signature
Title	Title
Telephone ( )	Telephone ( )
Fax ( )	Fax ( )
Date	Date
E-mail	E-mail

DEPARTMENT OF WATER RESOURCES

NORTHERN REGION
2440 Main Street
Red Bluff, CA 96080
(530)-529-7300
(530) 529-7322 (Fax)
April.Scholzen@water.ca.gov

NORTH CENTRAL REGION
3500 Industrial Blvd.
West Sacramento, CA 95691
(916) 376-9612
(916) 376-9676 (Fax)
NCRO_WCR@water.ca.gov

SOUTH CENTRAL REGION
3374 E. Shields Ave Ste A7
Fresno, CA 93726
(559) 230-3300
(559) 230-3301 (Fax)
Chris.Guevara@water.ca.gov

SOUTHERN REGION
770 Fairmont Avenue
Glendale, CA 91203
(818) 549-2307
(818) 543-4604 (Fax)
waterdata@water.ca.gov

WELL COMPLETION REPORT REQUEST FORM

California Water Code Section 13752 allows for the release of copies of well completion reports to governmental agencies and to the public. The department may charge a fee for the provision of a report to cover the cost of researching and preparing the well completion reports for distribution. Please contact the appropriate DWR regional office for more details.

Type of Request: ☐ Government Agency ☐ Public Request (Owner of well: ☐ Yes ☐ No)
(Note: Consultant requests are Public Requests.)

Project Name: _____ County: _____

Well/ Project Location: _____

For A Single Well:
Owner at time of drilling: _____ Driller: _____

APN: _____ Year Drilled: _____ Depth of Well: _____ Casing Diameter: _____

For a Radius Search:
Search Radius: _____ ☐ft ☐mi List of Township, Range, and Sections: _____

_____

Additional Information related to your search request (Maps, Coordinates, etc.):

_____

_____

_____

Requestor's Contact Information:
Name (Please print):_____ Company: _____

Address: _____ Phone: _____

City, State, and Zip Code: _____ Fax: _____

Email: _____ Date: _____

FOR DWR USE ONLY
TRS: _____ Cost of Search: _____

PQ Check: _____ Initials: _____ Date: _____ Time: _____ PMT Received: _____