AGENDA
WATER ISSUES COMMITTEE MEETING
WITH BOARD OF DIRECTORS *
ORANGE COUNTY WATER DISTRICT
18700 Ward Street, Fountain Valley, CA 92708
Wednesday, March 8, 2017, 8:00 a.m. - Boardroom

* The OCWD Water Issues Committee meeting is noticed as a joint meeting with the Board of Directors for the purpose of strict compliance with the Brown Act and it provides an opportunity for all Directors to hear presentations and participate in discussions. Directors receive no additional compensation or stipend as a result of simultaneously convening this meeting. Items recommended for approval at this meeting will be placed on the March 15, 2017 Board meeting Agenda for approval.

ROLL CALL

ITEMS RECEIVED TOO LATE TO BE AGENDIZED

RECOMMENDATION: Adopt resolution determining need to take immediate action on item(s) and that the need for action came to the attention of the District subsequent to the posting of the Agenda (requires two-thirds vote of the Board members present, or, if less than two-thirds of the members are present, a unanimous vote of those members present.)

VISITOR PARTICIPATION

Time has been reserved at this point in the agenda for persons wishing to comment for up to three minutes to the Board of Directors on any item that is not listed on the agenda, but within the subject matter jurisdiction of the District. By law, the Board of Directors is prohibited from taking action on such public comments. As appropriate, matters raised in these public comments will be referred to District staff or placed on the agenda of an upcoming Board meeting.

At this time, members of the public may also offer public comment for up to three minutes on any item on the Consent Calendar. While members of the public may not remove an item from the Consent Calendar for separate discussion, a Director may do so at the request of a member of the public.

CONSENT CALENDAR (ITEMS NO. 1 – 5)

All matters on the Consent Calendar are to be approved by one motion, without separate discussion on these items, unless a Board member or District staff request that specific items be removed from the Consent Calendar for separate consideration.

1. PURCHASE ORDER TO AGILENT TECHNOLOGIES FOR RENEWAL OF SERVICE SUPPORT AGREEMENT TO COVER GAS CHROMATOGRAPHS (GC) AND GAS CHROMATOGRAPHS/ MASS SPECTROMETERS (GC/MS) IN THE LABORATORY

RECOMMENDATION: Agendize for March 15 Board meeting: Authorize issuance of Purchase Order to Agilent Technologies in the amount of $84,110 for renewal of Support Service Agreement, with prepayment option commencing March 21, 2017 to cover specified analytical systems used within the laboratory
2. ACCEPT COMPLETION OF CONTRACT NO. SG-2016-1 WITH BEKS ACQUISITION INC. DBA BC2 ENVIRONMENTAL FOR MONITORING WELL OCWD-BS24C CONSTRUCTION

RECOMMENDATION: Agendize for March 15 Board meeting: Accept completion of work and authorize Notice of Completion for Contract No. SG-2016-1 for the construction of monitoring well OCWD-BS24C.

3. EAST NEWPORT MESA GROUNDWATER INVESTIGATION MONITORING WELL INSTALLATIONS: AWARD CONTRACT GBM-2017-1 TO ABC LIOVIN DRILLING, INC

RECOMMENDATION: Agendize for March 15 Board meeting:

1) Receive and File Affidavit of Publication of Notice Inviting Bids for Contract GBM-2017-1; and

2) Accept bid and award Contract No. GBM-2017-1 to ABC Liovin Drilling, Inc. for an amount not to exceed $62,419

4. AMENDMENT TO AGREEMENT WITH RUTH VILLALOBOS AND ASSOCIATES TO SUPPORT THE PRADO BASIN FEASIBILITY STUDY

RECOMMENDATION: Agendize for March 15 Board meeting: Authorize execution of Amendment No. 1 to Agreement No. 1170 with Ruth Villalobos and Associates for an amount not to exceed $60,000 to support the Prado Basin Feasibility Study

END OF CONSENT CALENDAR

MATTERS FOR CONSIDERATION

5. LA PALMA RECHARGE BASIN PROJECT: AUTHORIZE NOTICE OF COMPLETION TO LOS ANGELES ENGINEERING, INC. AND RATIFY CHANGE ORDERS 1 – 4

RECOMMENDATION: Agendize for March 15 Board meeting:

1) Ratify Change Order Numbers 1 – 4 to Los Angeles Engineering, Inc. for a total amount of $77,543; and

2) Accept completion of work and authorize filing a Notice of Completion for Contract No. LPRB-2015-1: La Palma Recharge Basin

6. SOUTH BASIN REMEDIATIONAL INVESTIGATION: AWARD CONTRACT GBM-2017-3 TO YELLOW JACKET DRILLING, AND AUTHORIZE AMENDMENT TO AGREEMENT WITH AQUILOGIC, INC. FOR DATABASE MANAGEMENT

RECOMMENDATION: Agendize for March 15 Board meeting: Adopt resolution that contains the following determinations and actions:

1) Prior to approving the well construction contract award, the Board of Directors of the District has considered and determined that Addendum No. 1 to the Final Mitigated Negative Declaration adequately analyzes proposed changes to the project;
2) Accept bid and award Contract No. GBM-2017-3 to Yellow Jacket Drilling for $442,525;

3) Authorize Amendment No. 3 to Agreement No. 0827 with Aquilogic, Inc. in the amount of $58,100 for services to update and maintain the South Basin project database for 12 months and provide access to Hargis + Associates; and

4) Authorize filing of a Notice of Determination

7. PROPOSED FISCAL YEAR 2017-18 WATER PURCHASE BUDGET

RECOMMENDATION:  Agendize for March 15 Board meeting: Provide comments and direction

INFORMATIONAL ITEM

CHAIR DIRECTION AS TO ITEMS IF ANY TO BE AGENDIZED AS MATTERS FOR CONSIDERATION AT THE MARCH 15 BOARD MEETING

DIRECTORS’ ANNOUNCEMENTS/REPORTS

GENERAL MANAGER’S ANNOUNCEMENTS/REPORTS

ADJOURNMENT
In accordance with the requirements of California Government Code Section 54954.2, this agenda has been posted at the guard shack entrance and in the main lobby of the Orange County Water District, 18700 Ward Street, Fountain Valley, CA and on the OCWD website not less than 72 hours prior to the meeting date and time above. All written materials relating to each agenda item are available for public inspection in the office of the District Secretary. Backup material for the Agenda is available at the District offices for public review and can be viewed online at the District’s website: www.ocwd.com

Pursuant to the Americans with Disabilities Act, persons with a disability who require a disability-related modification or accommodation in order to participate in a meeting, including auxiliary aids or services, may request such modification or accommodation from the District Secretary at (714) 378-3233, by email at jdurant@ocwd.com by fax at (714) 378-3373. Notification 24 hours prior to the meeting will enable District staff to make reasonable arrangements to assure accessibility to the meeting.

As a general rule, agenda reports or other written documentation has been prepared or organized with respect to each item of business listed on the agenda, and can be reviewed at www.ocwd.com. Copies of these materials and other disclosable public records distributed to all or a majority of the members of the Board of Directors in connection with an open session agenda item are also on file with and available for inspection at the Office of the District Secretary, 18700 Ward Street, Fountain Valley, California, during regular business hours, 8:00 am to 5:00 pm, Monday through Friday. If such writings are distributed to members of the Board of Directors on the day of a Board meeting, the writings will be available at the entrance to the Board of Directors meeting room at the Orange County Water District office.
AGENDA ITEM SUBMITTAL

Meeting Date: March 8, 2017  
Budgeted: Yes  
Budgeted Amount: $125,000  
To: Water Issues Committee  
Board of Directors  
Cost Estimate: $84,110  
Funding Source: General Fund  
Program/Line Item No.: 1038.57004  
From: Mike Markus  
General Counsel Approval: N/A  
Engineers/Feasibility Report: N/A  
Staff Contact: M. Wehner/ L. Yoo  
CEQA Compliance: N/A

Subject: PURCHASE ORDER TO AGILENT TECHNOLOGIES FOR RENEWAL OF SERVICE SUPPORT AGREEMENT TO COVER GAS CHROMATOGRAPHS (GC) AND GAS CHROMATOGRAPHS/MASS SPECTROMETERS (GC/MS) IN THE LABORATORY

SUMMARY

The District’s laboratory operates seven gas chromatograph/mass spectrometers (GC/MS) and two specific detector gas chromatography (GC) systems in support of a wide range of water quality monitoring programs. The District has utilized an Agilent Service Support contract; maintaining high sample throughput on these critical analytical systems. The current yearly Service Support Agreement is up for renewal. Agilent has continued to provide exceptional service and support under this agreement, which has allowed the laboratory to remain efficient in supporting increasing analytical workloads. Laboratory staff members recommend renewal of the Agilent Service Support Agreement.

Attachment(s):

Agilent Technologies

- Service Support Plan quote dated January 04, 2017
- Sole Source letter dated February 2, 2017

RECOMMENDATION

Agendize for March 15 Board meeting: Authorize issuance of Purchase Order to Agilent Technologies in the amount of $84,110 for renewal of Support Service Agreement, with prepayment option commencing March 21, 2017 to cover specified analytical systems used within the laboratory.

BACKGROUND/ANALYSIS

The District uses service contracts to keep analytical systems optimized and on-line to provide high quality analytical support. We have utilized this support service for over 25 years, which minimizes analytical labor and helps reduce overall laboratory costs. The service contract with Agilent Technologies is up for renewal, expiring in March of 2017.

The GC and GC/MS systems require the expertise of factory trained service representatives. Only the instrument vendor (Agilent) is able to provide the level of service that is required by our department with service representatives who are factory trained on each analytical
system and have access to critical spare parts. We have found the service support provided by Agilent Technologies to be outstanding.

The contract decreased by 19% compared to last year ($104,835) due to the retirement of 5 systems. The vendor continues to work with our staff to keep the contract costs down, while continuing to provide needed customized services. The Lab was able to negotiate a discount of 20% for the 2017-2018 contract based on the number of systems being covered. Cost of preventive maintenance and repairs would be much higher if handled on a time and materials basis. The total estimated cost of labor charges and service parts would have been $403,364 from January 2016 through December 2016 if we had not had a service contract in place during that period. This represents a savings for the lab of $298,529 by having a service contract at a cost of $104,835 for the past year. The contract also assures priority service, which reduces downtime and improves analytical support for important monitoring programs for GWRS, basin management and the Groundwater Producers.

Instrument service contracts have helped expand Lab capacity to handle a 10% sample load increase over the last year - without increasing staff size. Service contracts provide a variety of key benefits to the District’s laboratory:

- Technical support and optimization of techniques and applications
- Greater staff flexibility and labor reduction to improve productivity
- Optimal system performance to vendor standards for high quality data
- Extending the working lifetime of expensive analytical systems
- Program Efficiency - immediate access to critical spare parts and software updates.

To assure that the Lab can support the District’s monitoring goals, we recommend a sole source vendor support contract with Agilent. Under the service contract, we have access to application specialists and certified spare parts, which are only available through the vendor. This service contract continues to be the “insurance policy” in keeping our systems on-line and fully supporting monitoring programs.

PRIOR RELEVANT BOARD ACTION(S)

March 16, 2016, R16-03-08: Authorize issuance of Purchase Order to Agilent Technologies in the annual amount of $104,835 for a one-year full support service agreement commencing March 21, 2016 to cover gas Chromatographs and Gas Chromatographs/Mass Spectrometers used within the laboratory.

February 18, 2015, R15-02-00: Authorize issuance of Purchase Order to Agilent Technologies in the annual amount of $100,483 for a one-year full support service agreement commencing March 21, 2015 to cover gas Chromatographs and Gas Chromatographs/Mass Spectrometers used within the laboratory.

March 21, 2012, R12-3-25: Authorize issuance of Purchase Order to Agilent Technologies in the annual amount of $95,208 for a 3 year full support service agreement commencing March 21, 2012 to cover gas Chromatographs and Gas Chromatographs/Mass Spectrometers used within the laboratory.
March 16, 2011, R11-3-37: Authorize issuance of Purchase Order to Agilent Technologies in the amount of $86,197 for a one-year full support service agreement commencing March 21, 2011 to cover gas Chromatographs and Gas Chromatographs/Mass Spectrometers used in the laboratory.

March 17, 2010, R10-3-43: Authorize issuance of Purchase Order to Varian Inc. in the amount of $86,170 for a one-year full support service agreement commencing March 21, 2010 to cover specified Varian analytical systems used in the laboratory.

February 18, 2009, R09-2-23: Authorize issuance of Purchase Order to Varian Inc. in the amount of $75,599 (plus applicable sales tax) for a one-year full support service agreement commencing March 21, 2009 to cover specified Varian systems used within the main lab facility.

February 20, 2008, R08-2-32 Authorize issuance of Purchase Order to Varian Inc. in the amount of $65,654 (plus applicable sales tax) for a one-year full support service agreement commencing March 21, 2008 to cover specified Varian systems used within the main lab facility.
Delivery Site:
Orange County Water District
18700 Ward St
FOUNTAIN VALLEY CA 92708-6930
USA
Tax ID:
Anny Lau
alau@ocwd.com
+17143783339

Invoice To:
Orange County Water District
PO Box 20845
FOUNTAIN VALLEY CA 92728-0845
USA
Tax ID:

Comment:
1. Parts of the Bruker 3800 GCs can no longer be sourced. Labor only for repair coverage has been quoted for each 3800 GC. Any necessary parts will need to be sourced separately by OCWD.

2. Support on the Saturn 2000 (Past EGS 3/31/2013) and 2200 (Past EGS 5/31/2013) MS Detectors is Best Effort Parts (Repair + PM) Mass Spec Detector Only coverage.

3. Tekmar 3100 # very limited support, no parts.

Service Contract Quotation:

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Quotation Number: 5000380660
Quotation Date: January 04, 2017
Coverage Period: 03/21/2017 - 03/20/2018
Payment Terms: Net 30 days
Quotation Expiration Date: All quoted prices are valid for 90 days from quotation date.

Direct Inquiries to:
Contact Name: Dennis Morin
Contact E-mail: DENNIS.MORIN@AGILENT.COM
Contact Telephone: +17814083088
Contact Fax:

Learn more about Agilent’s Special Offers, Products, Services and our full range of laboratory productivity solutions optimized for your applications and workflows. Visit us at www.agilent.com/chem

Agilent Technologies Inc
5301 Stevens Creek Blvd
Santa Clara CA 95051
United States

Federal Tax ID: 77-0518772
Beneficiary Bank: Bank of America
Beneficiary Account: 12331-31561

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Line Item Note: 2 LABOR ONLY, extended services for GC.

Line Item Note: 5 LABOR ONLY, extended services for GC.
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Total Amount before Discount: 105,125.62
Discount - Region/Country: -21,025.12
Total before Tax: 84,100.50
Sales Tax 0.011%: 8.91
Total (USD): 84,109.41

EGS = End of Guaranteed Support for earliest module
Summary of Charges:

Note: These prices reflect additions, deletions and warranties.

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Notes:
Tax calculated based on applicable tax rate in effect today for delivery location(s). Tax rate and taxability of deliverable(s) subject to change based on state laws. If tax exempt contact support agreement administrator.

Exhibit URL

Exhibit22L.asp

Exhibit22R
http://www.agilent.com/en-us/services/analytical-instrument-services/exhibit22r  Password: 5eprewRu

Exhibit22S.asp

Exhibit22X.asp
http://www.agilent.com/en-us/services/analytical-instrument-services/exhibit22x  Password: br8zUWuC
This Quotation is valid only for the period indicated. All Services quoted are subject to the Agilent Service Terms (http://www.chem.agilent.com/en-US/products-services/Services/Pages/e16S_us_canada_mexico.aspx) and the Agilent Service Exhibits referenced above. Products, parts and software are subject to the Agilent Terms of Sale (http://www.chem.agilent.com/en-US/products-services/Services/Pages/e16S_us_canada_mexico.aspx). Products or Services that are manufactured, configured or adapted to meet Customer’s requirements are subject to the Agilent Terms of Sales - Custom products (http://www.chem.agilent.com/en-US/products-services/Services/Pages/e16S_us_canada_mexico.aspx). If you have a previously signed agreement with Agilent covering such Products, Services or spare parts, the terms of that agreement will take precedence for those Products, Services or spare parts. Agilent expressly objects to any different or additional terms in your purchase/sales order documentation, unless agreed to in writing by Agilent. Spare parts and Service availability dates are estimated at the time of the quotation. Actual delivery dates or delivery windows will be specified at the time Agilent acknowledges and accepts your purchase order. The above conditions shall apply to the fullest extent permitted by the law governing this transaction and shall not derogate from any statutory or legal rights you may have thereunder. Commodities, technology or software exported from the United States of America (“U.S.”) or from other exporting countries will be subject to the U.S. Export Administration Regulations and all exporting countries’ export laws and regulations. Diversion contrary to U.S. law and the applicable export laws and regulations is prohibited. Warranty: Unless otherwise indicated herein, spare parts referenced in this document will receive a 90 day replacement warranty.
Anny Lau  
Supervising Chemist  
Orange County Water District  
18700 Ward Street, Fountain Valley, CA 92708  

Dear Anny,  

Agilent Technologies chemical analysis and life sciences instruments are highly complex and sensitive. Because of their unique technical nature, we recommend that instrument services be performed by Agilent, an ISO 9001:2008-certified source for factory-authority service. Services performed by providers who are not Agilent factory-authorized could invalidate Agilent’s warranties. Although Agilent may not be the only vendor who can repair or maintain your equipment, we are the sole source for the following:  

- Agilent-authorized service representatives that are routinely trained on latest technology and regulatory guidelines, and have an average of 10 years instrument repair experience  
- Agilent proprietary factory-recommended upgrades and service notes  
- Agilent proprietary software updates  
- Agilent Remote Advisor - remote troubleshooting and diagnostics tools  
- Agilent Service Guarantee: If we can’t fix an instrument covered by a contract, we’ll replace it

In addition, Agilent’s service contracts offer many other advantages:  

- Priority response time, with 85% of service calls successfully resolved on the first visit  
- Agilent-certified replacement parts, and a local parts inventory with 24-hour hotline ordering capability to ensure Agilent engineers have quick access to the parts needed for repair  
- Local field representatives in all major metropolitan areas – with 98% customer satisfaction  
- Assigned Account Customer Engineer and Backup Customer Engineer  
- Remote hardware and software telephone support from factory-trained engineers  
- Software update service  
- Call Center support  
- Quality measures for timely response, first visit repair, and customer satisfaction  
- Factory-specified preventive maintenance procedures  
- #1 in compliance services* with a universal set of protocols for chromatography instruments regardless of make, model or manufacturer, with flexibility of set points to meet FDA guidelines

Sincerely,  

Dennis Morin  
Agilent Technologies  
Life Sciences Chemical Analysis

*Independent LCGC Magazine Survey, North America and Europe, 2004
SUMMARY

BEKS Acquisition Inc. dba BC2 Environmental (BC2) has completed all work under Contract No. SG-2016-1 for the construction of seawater intrusion monitoring well OCWD-BS24C (BS24C). The final cost was $164,805, which is $12,620 under the awarded contract amount.

RECOMMENDATION

Agendize for March 15 Board meeting: Accept completion of work and authorize Notice of Completion for Contract No. SG-2016-1 for the construction of monitoring well OCWD-BS24C.

BACKGROUND/ANALYSIS

Following unsuccessful installation of nested monitoring wells (multiple well casings in a large-diameter borehole) at the BS24 location at the Seal Beach Naval Weapons Station, the Board approved construction of a single monitoring well BS24C in October 2016. In December 2016, the Board awarded Contract No. SG-2016-1 for the construction of BS24C to BC2. The work was successfully conducted by BC2 between January 11 and February 6, 2017. The location of BS24C is shown on Figure 1. The total cost for installing monitoring well BS24C was $164,805 which is $12,620 below the awarded contract amount of $177,425.

OCWD’s license agreement with the Navy only permitted installation of a single monitoring well at the BS24 well site. Therefore, the five remaining depth-specific monitoring wells planned to be installed at this location will be constructed under a new license agreement anticipated to be issued at the end of 2017. When the license is approved, staff will update the Board on the information collected to date on the Sunset Gap seawater intrusion investigation and request additional funds to construct the remaining wells.
PRIOR RELEVANT BOARD ACTIONS

12-7-16, R16-12-168: Award Contract SG-2016-1 Monitoring Well OCWD-BS24C Construction to BEKS Acquisition Inc. dba BC2 Environmental in the amount of $177,425.


10-19-16, R16-10-143: Authorize General Manager to execute an Amendment to Contract-SG-2015-1 to reflect Change Order No. 1 for out-of-scope costs associated with the destruction of the OCWD-BSO9 monitoring wells and abandonment of the OCWD-BS24 borehole and to terminate the Agreement without fault to either party.

09-16-16, R15-9-123: Award Contract SG-2015-1 Destruction of Sunset Gap OCWD-BSO9 monitoring wells and construction of replacement monitoring well OCWD-BS24 to Cascade Drilling, L.P.


06-17-15 R15-6-77: Authorize BS09 Replacement Project and amendment to Agreement to CDM Smith for additional construction management services on Contract No. SG-2015-1, Sunset Gap Groundwater Investigation Project, Destruction and construction of monitoring wells, and authorize filing of CEQA Categorical Exemption.
Subject: EAST NEWPORT MESA GROUNDWATER INVESTIGATION MONITORING WELL INSTALLATIONS: AWARD CONTRACT GBM-2017-1 TO ABC LIOVIN DRILLING, INC.

SUMMARY

Bids for the East Newport Mesa Groundwater Investigation Monitoring Well Installations were received on February 23, 2017. Staff recommends awarding the contract to the lowest responsive bidder, ABC Liovin Drilling, Inc. for $62,419.

ATTACHMENTS:

- Figure 1 Proposed Well Locations
- Affidavit of Publication of Notice Inviting Bids

RECOMMENDATIONS

Agendize for March 15 Board meeting:

1. Receive and File Affidavit of Publication of Notice Inviting Bids for Contract GBM-2017-1;
2. Accept bid and award Contract No. GBM-2017-1 to ABC Liovin Drilling, Inc. for an amount not to exceed $62,419.

BACKGROUND/ANALYSIS

Following Board approval, the District constructed 11 shallow monitoring wells and converted one unused production well to a monitoring well in 2014. OCWD staff have collected and analyzed groundwater level and quality data from these new wells, which indicate that saline groundwater exists in shallow aquifers near Upper Newport Bay, and these aquifers are hydraulically connected to production zones in the groundwater basin. Based on these results, staff recommended constructing four additional monitoring wells to further investigate the extent and movement of the saline groundwater.

In December 2016, the Board approved the installation of the additional monitoring wells at the three locations shown in Figure 1. The Notice Inviting Bids for Contract GBM-2017-1 was issued on February 6, 2017. The following responsive bids were received on February 23, 2017:
ABC Liovin Drilling, Inc.  $62,419
Cascade Drilling, LP  $81,495
BC2 Environmental  $85,095
Yellow Jacket Drilling  $111,240
Jensen Drilling Company  $122,240

All five bids are deemed responsive and less than the geologist’s estimate of $130,000. Many drilling firms have hollow-stem auger drilling capabilities, including the local firms that provided the three lowest bids. Staff recommends awarding the contract to ABC Liovin Drilling, Inc., the lowest responsive bidder.

Table 1 below summarizes the Board-approved project budget for the East Newport Mesa Project. Anticipated project expenditures incorporating the recent bid show the project is currently tracking within the approved budget.

Table 1.
Summary of East Newport Mesa Project Budget and Anticipated Expenditures (assuming Contract GBM-2017-1 awarded to ABC Liovin)

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<th>Approved Budget</th>
<th>Anticipated Expenditures &amp; Contracted Work</th>
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<td>Surveying Services</td>
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<td><strong>$151,000</strong></td>
<td><strong>$76,419</strong></td>
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(1) Inspection services to be performed by OCWD geologists.

PRIOR RELEVANT BOARD ACTIONS

12/21/2016 R16-12-180 Adopt final IS/MND and authorize filing of Notice of Determination for the East Newport Mesa Groundwater Investigation Program; establish a project budget of $151,000; authorize installation of four additional monitoring wells; and approve staff execution of an easement deed with Vanguard University for monitoring well OCWD-M48A.


01/22/2014 R14-1-9 Approve the East Newport Mesa Groundwater Investigation Project, certify the final IS/MND, approve the Geologist’s Report, and authorize issuance of an RFP for inspection services during well installations.
Figure 1
Proposed Well Location Map

Figure 1
Well Location Map

- **Proposed Monitoring Well Site**
- **Existing Monitoring Well Site**

Legend:
- Orange Circle: Proposed Monitoring Well Site
- Purple Circle: Existing Monitoring Well Site

Map Details:
-OCWD-M53A, OCWD-M53B, OCWD-M53C
-OCWD-M65A, OCWD-M65B
-OCWD-M56
-OCWD-M54A, OCWD-M54B
-OCWD-M52A, OCWD-M52B, OCWD-M52C, OCWD-M52D
-OCWD-M51A, OCWD-M51B

Map Extents:
- Antoinette
- OCWD-M53A
- OCWD-M53B
- OCWD-M53C
- OCWD-M65A
- OCWD-M65B
- OCWD-M56
- OCWD-M54A
- OCWD-M54B
- OCWD-M52A
- OCWD-M52B
- OCWD-M52C
- OCWD-M52D
- OCWD-M51A
- OCWD-M51B

Map Scale:
- 0 to 1 Miles
AFFIDAVIT OF PUBLICATION

STATE OF CALIFORNIA, )

County of Orange ) ss.

I am a citizen of the United States and a resident of the County aforesaid; I am over the age of eighteen years, and not a party to or interested in the above entitled matter. I am the principal clerk of The Orange County Register, a newspaper of general circulation, published in the city of Santa Ana, County of Orange, and which newspaper has been adjudged to be a newspaper of general circulation by the Superior Court of the County of Orange, State of California, under the date of November 19, 1905, Case No. A-21046, that the notice, of which the annexed is a true printed copy, has been published in each regular and entire issue of said newspaper and not in any supplement thereof on the following dates, to wit:

February 6, 2017

"I certify (or declare) under the penalty of perjury under the laws of the State of California that the foregoing is true and correct":

Executed at Santa Ana, Orange County, California, on

Date: February 6, 2017

Signature

The Orange County Register
625 N. Grand Ave.
Santa Ana, CA 92701
(714) 796-2209

PROOF OF PUBLICATION
NOTICE INVITING BIDS

EAST NEWPORT MESA GROUNDWATER INVESTIGATION MONITORING WELL INSTALLATIONS

CONTRACT NO. GBM-2017-1

PLEASE TAKE NOTICE that sealed bids will be received at the office of the Contracts Administrator at the Orange County Water District, 9702 East Via Park, Fountain Valley, CA 92708 (mailing address: P.O. Box 8590, Fountain Valley, CA 92708, until 2:00 p.m. (PST) Thursday, January 25, 2018, at which time the bids will be publicly opened and read aloud for performing all work and furnishing all labor, materials and equipment for:

East Newport Mesa Groundwater Investigation Monitoring Well Installations: Construction of four monitoring wells at three sites within the Cities of Costa Mesa and Irvine. The general locations and site-specific location marks of the wells are shown on the Figures. These monitoring well installations will be conducted under Orange County Water District (OCWD or District) Contract No. GBM-2017-1.

Well sites OCWD-MWA (MWA) and OCWD-MA6 (MA6) shall each consist of one well, and well site OCWD-M5 (M5) shall consist of two wells, located approximately ten feet apart. All wells shall be drilled using the hollow stem auger drilling method.

Upon issuance of the Notice to Proceed, work shall be completed at well sites M5 and M6. After completion of work at well sites M5 and M6, the Contractor shall demolish from the Project area. Due to well site restrictions, well site MWA will not be available until May 6, 2017. In May 2017, the Contractor shall mobilize to well site MWA and complete work at this site.

1. Provide evidence of a work/site Health and Safety Plan for review by the Geologist.
2. Secure a City of Irvine Encroachment Permit and City Business License (if applicable) for the installation of the monitoring wells. This may require preparation and city approval of a Traffic Control Plan by the Contractor.
3. Mobilize to and demolish from each well site.
4. Meet all noise, traffic control and security requirements.
5. Conduct air Knife utility clearance for each borehole location.
6. Furnish and install a minimum 4-inch diameter borehole to accommodate a 4-inch diameter well casing for each well to a maximum depth of 110 feet, or as directed by the Geologist.
7. Maintain borehole integrity after drilling. During the minimum 24-hour well design period (all sites).
8. Furnish and install nominal 4-inch diameter, flush-threaded, Schedule 80 (ASTM F-498) PVC blank casing, and nominal 4-inch diameter, flush-threaded Schedule 80 (ASTM F-498) PVC slotted well screen with 0.080-inch slots, as shown in the Figures, specified in the technical specifications, and as specified by the Geologist.
9. Install filter pack envelopes, annular seals, and sanitary surface seals.
10. Develop the wells by swabbing, bailling, and pumping.
11. Provide well surface equipment at each well site with top locking well cap and flush-mounted, 12-inch diameter, traffic-rated Emco Wheaton well boxes (Figures), or equivalent, as approved by the Geologist.
12. Arrange for on-site storage and final disposal of drill cuttings, solids, and fluids resulting from drilling construction, and development operations. The Contractor shall be responsible for containing and disposing of drill cuttings, solids and fluids in accordance with the applicable ordinances and regulations of governmental agencies having jurisdiction.
13. Maintain the site during construction and perform final site clean-up and restoration.
14. Provide all records, as required.
15. Decommission drilling equipment on site prior to mobilizing to the next well site.

The Contractor shall be responsible for the protection of public and private properties adjacent to the work and will in no event be responsible for causing damage to such properties. The Contractor shall remove or replace all existing improvements that are damaged or removed as a result of his operations. Such improvements may include curbs, gutters, sidewalks, pavements, utility installations, structures, trees (for trimming and care), etc. Repair and replacements shall be at least equal to existing improvements and shall match them in finish and dimensions.
The work is to be done in accordance with the plans, specifications and contract documents filed in the District office, 19790 Ward Street, Fontana Valley, California, which plans and specifications are designated as above, and which documents are by this reference incorporated herein.

NON-WARRANTED PREBID CONFERENCE: A prebid conference will be held at the District office, 19790 Ward Street, Fontana Valley, California on Tuesday, February 14, 2017 at 10:00 A.M. All potential bidders or their representatives are encouraged to attend this conference conducted by the District and Engineer.

The District Project Manager will review the role and participation of potential bidders in the District's Contractor Safety Program. As a part of this program the District will review the Pre-Award Safety Review Form (Appendix A of the Contractor Safety Procedures) to be discussed in greater detail.

COMPLETION OF WORK AND LIQUIDATED DAMAGES: Any work under this contract shall be completed in accordance with the following schedule, given in calendar days, beginning with the day following the effective date of the Notice to Proceed and with the Work Order. The Contractor shall complete all work associated with the installation of monitoring wells as set forth herein. All work shall be completed within 20 days of issuance of the Work Order. Failure to complete the Work within the time set forth herein shall result in the issuance of liquidated damages for each day of delay. All work shall be reviewed and approved by the District before accepting payment.

OBTAINING CONTRACT DOCUMENTS: The plans and specifications and all contract documents must be purchased through BID Admin at 225 East 4th Street, San Bernardino, California 92411. The District will not mail or fax any documents. Please make arrangements to pick up the documents at the District office.

BID GUARANTEE: Each Bid shall be accompanied by one of the following: a certified or cashier's check or bid bond. Any Bid shall be accompanied by a bond not less than ten percent (10%) of the total bid price payable to the Orange County Water District as security for the return of the Bid at any time prior to the execution of the contract. Each Bid shall also be accompanied by a bond not less than ten percent (10%) of the total bid price payable to Labor and Material Bond in an amount not less than one hundred percent (100%) of the total bid price, for labor and material. The bond is required in lieu of any required insurance and is in the event of any arisen in connection with the Performance of the Work. The Bidder shall remain in full force and effect throughout the period of performance. The Work shall be completed in accordance with the plans and specifications of the District.

WAGE RATE: As required by Section 1773 of the California Labor Code, the Director of the Department of Industrial Relations of the State of California has determined the prevailing rates of wages in the locality in which the proposed work is to be performed. The District shall be responsible for the payment of all wages to be paid to all workmen employed in the execution of the Contract.

PROJECT ADMINISTRATION: All questions relative to this project prior to the opening of bids shall be directed to the Engineer for the project. All questions relative to the project after the opening of bids shall be directed to the District Manager.

ORANGE COUNTY WATER DISTRICT
19790 Ward Street
Fontana Valley, CA 92337

Attention: General Manager

Telephone: 714-278-2000
Fax: 714-278-3377

SUBSTANTIATION OF SECURITIES: At the request and expense of the successful bidder, the District will pay the costs related to the contract documents as security for the completion of the work and in compliance with the provisions of Public Contract Code Section 22300 and the provisions of the General Provisions pertaining to Substantiation of Securities.

CONTRACTOR'S LICENSE SPECIFICATION: In accordance with the provisions of California Public Contract Code Section 22300, the District requires that the bidder be in compliance with all public contracts as required by the State of California. Each Bid shall be accompanied by a bond not less than ten percent (10%) of the total bid price payable to the Contractor for failure to comply with the provisions of the Public Contract Code Section 22300. Each bidder shall certify in writing that they are in compliance with the requirements of the District.

CONTRACTOR'S REGISTRATION: In accordance with Labor Code Section 1775, a contractor or subcontractor shall not be qualified to bid on or be listed in a bid proposal or any other form of proposal in this District if they have been convicted of a crime involving fraud or deceit or if they have been found to have violated any of the provisions of this District.

COMPLIANCE MONITORING AND ENFORCEMENT: Contractor's compliance with the work performed in this District is subject to compliance monitoring and enforcement by the California Department of Industrial Relations.

SHOOTING, SHORING AND BRACING: Pursuant to the provisions of California Labor Code Section 2277, each Bid shall be accompanied by a notice stating that the bidder shall have on hand a sufficient number of men, tools, equipment, and material for the execution of the work at the time of the contract. This work shall be performed in a manner consistent with the plans and specifications of the District.

CONTRACTOR SAFETY PROGRAM: The District has developed a Contractor Safety Program to comply with Cal-OSHA's Multi-Employer Worksite Standards. A copy of the District's Contractor Safety Program and the list of approved contractors are available from the District's Office of Public Relations.

DISTRICT'S RIGHTS RESERVED: The Orange County Water District reserves the right to reject any or all bids, to waive any informalities in any bid, and to reject any or all bids, to waive any informalities in any bid.

Dated: February 4, 2017

ORANGE COUNTY WATER DISTRICT
By: Michael A. Markov, P.E., D.W.R.
General Manager
### AGENDA ITEM SUBMITTAL

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<td>Mike Markus</td>
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<td>Staff Contact:</td>
<td>G. Woodside</td>
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<td>AMENDMENT TO AGREEMENT WITH RUTH VILLALOBOS AND ASSOCIATES TO SUPPORT THE PRADO BASIN FEASIBILITY STUDY</td>
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### SUMMARY

The District is working with the Army Corps on the Prado Basin Feasibility Study which will lead to a permanent change in the Water Control Plan to hold water up to 505 ft msl year-round. The Study has two purposes: evaluating ecosystem restoration and increasing water conservation at Prado. Additional funding is needed by a contractor to provide report preparation services for the Feasibility Study.

Attachment(s): Ruth Villalobos and Associates proposal dated March 2, 2017

### RECOMMENDATION

Agendize for March 15 Board meeting: Authorize execution of Amendment No. 1 to Agreement Number 1170 with Ruth Villalobos and Associates for an amount not to exceed $60,000 to support the Prado Basin Feasibility Study.

### BACKGROUND/ANALYSIS

The Corps and the District are currently working on the Prado Basin CA Feasibility Study. The Feasibility Study is evaluating ecosystem restoration opportunities and permanently increasing the flood season buffer pool to elevation 505 feet.

We have encountered a staffing limitation in which the Corps does not have sufficient staff to compile and edit the report for the Feasibility Study. District staff and Corps staff are working on compiling the various sections of the report. For example, District staff is leading preparation of the environmental documentation for the Study and also preparing the maps and graphics for the Study. However, a contractor is needed to compile the various sections, edit the sections for consistent terminology, and compile the report. It is anticipated that the report including appendices will be approximately 1,000 to 1,500 pages long. Additionally, a contractor versed in the details of Prado Basin and Army Corps planning documents is needed to assist with preparing portions of the report and review the report for its overall content.
During earlier phases of the Study, Ruth Villalobos of Ruth Villalobos and Associates provided support for the Feasibility Study. Ruth Villalobos is uniquely qualified to provide technical support and assistance with preparing documentation for the Study. Ms. Villalobos is the former Chief of Planning for the Corps LA District, having worked for the Corps for over 30 years. Ms. Villalobos was also the Corps staff person responsible for completion of the previous Corps Feasibility Study, completed in year 2005, that raised the winter-time water conservation elevation from 494 feet to its current elevation of 498 feet. Ms. Villalobos is well versed in the Corps’ requirements for preparing a Feasibility Study and is very knowledgeable of the specific issues related to Prado Basin and the operation of Prado Dam.

The cost estimate from Ruth Villalobos and Associates to complete this work is $60,000. A copy of the scope of work and fee estimate is attached. Utilization of the services of Ruth Villalobos and Associates will assist with minimizing further delays in the Study.

Staff recommends the Board approve and authorize execution of Amendment No. 1 to Agreement Number 1170 with Ruth Villalobos and Associates to support the Prado Basin Feasibility Study for an amount not to exceed $60,000. This would increase the total not-to-exceed amount for Agreement Number 1170 to $105,000.

PRIOR RELEVANT BOARD ACTION(S)

6/15/2016, R16-6-79: Authorize execution of Agreement with Ruth Villalobos and Associates for an amount not to exceed $45,000 to support the Prado Basin Feasibility Study.

3/21/2012, R12-3-28: Approve and authorize revised Agreement with the Department of the Army for the Prado Basin, California Study for the evaluation of water conservation and ecosystem restoration opportunities in Prado Basin.
March 2, 2017

Greg Woodside  
Exec Director Planning & Natural Resources  
Orange County Water District  
18700 Ward Street  
Fountain Valley, CA 92708

Subject: Prado Basin Feasibility Study – USACE Support Consulting Services Proposal

Hi Greg,

RVA, Inc. is excited at the opportunity on continuing to provide OCWD with support services for the Prado Feasibility Study.

As a consultant, we have been a key player in producing milestones and the associated data for several Corps feasibility studies using SMART Planning and the 3X3X3 policies. We have participated with OCWD from the beginning of the Prado Ecosystem Restoration and Water Conservation Feasibility Study and environmental document. The RVA team has an in-depth knowledge and experience in projects within Prado basin and its tributaries.

The following tasks will be undertaken in supporting OCWD and the USACE team in the preparation of the Prado Feasibility Study document for SMART Planning.

Tasks:

- Support the USACE study manager in review of the Read-Ahead (RAH) material for the Tentatively Selected Plan (TSP) milestone. The goal for the TSP Milestone is obtaining the USACE Vertical team’s agreement on the project delivery team’s (PDT) recommendation of a TSP.

- Assist the USACE study manager in preparing the Integrated Feasibility Report (IFR). The IFR will focus on using a reasonable level of detail to collect data and model alternatives to analyze and evaluate effectiveness of the focused array of alternatives. The IFR will be released as the draft feasibility study report for public and agency review.

- Provide QC review and update the IFR’s Appendices for each of the technical element for consistency and USACE compliance.

- Compile, verify and update all of the references used in the IFR document.

- Participate in USACE in-progress-review (IPR) meetings and Project Delivery Team (PDT) meetings with the District, SPD and USACE Headquarters.
• Coordination with other USACE team members.

Schedule:
RVA will work with the USACE study manager to develop a schedule to complete the tasks.

Fee:
These tasks will be conducted on a “Fixed Fee” basis, hourly rates listed below, with a “Not-to-Exceed” limit of $60,000, unless having prior approval. The fee also include any travel expenses, such as mileage and parking.

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<td>Water Resources Planner</td>
<td>$ 120.00</td>
</tr>
<tr>
<td>Admin</td>
<td>$  60.00</td>
</tr>
</tbody>
</table>

I look forward to proceeding in providing OCWD the additional support services. Should you need additional information or have any questions please contact me at rvillalobos@rvacorp.com or (909) 245-1127.

Sincerely,

Ruth Villalobos
President
Ruth Villalobos & Associates, Inc.
AGENDA ITEM SUBMITTAL

Meeting Date: March 8, 2016
To: Water Issues Committee
    Board of Directors
From: Mike Markus
Staff Contact: C. Olsen / B. Smith

Budgeted: Yes
Budgeted Amount: $7,493,383
Cost Estimate: $7,212,106
Funding Source: SRF Loan / Grant
Program/ Line Item No. C13007
General Counsel Approval: Yes
Engineers/Feasibility Report: Complete
CEQA Compliance: Yes

Subject: LA PALMA RECHARGE BASIN PROJECT: AUTHORIZE NOTICE OF COMPLETION TO LOS ANGELES ENGINEERING, INC. AND RATIFY CHANGE ORDERS 1 – 4

SUMMARY

Construction of the La Palma Recharge Basin by Los Angeles Engineering, Inc. began in September 2015 and was completed in the February 2017. Staff recommends filing a Notice of Completion for Contract No. LPRB-2015-1.

RECOMMENDATION

Agendize for March 15 Board meeting:
1. Ratify Change Order Numbers 1 – 4 to Los Angeles Engineering, Inc. for a total amount of $77,543; and

BACKGROUND/ANALYSIS

The La Palma Basin property was purchased by OCWD in 2013 and is comprised of 17.7 acres of land located adjacent to the Carbon Creek Diversion Channel and the District’s GWRS pipeline. The recharge basin is dedicated to only receive GWRS water. Construction of the new La Palma Recharge Basin consisted of excavating the recharge basin, transporting the sandy material to other District facilities and to the Contractor’s exports site(s), constructing a pipeline to connect the basin with the existing GWRS distribution pipeline, and constructing a dewatering pump station. See Figure 1 for the project site plan and Figure 2 for an as-built aerial photo.

In March 2014, OCWD contracted with Stantec Consulting Services, Inc. for design services of the new recharge basin. Upon design completion in June 2015, the project was advertised as public works construction contract LPRB-2015-1. The contract was awarded to Los Angeles Engineering, Inc. in September 2015 and construction of the basin was completed in February 2017. The basin began recharging GWRS water in November 2016.

The La Palma Recharge Basin was completed within budget. Four change orders were issued throughout the project, all under the General Manager’s (GM) signing authority. The change orders in total were 1.1% of the construction contract. Change Order
Number 1 was issued under to Los Angeles Engineering, Inc. (LAE) in November 2015 for no cost in order to document the prevailing wage requirements of the project. Change Order Number 2 was issued to LAE in August 2016 for a net payment of $44,499 primarily for disposal of trees and extra grading associated with a mitigation site. Change Order Number 3 was issued in February 2017 to LAE for $104,807 for a variety of work and credits to OCWD including additional fencing, weir plates, landscape maintenance, and a mist containment structure. Change Order Number 4 was issued in February 2017 to LAE for a contract total decrease of $71,763 to account for changes in material export destinations and removal of portions of the contract’s scope. Project contingency funds were spent on public works bid expenses, monitoring well equipping, and minor construction management activities.

A summarized budget for the La Palma Recharge Basin project can be found in Table 1. The Project is primarily funded by a low-interest rate Clean Water SRF Loan through the State Water Resources Control Board (SWRCB) Division of Financial Assistance. Additionally, the SWRCB awarded the project a $2.86 million Proposition 1 Grant. The original land purchase was funded by issuance of commercial paper.

<table>
<thead>
<tr>
<th>Description</th>
<th>Budget (7/20/2016)</th>
<th>Projected Expenses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Land Purchase</td>
<td>$ 28,399,475</td>
<td></td>
</tr>
<tr>
<td>Pre-Design</td>
<td>$ 57,380</td>
<td>$ 57,380</td>
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<tr>
<td>Design</td>
<td>$ 389,930</td>
<td>$ 389,930</td>
</tr>
<tr>
<td>Amendment No. 1</td>
<td>$ 24,820</td>
<td>$ 24,820</td>
</tr>
<tr>
<td>Amendment No. 2</td>
<td>$ 7,500</td>
<td>$ 7,500</td>
</tr>
<tr>
<td>APU Pole Modifications</td>
<td>$ 398,000</td>
<td>$ 403,118</td>
</tr>
<tr>
<td>Permitting</td>
<td>$ 20,000</td>
<td>$ 20,000</td>
</tr>
<tr>
<td>Construction</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prime Contract LPRB-2015-1</td>
<td>$ 7,134,563</td>
<td>$ 7,134,563</td>
</tr>
<tr>
<td>Change Order No. 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Change Order No. 2</td>
<td>$ 44,499</td>
<td></td>
</tr>
<tr>
<td>Change Order No. 3</td>
<td>$ 104,807</td>
<td></td>
</tr>
<tr>
<td>Change Order No. 4</td>
<td>$(71,763)</td>
<td></td>
</tr>
<tr>
<td>Materials &amp; Compaction Testing</td>
<td>$ 26,902</td>
<td>$ 26,367</td>
</tr>
<tr>
<td>Arch/Paleo &amp; Native American Monitors</td>
<td>$ 32,085</td>
<td>$ 30,062</td>
</tr>
<tr>
<td>Project Contingency (5% of const. contract)</td>
<td>$ 358,820</td>
<td>$ 14,693</td>
</tr>
<tr>
<td>Total Design and Construction</td>
<td>$ 8,450,000</td>
<td>$ 8,185,976</td>
</tr>
</tbody>
</table>

Proposition 1 Grant $ 2,860,540
Table 2: La Palma Recharge Basin Project Schedule Summary

<table>
<thead>
<tr>
<th>Description</th>
<th>Completion Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advertise for Design</td>
<td>March 2014</td>
</tr>
<tr>
<td>Award Design</td>
<td>June 2014</td>
</tr>
<tr>
<td>Complete Design</td>
<td>June 2015</td>
</tr>
<tr>
<td>Advertise for Construction</td>
<td>June 2015</td>
</tr>
<tr>
<td>Award Construction</td>
<td>September 2015</td>
</tr>
<tr>
<td>Complete Construction</td>
<td>February 2017</td>
</tr>
</tbody>
</table>

Figure 1: La Palma Basin Site Plan
PRIOR RELEVANT BOARD ACTION(S)

2/6/17, Information: Orange County chapter of American Society of Civil Engineers and Orange County Engineering Council award notices

10/5/16, R16-10-132: Approve Easement Agreement to City of Anaheim for the modification of electrical poles and guy anchor systems at La Palma Recharge Basin

7/20/16, R16-7-99: Ratify Amendment No. 1 to Agreement No. 1110 with American Geotechnical, Inc. in the amount of $7,400 for additional geotechnical and material testing services; and Authorize Amendment No. 2 to Agreement No. 1110 with American Geotechnical, Inc. in the amount of $7,001.50 for additional geotechnical and material testing services of the La Palma Recharge Basin Project

5/18/16, R16-5-59: Authorizing Amendment to La Palma Recharge Basin project Agreements to Bonterra Psomas for cultural resources monitoring and Agreement to Stantec for support services

9/16/15, R15-5-130: Receive and file Affidavit of Publication of Notice Inviting Bids for Contract No. LPRB-2015-1, La Palma Recharge Basin; Accept bid and award contract to the lowest responsive bidder Los Angeles Engineering, Inc. in the amount of $7,134,563.30; Authorize issuance of Agreement to American Geotechnical, Inc. in the amount of $12,500 for construction testing services; Authorize issuance of Agreement to Bonterra Psomas in the amount of $22,100 for archaeological, paleontological, and Native
American resources monitoring; and Authorize an increase of $2,700,000 to the budget, for a total project budget of $8,450,000

5/20/15, R15-5-67: State OCWD Intention to reimburse itself for expenditures paid prior to issuance of obligations or approval by State Water Board of the Project Funds for the La Palma Recharge Basing Project

5/20/15, M15-88: Authorize publication of Notice Inviting Bids for Contract No. LPRB-2015-1, La Palma Recharge Basing Project

3/18/15, R15-3-35: Authorize issuance of Amendment No. 1 to Agreement No. 0999 with Stantec Consulting Services, Inc. for an amount not to exceed $24,820 for additional out-of scope engineering services in support of the design of the La Palma Recharge Basin Project, Certify the Final Environmental Impact for the La Palma Recharge Basin Project, Adopt the Findings of Fact and Statement of Overriding Consideration, and Authorize Staff to file the Notice of Determination for Final Environmental Impact for the La Palma Recharge Basin Project

10/15/14, R14-10-140: Approve Agreements with Anaheim for modification of electrical poles and guy systems at La Palma Recharge Basin

6/18/14, R14-6-84: Authorize Agreement to Stantec Consulting Services for La Palma Recharge Basin Design

5/21/14, R14-5-65: Authorize issuance of a Work Order to Michael Brandman/First Carbon Solutions for Air Quality/Greenhouse Gas Emission and Traffic Technical studies and authorize issuance of a Work Order to Bonterra for Cultural Resources Technical study

3/19/14, M14-46: Authorize issuance of a Request for Proposals for the design of the La Palma Recharge Basin

1/16/13, R13-1-4: Environmental Site Assessment for Property Located at 3199 E. La Palma Ave in Anaheim

8/23/13, CS-13-8-1 Accept offer and amend purchase agreement with Panattoni Development Corporation for property located at 3199 E. La Palma Ave, Anaheim for a purchase price of $28,399,475

7/10/13, R13-7-84: Making CEQA Findings and Approving an Engineer’s Report for the Acquisition of the Property at 3199 E. La Palma Ave in Anaheim for Use as a Replenishment Basin; and Authorizing Execution of Purchase and Sale Agreement
La Palma Recharge Basin
Construction Contract Notice of Completion
LPRB-2015-1

Water Issues Committee Meeting
March 8, 2017
La Palma Recharge Basin

- Excavate/haul 248,000 cy of sandy soil
  - 180,000 cy retained by OCWD
- Flow Control Structure
- Connection to GWRS pipeline
- Pump Station
- Monitoring Well
- Process Controls / Fiber Optics
- Miraloma Basin Air-Gap Structure
GWRS Recharge Basins
Air Gap Structures

• Hydraulics:
  – prevents basin from draining to GWRS pipe during pipe break or pump failure
  – keeps pipeline full
  – all basins at similar elevation

• Regulatory:
  – Direct potable reuse will require air-gaps from recharge basins

• Performance:
  – Ensures pressure in GWRS pipeline for end-users
Aerial Tour Video
## Construction Change Orders

General Manager authority and budget up to 5% of contract

<table>
<thead>
<tr>
<th>#</th>
<th>Description</th>
<th>Date</th>
<th>Amount</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Prevailing Wage Requirements</td>
<td>Nov 2015</td>
<td>$ 0</td>
<td>0.00%</td>
</tr>
<tr>
<td>2</td>
<td>Mitigation Site Trees &amp; Grading</td>
<td>Aug 2016</td>
<td>$ 44,499</td>
<td>0.62%</td>
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<tr>
<td>3</td>
<td>Fencing, Weir Plates, Landscape, Mist Containment</td>
<td>Feb 2017</td>
<td>$ 104,807</td>
<td>1.47%</td>
</tr>
<tr>
<td>4</td>
<td>Export destinations, removal of bid items</td>
<td>Feb 2017</td>
<td>$(71,763)</td>
<td>-1.01%</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td></td>
<td>$ 77,543</td>
<td>1.09%</td>
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</tbody>
</table>
## Project Budget

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<td>$ 8,185,976</td>
</tr>
<tr>
<td>Proposition 1 Grant</td>
<td>$ 2,860,540</td>
<td></td>
</tr>
</tbody>
</table>

Design and Construction funded via SRF Loan and Proposition 1 Grant.
**Project Schedule**

<table>
<thead>
<tr>
<th>TASK</th>
<th>DATE</th>
</tr>
</thead>
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<tr>
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<td>Complete Construction</td>
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</tr>
</tbody>
</table>
Recommendation

Agendize for March 8 Board Meeting:

1. Ratify Change Order Numbers 1 – 4 to Los Angeles Engineering, Inc. for a total amount of $77,543; and

APU Pole Modification

Gain In Percolation Area

+8,000 sq ft

~

670 AFY
AGENDA ITEM SUBMITTAL

Meeting Date: March 8, 2015
Budgeted: Yes
Budgeted Amount: $571,000
To: Water Issues Committee
Boad of Directors
Cost Estimate: $500,625
Funding Source: Small Capital PAYGO
and General Fund
Program/ Line Item No.: C08007 and
1075.53010.9986
From: Mike Markus
General Counsel Approval: Yes
Engineers/Feasibility Report: Yes
CEQA Compliance: Yes
Staff Contact: R. Herndon/D.Bolin
Subject: SOUTH BASIN REMEDIAL INVESTIGATION: AWARD CONTRACT
GBM-2017-3 TO YELLOW JACKET DRILLING, AND AUTHORIZE
AMENDMENT TO AGREEMENT WITH AQUILOGIC, INC. FOR
DATABASE MANAGEMENT

SUMMARY

Bids for monitoring well construction in support of the South Basin Groundwater Protection Project remedial investigation were received on February 22, 2017. Staff recommends adopting the attached resolution awarding the contract to the lowest responsive bidder, Yellow Jacket Drilling, for $442,525 and amending the current agreement with Aquilogic, Inc. to continue to update and maintain the South Basin project database for 12 months.

Attachments:
• Figure 1 – Proposed Monitoring Well Location Map
• Affidavit of Publication of Notice Inviting Bids
• Proposed Resolution
• South Basin Additional Groundwater Monitoring Program – Final Mitigated Negative Declaration Addendum No. 1
• Aquilogic, Inc. cost proposal dated February 14, 2017

RECOMMENDATIONS

Agendize for March 15 Board meeting:

Adopt resolution that contains the following determinations and actions:

1) Prior to approving the well construction contract award, the Board of Directors of the District has considered and determined that Addendum No. 1 to the Final Mitigated Negative Declaration adequately analyzes proposed changes to the project;

2) Accept bid and award Contract No. GBM-2017-3 to Yellow Jacket Drilling for $442,525;
3) Authorize Amendment No. 3 to Agreement No. 0827 with Aquilogic, Inc. in the amount of $58,100 for services to update and maintain the South Basin project database for 12 months and provide access to Hargis + Associates; and

4) Authorize filing of a Notice of Determination.

BACKGROUND/ANALYSIS

On May 18, 2016, OCWD adopted a Mitigated Negative Declaration for the South Basin Additional Groundwater Monitoring Program (SCH 2016031047). The Mitigated Negative Declaration evaluated potential impacts associated with the construction and maintenance of 24 monitoring wells in six locations in the cities of Santa Ana and Irvine to help secure access agreements for the well sites which would allow for the timely construction of the monitoring wells to study the extent of groundwater contamination in the South Basin area of the Orange County Groundwater Basin. During final design of the project two well sites, SAM-7 and SAM-11, were relocated to other locations. The Mitigated Negative Declaration was recirculated and was subsequently adopted by OCWD on October 19, 2016. Since adoption of the Recirculated Mitigated Negative Declaration additional refinement has occurred to the project, which has required the relocation of monitoring wells SAM-8, SAM-9 and SAM-13 for logistical reasons.

To meet the requirements of the California Environmental Quality Act (CEQA), staff has prepared Addendum No. 1 to the Final Mitigated Negative Declaration for the South Basin Additional Groundwater Monitoring Program. Addendum No. 1 evaluates potential short-term construction impacts and long-term operational impacts associated with the relocation monitoring wells SAM-8, SAM-9 and SAM-13.

According to Section 15162 of CEQA Guidelines an addendum to a Final Mitigated Negative Declaration (FMND) can be prepared if the following conditions are met.

(1) No substantial changes are proposed in the project covered by the FMND which will require major revisions in the FMND due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects.

(2) No substantial changes would occur with respect to the circumstances under which the project covered by the FMND is undertaken which will require major revisions of the FMND due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects.

(3) No new information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence, at the time the FMND was certified as complete, shows either that the proposed project will have any significant effects not discussed in the FMND, that the significant effects of the proposed project will be substantially more severe than shown in the FMND, that mitigation measures or alternatives found in
Addendum No.1 has determined that the construction and operation of monitoring well sites SAM-8, SAM-9 and SAM-13 would not cause any new, substantially increase or result in more severe impacts to agriculture and forest resources compared to the level of impacts to agriculture and forest resources identified in the Final Recirculated Mitigated Negative Declaration prepared for the South Basin Additional Groundwater Monitoring Program.

Public Comments

In accordance with Section 15164 of the CEQA Guidelines an Addendum to a Final Mitigated Negative Declaration does require circulation for public review. Therefore, no public comments were received.

CEQA Recommendation

At this time the OCWD has complied with all CEQA requirements and staff recommends the Board adopt the attached resolution.

Pursuant to the Board actions in October 2016, a Notice Inviting Bids for Contract GBM-2017-3 was issued on February 2, 2017. The contract scope of work involves construction of 24 monitoring wells at 6 locations in the cities of Irvine and Santa Ana. The target depths of the wells range between 46 and 130 feet. As such, the drilling methods specified for this contract are sonic and hollow-stem auger.

The following bids were received on February 22, 2017:

- Yellow Jacket Drilling: $442,525
- BC2 Environmental: $443,777
- Cascade Drilling LP: $465,638
- Jensen Drilling Company: $577,216

All four bids are deemed responsive. The lowest responsive bid from Yellow Jacket Drilling in the amount of $442,525 is less than the geologist’s estimate of $511,000. Staff recommends awarding the contract to Yellow Jacket Drilling.

Table 1 summarizes the Board-approved project budget for the South Basin Groundwater Protection Project Additional Wells Project. Anticipated project expenditures incorporating the recent bid show the project is currently tracking within the approved budget.
Table 1. Summary of South Basin Additional Wells Project Budget and Anticipated Expenditures  
(assuming Contract GBM-2017-3 awarded to Yellow Jacket Drilling)

<table>
<thead>
<tr>
<th>Task</th>
<th>Approved Budget</th>
<th>Anticipated Expenditures</th>
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<tr>
<td>CEQA EVALUATION</td>
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<tr>
<td>Mitigated Negative Declaration</td>
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<td>$ 6,300</td>
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<tr>
<td>MONITORING WELL CONSTRUCTION</td>
<td>511,000</td>
<td>442,525</td>
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<tr>
<td>Contract GBM-2017-3</td>
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<td></td>
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<tr>
<td>CONSULTING SERVICES (Avocet Environmental)</td>
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<td>Encroachment Permitting</td>
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<td>Well Construction Inspection Services</td>
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<td>Aquifer Testing, Data Analysis, and Reporting</td>
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<td>29,194</td>
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<td>Groundwater Monitoring (2 rounds)</td>
<td>130,000</td>
<td>94,526</td>
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<td>POST-CONSTRUCTION ACTIVITIES</td>
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<td>Subtotal:</td>
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<td>CONTINGENCY (20%)</td>
<td>218,260</td>
<td>166,974</td>
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<tr>
<td>TOTAL:</td>
<td>$1,309,560</td>
<td>$1,001,843</td>
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</tbody>
</table>

SCHEDULE

Staff anticipates the following updated schedule for the South Basin Additional Groundwater Investigation Monitoring Well Installation Project:

- May 2017: Start Well Construction
- August 2017: Complete Well Construction
- October 2017: Complete Project Work, including aquifer testing & lab analysis
- November 2017: Receive Final Project Reports

South Basin Database Update and Maintenance

Aquilogic, Inc. has been updating and maintaining the South Basin project database since its inception. The Board authorized Aquilogic to continue providing database updates and maintenance in 2015 and 2016 in support of the South Basin Remedial Investigation / Feasibility Study. At staff’s request in February 2017, Aquilogic provided an estimated cost for providing database updates and maintenance for 12 months, through March 2018. Staff recommends Board approval of Amendment No. 3 in the amount of $58,100 to the agreement with Aquilogic to continue this work.
PRIOR RELEVANT BOARD ACTIONS:

10/19/16, R16-10-139  Adopt South Basin Additional Groundwater Monitoring Program Recirculated Mitigated Negative Declaration to account for revised well locations; and approve revised project.

10/19/16, R16-10-140  Authorize agreement for $374,040 with Avocet Environmental for well construction inspection and testing services in support of the South Basin remedial investigation.

5/18/16, R16-5-62  Adopt South Basin Additional Groundwater Monitoring Program Mitigated Negative Declaration; authorize construction of 24 monitoring wells; establish project budget of $1,309,560; and authorize issuance of RFP for well construction inspection and testing services.

4/20/16, R16-4-20  Authorize Amendment No. 2 to Agreement No. 0827 with Aquilogic, Inc. in the amount of $55,600 for services to update and maintain the South Basin project database for 12 months and provide access to Hargis + Associates.

1/21/15, R15-1-10  Authorize issuance of a Professional Services Agreement to Hargis + Associates for an amount not to exceed $657,852 to provide NCP consulting services in the South Basin area.

1/21/15, R15-1-10  Authorize Amendment No. 1 of Professional Services Agreement No. 0827 with Aquilogic, Inc. in the amount of $78,375 for services to update and maintain the database, provide access to the database and records to Hargis + Associates, and coordinate with Hargis + Associates through April 2016.

8/6/14, R14-8-109  Approve developing remedial strategies for the South Basin groundwater contamination in a manner that is consistent with the NCP; and authorize issuance of RFP to retain NCP consulting services to assist staff in completing the remedial investigation and conducting an evaluation of remedial alternatives in the South Basin area consistent with NCP protocol.


4/4/12 (Closed Session) Authorize issuance of a Professional Services Agreement to Aquilogic for an amount not to exceed $818,574 to provide hydrogeologic and remedial investigation services for the South Basin Groundwater Protection Project.
6/18/08, CS-08-6-3  Find that it is necessary to expend available funds to investigate, clean up, abate and perform remedial work to address VOC and perchlorate contamination in the South Basin area of the District and that such expenditures are required by the magnitude of the endeavor and the urgency of prompt action needed to prevent, abate, or contain the threatened and existing VOC and perchlorate contamination in the South Basin area; initiate litigation against potentially responsible parties for cost recovery measures for the South Basin Groundwater Protection Project; and authorize general manager, with concurrence from General Counsel, to execute Amendment No. 1 to Legal Services Agreement between OCWD and Miller, Axline & Sawyer.
Figure 1
Proposed Well Location Map
Affidavit of Publication
AFFIDAVIT OF PUBLICATION

STATE OF CALIFORNIA, )
    ) ss.
County of Orange )

I am a citizen of the United States and a resident of the County aforesaid; I am over the age of eighteen years, and not a party to or interested in the above entitled matter. I am the principal clerk of The Orange County Register, a newspaper of general circulation, published in the city of Santa Ana, County of Orange, and which newspaper has been adjudged to be a newspaper of general circulation by the Superior Court of the County of Orange, State of California, under the date of November 19, 1905, Case No. A-21046, that the notice, of which the annexed is a true printed copy, has been published in each regular and entire issue of said newspaper and not in any supplement thereof on the following dates, to wit:

February 3, 2017

"I certify (or declare) under the penalty of perjury under the laws of the State of California that the foregoing is true and correct":

Executed at Santa Ana, Orange County, California, on

Date: February 3, 2017

[Signature]

The Orange County Register
625 N. Grand Ave.
Santa Ana, CA 92701
(714) 796-2209
RESOLUTION OF THE BOARD OF DIRECTORS OF
THE ORANGE COUNTY WATER DISTRICT
AWARDING CONTRACT NO. GBM-2017-3, SOUTH BASIN PROTECTION PROJECT
ADDITIONAL MONITORING WELL INSTALLATIONS, TO YELLOW JACKET
DRILLING, APPROVING AMENDMENT TO AGREEMENT WITH AQUILOGIC FOR
DATABASE MANAGEMENT AND
AUTHORIZING FILING OF NOTICE OF DETERMINATION

WHEREAS, the District has determined that substantial Volatile Organic Compound (VOC) and perchlorate groundwater contamination has occurred in the shallow groundwater in the South Basin area of the Orange County groundwater basin and that this contamination has been detected in a deep Irvine Ranch Water District production well; and

WHEREAS, in connection with such VOC and perchlorate groundwater contamination and, pursuant to Resolution No. 16-5-62 adopted May 18, 2016, OCWD approved the South Basin Additional Monitoring Well Program, and in connection therewith adopted the Final Initial Study/Mitigated Negative Declaration, approved the Geologist’s Report, and authorized issuance of a Request for Proposals for construction management services;

WHEREAS, pursuant to Resolution No. 16-10-139 adopted October 19, 2016, OCWD adopted the South Basin Additional Groundwater Monitoring Program Re-circulated Mitigated Negative Declaration to account for revised well locations SAM-7 and SAM-11; and

WHEREAS, the District staff has advised that subsequent to adoption of the aforementioned Re-circulated Mitigated Negative Declaration for such project, additional refinement has occurred to the project which has required the relocation of monitoring wells SAM-8, SAM-9 and SAM-13 (“Revised Project”); and

WHEREAS, to meet the requirements of the California Environmental Quality Act (CEQA), staff has prepared Addendum No. 1 to the Final Recirculated Mitigated Negative Declaration for the South Basin Additional Groundwater Monitoring Program (“FRMND”) to evaluate the potential short-term construction impacts and long-term operational impacts associated with the Revised Project; and

WHEREAS, Addendum No. 1 has determined that the Revised Project would not cause any new impacts, substantially increase or result in any more severe impacts compared to the level of impacts identified in the FRMND;

WHEREAS, a Notice Inviting Bids for Contract No. GBM-2017-3, South Basin Protection Project Additional Monitoring Well Installations for the Revised Project, was published in The Orange County Register on February 2, 2017; and
WHEREAS, the following bids were received and opened on February 22, 2017:

- Yellow Jacket Drilling    $ 442,525
- BC2 Environmental    $ 443,777
- Cascade Drilling    $ 465,638
- Jensen Drilling Company   $ 577,216

WHEREAS, the District staff has recommended award of said contract to the lowest responsive bidder, Yellow Jacket Drilling in the amount of $442,525;

WHEREAS, Agreement No. 0826 was previously issued to Aquilogic, Inc. to provide hydrogeologic and remedial investigation services for the South Basin Groundwater Protection Project; and

WHEREAS, the Water Issues Committee has recommended issuance of Amendment No. 3 to such Agreement with Aquilogic, Inc. in the amount of $58,100 for services to update and maintain the South Basin project database for 12 months and provide access to Hargis + Associates (who was previously hired to provide NCP consulting services in the South Basin area);

NOW, THEREFORE, the Board of Directors of the Orange County Water District does hereby resolve as follows:

Section 1: Based on the evidence presented to the Board of Directors, including the FRMND, staff report, initial study and Addendum No. 1 to the FRMND, the Board of Directors of the Orange County Water District does hereby find that pursuant to State CEQA Guidelines Section 15164:

1. No substantial changes are proposed in the project covered by the FRMND, which will require major revisions in the FRMND due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects. As the Initial Study indicates, the Revised Project would not result in any environmental impacts not previously addressed in the FRMND.

2. No substantial changes would occur with respect to the circumstances under which the Revised Project covered by the FRMND is undertaken, which will require major revisions of the FRMND due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects. The physical and environmental circumstances analyzed in the FRMND with respect to the Revised Project are not substantially different than those analyzed in the FRMND.

3. No new information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the FRMND was adopted, shows either that the Revised Project will have any significant effects not discussed in the FRMND, or that any mitigation measures or alternatives are considerably different than those analyzed in the FRMND. The information in the
FRMND regarding the environmental impacts, environmental circumstances and mitigation measures relating to the Revised Project have not changed.

Based on the foregoing, the Final Mitigated Negative Declaration as augmented by Addendum No. 1, adequately analyzes all of the potential impacts of the revised SAM-7 and SAM-11 well locations. The Board of Directors has considered the adopted FRMND, together with Addendum No. 1, prior to approving the Revised Project, awarding Contract No.GBM-2017-3, and approving Amendment No. 3 to Agreement 0826 with Aquilogic, Inc.

Section 2: The Affidavit of Publication of Notice Inviting Bids for Contract No. GBM-2017-3, South Basin Protection Project Additional Monitoring Well Installations, is received and filed.

Section 3: The lowest responsive bid of Yellow Jacket Drilling in the amount of $442,525 is accepted and all other bids are rejected.

Section 4: The District officers are authorized to execute an Agreement on behalf of the District, in a form heretofore approved by this Board with Yellow Jacket Drilling pursuant to the terms of its proposal.

Section 5: The District General Counsel is authorized to approve the Performance and Labor and Materials Bonds submitted by said contractor on behalf of the District, provided the bonds comply with the requirements of the bid proposal.

Section 6: The District staff is directed to notify the unsuccessful bidders of the action taken herein and, upon execution of the agreement by the successful bidder, to return to the unsuccessful bidders their Bid Bonds.

Section 7: The aforementioned Amendment No. 3 to Agreement 0826 with Aquilogic, Inc. is authorized as outlined herein.

Section 8: Staff is authorized to file a Notice of Determination with respect to the Revised Project and the other actions approved herein.
South Basin Additional Groundwater Monitoring Program

Final Mitigated Negative Declaration
Addendum No. 1

State Clearinghouse No. 2016031047

Prepared By
Orange County Water District
18700 Ward Street
Fountain Valley, CA 92708
Contact: Daniel Bott

February 2017
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Appendices

Appendix 1: Final Mitigated Negative Declaration South Basin Additional Groundwater Monitoring Program

Appendix 2: Recirculated Final Mitigated Negative Declaration South Basin Additional Groundwater Monitoring Program
SECTION 1.0 INTRODUCTION

1.1 Background

On May 18, 2016 the Orange County Water District (OCWD) adopted the Final Mitigated Negative Declaration for the South Basin Additional Groundwater Monitoring Program (SCH 2016031047). The Final Mitigated Negative Declaration evaluated potential impacts associated with the construction and maintenance of 24 monitoring wells in six locations in the cities of Santa Ana and Irvine to help secure access agreements for the well sites which would allow for the timely construction of the monitoring wells to study the extent of groundwater contamination in the South Basin area of the Orange County Groundwater Basin. During final design of the project two well sites AMD-14 and OM-10 were relocated to other locations. The Mitigated Negative Declaration was recirculated and was subsequently adopted by the Orange County Water District on October 19, 2016. Since adoption of the Recirculated Final Mitigated Negative Declaration additional refinement has occurred to the project, which has required the relocation of Monitoring Wells SAM-8, SAM-9 and SAM-13. The potential impacts to the environment associated with the relocation Monitoring Wells SAM-8, SAM-9 and SAM-13 have been evaluated in Addendum No. 1 to the Final Recirculated Mitigated Negative Declaration (Addendum No.1) for the South Basin Additional Groundwater Monitoring Program.

1.2 Authority

Addendum No. 1 to the Final Recirculated Mitigated Negative Declaration for the South Basin Additional Groundwater Monitoring Program has been prepared in accordance with Section 15164 California Environmental Quality Act CEQA Guidelines. Pursuant to Section 15367 of the CEQA Guidelines, OCWD is the Lead Agency and has the principal responsibility of approving and implementing the proposed project.

The State CEQA Guidelines, 14 Cal. Code Regs. §15164, provides that an addendum is the appropriate document to identify and analyze minor modifications to a proposed project for which an EIR has been prepared and certified or if a negative declaration has been adopted. An addendum may be prepared if the minor modifications do not pose additional significant impacts or require the preparation of a Subsequent or Supplemental EIR:

“The lead agency or responsible agency shall prepare an addendum to a previously certified EIR if some changes or additions are necessary but none of the conditions described in Section 15162 calling for the preparation of a subsequent EIR have occurred.” (CEQA Guidelines Section 15164 (a))

CEQA Guidelines Section 15164(e) requires that an addendum to a previously certified EIR include an explanation as to why a subsequent EIR or a supplement to a previously certified EIR is not necessary. CEQA Guidelines Section 15162(a) sets forth the
following three criteria that require the preparation of a subsequent EIR or supplement to EIR:

(1) Substantial changes are proposed in the project which will require major revisions in the previous EIR or negative declaration due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects.

(2) Substantial changes occur with respect to the circumstances under which the project is undertaken which will require major revisions of the previous EIR or negative declaration due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects.

(3) New information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence, at the time the previous EIR, was certified as complete or the negative declaration was adopted, shows any of the following:
   (A) The project will have one or more significant effects not discussed in the previous EIR;
   (B) Significant effects previously examined will be substantially more severe than shown in the previous EIR;
   (C) Mitigation measures or alternatives previously found not to be feasible would in fact be feasible and would substantially reduce one or more significant effects of the project, but the project proponents decline to adopt the mitigation measure or alternative; or
   (D) Mitigation measures or alternatives which are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the project proponents decline to adopt the mitigation measure or alternative.

1.3 Incorporation by Reference

According to Section 15150 of the State CEQA Guidelines an EIR or negative declaration may incorporate by reference all of portions of another document which is a matter of public record or is generally available to the public. Where all or part of another document is incorporated by reference, the incorporated language shall be considered to be set forth in full as part of the text of the EIR or negative declaration.

Addendum No. 1 incorporates the following information by reference into the initial study evaluation. The referenced information is available for review at the Orange County Water District, at 18700 Ward Street, Fountain Valley, California.
• Final Recirculated Mitigated Negative Declaration South Basin Additional Groundwater Monitoring Program, August 2016.


• South Central Coastal Information Center Cultural Resource Record Search, January, 2016.

• AB 52 Tribal Coordination, December 15, 2015.

• Natural History Museum of Los Angeles County Paleontological Record Search, January 2016.
SECTION 2.0 INTRODUCTION

2.1 Purpose of Project
The South Basin Additional Groundwater Monitoring Program involves the construction and maintenance of 24 monitoring wells in six locations in City of Santa Ana and City of Irvine, Orange County California. The data gathered from the proposed monitoring wells would be used to support OCWD’s ongoing remedial investigation/feasibility study of groundwater contamination in the South Basin area of the Orange County Groundwater Basin. It is the intent of the OCWD to coordinate and work closely with the Department of Toxic Substances Control (DTSC) on the preparation of the remedial investigation/feasibility study documents for the South Basin area of the Orange County Groundwater Basin and to provide these documents to the DTSC for review once they have been prepared.

2.2 Regional Location
Addendum No.1 has been prepared to evaluate potential environmental impacts associated with the relocation of the three previously approved monitoring well site locations within the City of Irvine; SAM-8, SAM-9 and SAM-13. The regional location South Basin Additional Groundwater Monitoring Program monitoring wells is shown in Figure 1. Figure 1 shows the currently approved well site locations and the monitoring wells proposed to be relocated. A description of the wells that are proposed to be relocated is provided below.

2.3 Local Project Site Setting
Monitoring Well SAM-8
As shown in Figure 2, Monitoring Well SAM-8 would be relocated approximately 135 feet southeast of the previously approved location. The site would contain four clustered monitoring wells that would be located on the west side of Cowan Drive approximately 725-feet from the intersection of Cowan Drive and Fitch Street. The well site is surrounded by parking areas and light industrial buildings. The closest structure would be an existing light industrial building located approximately 50-feet from the well site.

Monitoring Well SAM-9
As shown in Figure 3, Monitoring Well SAM-9 would be relocated 200-feet east from the previously approved location. The site would contain four clustered monitoring wells that would be located on the south side of Armstrong Avenue, approximately 290-feet from the intersection of Armstrong Avenue and Gillette Avenue. The well site is surrounded by parking areas and light industrial buildings. The closest structure would be an existing light industrial building located approximately 95-feet from the well site.
Figure 3

South Basin Groundwater Monitoring Program
Monitoring Well SAM-9

Approved Well Site Location
Proposed Relocated Well Site
Monitoring Well SAM-13

As shown in Figure 4, Monitoring Well SAM-13 would be located approximately 250-feet southeast of the previously approved location. The site would contain four clustered monitoring wells and would be located on the south side of McGaw Avenue, approximately 550-feet from the intersection of McGaw Avenue and Pullman Street. The closest structure would be an existing light industrial building located approximately 70-feet from the well site.

2.4 Construction Operations

The proposed construction activities would occur in three construction phases. Phase 1 involves the drilling and construction of the monitoring wells. Phase 2 involves development of the monitoring wells, and Phase 3 involves site clean-up and vault installation. All construction operations would occur between the hours of 8:00 a.m. and 5:00 p.m. Monday through Friday.

**Phase 1: Monitor Well Drilling and Construction**

The equipment mix for well drilling is shown in Table 1. The proposed monitoring well boreholes would be drilled using hollow-stem auger and sonic drilling methods. The “shallow” wells at sites SAM-8, SAM-9 and SAM-13 would be drilled using hollow stem auger drilling method. These monitoring wells would consist of 4-inch diameter PVC casings installed in 10-inch diameter boreholes to depths up to 125 feet below ground surface (bgs). Once the borehole drilling is completed at each well location, the monitoring well would be constructed. Borehole drilling and well construction would not occur concurrently.

The “deep” wells at SAM-8, SAM-9 and SAM-13 (the deepest well at each site) would be drilled using sonic drilling method. These monitoring wells would consist of 4-inch diameter PVC casings installed in 8-inch diameter boreholes to depths up to 145 feet bgs. Once the sonic borehole drilling is completed at each location, the monitoring well would be constructed. Borehole drilling and well construction would not occur concurrently.

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Phase 2: Monitor Well Development

Phase 2 of the Proposed Project involves development airlifting and pumping the monitoring wells. The “shallow” hollow stem auger drilling well development would consist of approximately 3 hours of airlifting and 3 hours of pumping. The “deep” sonic well development would consist of approximately 6 hours of pumping using the generator and submersible pump. Airlifting would not be necessary for sonic wells; however, airlifting could be included in developing the sonic wells pending a later decision. Table 2 identifies the development equipment mix for well equipping.

Table 2: Well Development Equipment Mix

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Development Trips: 24, All tips assumed 25 miles.

Phase 3: Site Cleanup and Vault Installation

Phase 3 of the Proposed Project involves site cleanup and below ground vault installation. This phase of work involves minimal equipment and would be done by hand. There is no list of equipment for this phase.

2.5 Construction-Phasing

Phases 1 and 2 could occur concurrently at separate sites, pending available equipment and labor.

2.6 Monitoring Well Long-Term Operation and Maintenance Activities

In general, operation of the monitoring wells would be passive. OCWD staff would collect groundwater samples and record water levels from the wells on a quarterly basis. In total, the monitoring wells would be visited by OCWD staff 8 times per year. One truck and one or two workers would access each well site during sampling, making a round trip length of approximately 20 miles each trip. Every three to five years OCWD
Table 3: Monitoring Well Sampling and Redevelopment Equipment Mix

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Sampling & Redevelopment Trips 6 miles

2.7 Permits and Approvals

The Addendum No. 1 to Recirculated Mitigated Negative for the South Basin Additional Groundwater Monitoring Program would be used as the supporting CEQA environmental documentation for the following approvals and permits.

- Orange County Water District project approval and related construction contracts and agreements.
- City of Irvine Well Encroachment Permit to construct Monitoring Wells within City right-of-way.
- County of Orange Health Care Agency Well Permits.
South Basin Groundwater Monitoring Program
Monitoring Well SAM-13

Path: I:\SS\Bott\SouthBasinMonitoring\MXD\Sam13.mxd

Approved Well Site Location
Proposed Relocated Well Site

Figure 4
Environmental Checklist
For CEQA Compliance

SECTION 3.0 ENVIRONMENTAL CHECKLIST EVALUATIONS

I. Project Title: Addendum No.1 Recirculated Mitigated Negative Declaration South Basin Additional Groundwater Monitoring Program

II. Lead Agency Name and Address: Orange County Water District, 8700 Ward Street, Fountain Valley, CA 92708

III. Project Contact: Daniel Bott

IV. Location: Cities of Irvine

V. Environmental Determination on the basis of this initial evaluation, I find that:

   a) ☐ The proposed project COULD NOT have a significant effect on the environment and a NEGATIVE DECLARATION will be prepared.

   b) ☐ Although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions to the project have been made by or agreed to by the applicant. A MITIGATED NEGATIVE DECLARATION will be prepared.

   c) ☐ The proposed project MAY have a significant effect on the environment and an ENVIRONMENTAL IMPACT REPORT is required.

   d) ☐ Although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR (EIR No. - ) pursuant to applicable standards and (b) have been avoided or mitigated pursuant to that earlier EIR, including revisions or mitigation measures that are imposed upon the project, nothing further is required.

   e) ☐ Pursuant to Section 15164 of the CEQA Guidelines, a Mitigated Negative Declaration has been prepared earlier and only minor technical changes or additions are necessary to make the previous Mitigated Negative Declaration adequate and these changes do not raise important new issues about the significant effects on the environment. An ADDENDUM to the Mitigated Negative Declaration shall be prepared.

   f) ☐ Pursuant to Section 15162 of the CEQA Guidelines, an EIR (EIR No. - ) has been prepared earlier; however, subsequent proposed changes in the project and/or new information of substantial importance will cause one or more significant effects no previously discussed. A SUBSEQUENT EIR shall be prepared.

_____________________________________________   __________________
Signature Date

_____________________________________________
Printed Name
Environmental Checklist
For CEQA Compliance

I. AESTHETICS – Would the project:
   a) Have a substantial adverse effect on a scenic vista? ☐ ☐ ☒ ☐
   b) Damage scenic resources, including but not limited to, trees, rock outpourings and historic buildings within a state highway? ☐ ☐ ☐ ☒
   c) Substantially degrade the existing visual character or quality of the site and its surroundings? ☐ ☐ ☒ ☐
   d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area? ☐ ☐ ☐ ☒

II. AGRICULTURAL AND FOREST RESOURCES: In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model prepared by the California Department of Conservation as an optional model to use in assessing impacts on agricultural farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state’s inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:
   a) Convert Prime Farmland, Unique Farmland or Farmland of Statewide Importance (Farmland) to non-agricultural use? (The Farmland Mapping and Monitoring Program in the California Resources Agency, Department of Conservation, maintains detailed maps of these and other categories of farmland.) ☐ ☐ ☒ ☐
   b) Conflict with existing zoning for agricultural use or a Williamson Contract? ☐ ☐ ☒ ☐
   c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g)) ☐ ☐ ☒ ☐
   d) Result in the loss of forest land or conversion of forest land to non-forest use? ☐ ☐ ☒ ☐
   e) Involve other changes in the existing environment which, due to their location or nature, could individually or cumulatively result in loss of Farmland, to non-agricultural use or conversion of forest land to non-forest use? ☐ ☐ ☒ ☐

III. AIR QUALITY – Would the project:
   a) Conflict with or obstruct implementation of applicable Air Quality Attainment Plan? ☐ ☐ ☒ ☐
   b) Violate any stationary source air quality standard or contribute to an existing or projected air quality violation? ☐ ☐ ☒ ☐
   c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for
Environmental Checklist
For CEQA Compliance

IV. BIOLOGICAL RESOURCES – Would the project:

a) Have a substantial adverse impact, either directly or through habitat modifications, on any species identified as a candidate, sensitive or special status species in local or regional plans, policies or regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Services?

b) Have a substantial adverse impact on any riparian habitat or natural community identified in local or regional plans, policies, and regulations or by the California Department of fish and Game or U.S. Fish and Wildlife Service?

c) Adversely impact federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) either individually or in combination with the known or probable impacts of other activities through direct removal, filling hydrological interruption, or other means?

d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

e) Conflict with any local policies or ordinances protecting biological resources, such as tree preservation policy or ordinance?

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

V. CULTURAL RESOURCES – Would the project:

a) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?

b) Cause a substantial adverse change in the significance of a unique archaeological resource pursuant to define Section 15064.5?

c) Directly or indirectly disturb or destroy a unique paleontological resource or site?

d) Disturb any human remains, including those interred outside of dedicated cemeteries?

VI. GEOLOGY AND SOILS – Would the project:

a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

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<th>Environmental Checklist</th>
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<td>ozone precursors)?</td>
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<td>d) Expose sensitive receptors to substantial pollutant concentrations?</td>
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<td>e) Create objectionable odors affecting a substantial number of people?</td>
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Environmental Checklist
For CEQA Compliance

1. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning map issued by the State Geologist for the area or based on other substantial evidence of a known fault?
   - Potentially Significant Impact □
   - Less Than Significant Impact □
   - Mitigation Incorporated □
   - Less Than Significant Impact □
   - No Impact □

2. Strong seismic ground shaking?
   - Potentially Significant Impact □
   - Less Than Significant Impact □
   - Mitigation Incorporated □
   - Less Than Significant Impact □
   - No Impact □

3. Seismic-related ground failure, including liquefaction?
   - Potentially Significant Impact □
   - Less Than Significant Impact □
   - Mitigation Incorporated □
   - Less Than Significant Impact □
   - No Impact □

4. Landslides?
   - Potentially Significant Impact □
   - Less Than Significant Impact □
   - Mitigation Incorporated □
   - Less Than Significant Impact □
   - No Impact □

   b) Would the project result in substantial soil erosion or the loss of topsoil?
   - Potentially Significant Impact □
   - Less Than Significant Impact □
   - Mitigation Incorporated □
   - Less Than Significant Impact □
   - No Impact □

   c) Be located on a geologic unit or soil that is unstable or would become unstable as a result of the project and potentially result in on-or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?
   - Potentially Significant Impact □
   - Less Than Significant Impact □
   - Mitigation Incorporated □
   - Less Than Significant Impact □
   - No Impact □

   d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?
   - Potentially Significant Impact □
   - Less Than Significant Impact □
   - Mitigation Incorporated □
   - Less Than Significant Impact □
   - No Impact □

   e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste disposal systems where sewers are not available for the disposal of wastewater?
   - Potentially Significant Impact □
   - Less Than Significant Impact □
   - Mitigation Incorporated □
   - Less Than Significant Impact □
   - No Impact □

VII. GREENHOUSE GAS EMISSIONS — Would the project?
   a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?
   - Potentially Significant Impact □
   - Less Than Significant Impact □
   - Mitigation Incorporated □
   - Less Than Significant Impact □
   - No Impact □

   b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?
   - Potentially Significant Impact □
   - Less Than Significant Impact □
   - Mitigation Incorporated □
   - Less Than Significant Impact □
   - No Impact □

VIII. HAZARDOUS AND HAZARDOUS MATERIALS – Would the project:
   a) Create a significant hazard to the public or the environment through the routine transport, use or disposal of hazardous materials?
   - Potentially Significant Impact □
   - Less Than Significant Impact □
   - Mitigation Incorporated □
   - Less Than Significant Impact □
   - No Impact □

   b) Create a significant hazard to the public or environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?
   - Potentially Significant Impact □
   - Less Than Significant Impact □
   - Mitigation Incorporated □
   - Less Than Significant Impact □
   - No Impact □

   c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substance or waste within one-quarter mile of an existing or proposed school?
   - Potentially Significant Impact □
   - Less Than Significant Impact □
   - Mitigation Incorporated □
   - Less Than Significant Impact □
   - No Impact □

   d) Be located on a site which is located on a list of hazardous materials sites compiled pursuant to Government Code Section 659662.5 and, as a result, would it create a significant hazard to the public or the environment?
   - Potentially Significant Impact □
   - Less Than Significant Impact □
   - Mitigation Incorporated □
   - Less Than Significant Impact □
   - No Impact □

   e) For a project located within an airport land use plan or where such a plan has not been adopted, within
   - Potentially Significant Impact □
   - Less Than Significant Impact □
   - Mitigation Incorporated □
   - Less Than Significant Impact □
   - No Impact □
Environmental Checklist
For CEQA Compliance

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<th>Environmental Checklist Item</th>
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<td>two miles where of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?</td>
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<td>f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?</td>
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<td>g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?</td>
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<td>h) Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?</td>
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VIII. HYDROLOGY AND WATER QUALITY – Would the project:

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<th>Environmental Checklist Item</th>
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<td>a) Violate any water quality standards or waste discharge requirements?</td>
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<td>b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?</td>
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<td>c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?</td>
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<td>d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?</td>
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<tr>
<td>e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?</td>
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<tr>
<td>f) Otherwise substantially degrade water quality?</td>
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<td>g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?</td>
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<tr>
<td>h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?</td>
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<td>i) Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam?</td>
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<td>j) Inundation by seiche, tsunami, or mudflow?</td>
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Environmental Checklist
For CEQA Compliance

Orange County Water District South Basin Additional Groundwater Monitoring Program
Final Mitigated Negative Declaration Addendum No. 1

X. LAND USE AND PLANNING – Would the project:

a) Physically divide an established community?

b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

c) Conflict with any applicable habitat conservation plan or natural community conservation plan?

XI. MINERAL RESOURCES – Would the project:

a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?

XII. NOISE – Would the project result in:

a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

b) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

c) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without project?

d) For a project located within an airport land use plan or where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

e) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

f) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

XIII. POPULATION AND HOUSING – Would the project:

a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and business) or indirectly (for example, through extension of roads or other infrastructure)?

b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?
### XIV. PUBLIC SERVICES

<table>
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<tr>
<th>Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service rations, response times or other performance objectives for any of the public service:</th>
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<tbody>
<tr>
<td>Fire protection?</td>
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<td>Police protection?</td>
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<td>Schools?</td>
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<td>Parks?</td>
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<td>Other public facilities?</td>
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### XV. RECREATION

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<th>Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?</th>
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<th>Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?</th>
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### XVI. TRANSPORTATION/TRAFFIC

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<th>Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?</th>
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<th>Conflict with an applicable congestion management program, including but limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?</th>
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<th>Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?</th>
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<th>Substantially increase hazards to a design feature (e.g. sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment)?</th>
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<th>Result in inadequate emergency access?</th>
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<th>Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian</th>
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Environmental Checklist
For CEQA Compliance

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<th>FACILITIES</th>
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<th>Less Than Significant with Mitigation Incorporated</th>
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facilities, or otherwise decrease the performance or safety of such facilities?

XVII TRIBAL CULTURAL RESOURCES
Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

a) Listed or eligible for listing in the California Register or Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or

b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

XVIII. UTILITIES AND SERVICE SYSTEMS – Would the project:

a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

d) Are sufficient water supplies available to serve the project from existing entitlements and resources or are new or expanded entitlements needed?

e) Result in the determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project’s projected demand in addition to the provider’s existing commitments?

f) Is the project served by a landfill with sufficient permitted capacity to accommodate the project’s solid waste disposal needs?

g) Comply with federal, state and local statutes and regulations related to solid waste?

XIX. MANDATORY FINDINGS OF SIGNIFICANCE –

a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range
of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?

b) Does the project have impacts that are individually limited but cumulatively considerable? (*Cumulatively considerable* means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, effects of other current projects and the effects of probable future projects).

c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

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SECTION 4.0 ENVIRONMENTAL ANALYSIS

The following environmental analysis evaluates the potential environmental circumstances, impacts, mitigation measures associated with the proposed relocation of Monitor Wells SAM-8, SAM-9 and SAM-13 (Proposed Project) and compares them with the circumstances, impacts, mitigation measures identified in the Final Recirculated Mitigated Negative Declaration (FRMND) for the South Basin Additional Groundwater Monitoring Project.

4.1 Aesthetics

A. Would the project have a substantial adverse effect on a scenic vista?

No Impact: Comparable to the aesthetic condition described and evaluated in the FRMND, the proposed monitoring well sites are located within urbanized areas and surrounded by developed land uses. There are no scenic resources near the locations where the proposed monitoring wells would be constructed. Additionally, the City of Irvine General Plan does not identify any scenic vistas near the proposed monitoring well sites. Consistent with the evaluation in the FRMND, the construction and operation of the Proposed Project would not adversely impact existing vistas. No mitigation measures are required.

B. Would the project damage scenic resources, including but limited to, trees, rock outpourings, and historic buildings within a State Highway?

No Impact: Comparable to the aesthetic condition described and evaluated in the FRMND, the California Department of Transportation Scenic Highways Program identifies that there is not any State Scenic Highways within the vicinity of the proposed monitoring well sites. Consistent with the evaluation in the FRMND, the construction and operation of the Proposed Project would not have any adverse impact on existing scenic resources located along a State Scenic Highway. No mitigation measures are required.

C. Would the project substantially degrade the existing visual character or quality of the site and its surrounding?

Less than Significant Impact: Comparable to the aesthetic condition described and evaluated in the FRMND, the City of Irvine General Plan does not identify any specific design guidelines at any of the proposed monitoring well sites. The proposed monitoring wells would be located in areas that contain light industrial land uses that are situated in a landscaped business park setting. The proposed monitoring wells would be located under existing roadways and would not have a visual presence that would be in conflict with the existing business park aesthetic character. During construction, the visual character of the study area would be temporary be altered with construction activity. The construction activity would be for a short period of time, and once construction operations are completed the well sites would be returned to their pre-project condition.
Consistent with the evaluation in the FRMND, potential short term aesthetic impacts would be less than significant. No mitigation measures are required.

D. Would the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

No Impact: Comparable to the aesthetic condition described and evaluated in the FRMND, the proposed monitoring wells would be located underground and would not require permanent on-site lighting. Construction operations for the proposed monitoring wells would occur during the day. Therefore, no temporary night lighting would be required. Consistent with the evaluation in the FRMND, no short term or long term adverse light and glare impacts would occur. No mitigation measures are required.

Comparable level of Impact

Potential aesthetic impacts associated with the relocation of Monitoring Well Sites SAM-8, SAM-9 and SAM-13 would be less than significant and would result in the same level of aesthetic impacts identified in the FRMND. Therefore, the construction and operation of Monitoring Well Sites SAM-8, SAM-9 and SAM-13 would not cause any new, substantially increase or result in more severe aesthetic impacts compared to the level of aesthetic impacts identified in the FRMND.

4.2 Agricultural Resources/Forest Resources

A. Would the project convert Prime Farmland, Unique Farmland or Farmland of Statewide Importance to non-agriculture uses?

No Impact: Comparable to the condition described and evaluated in the FRMND, the State of California Farmland Mapping and Monitoring Program, indicates that there is no Prime Farmland, Unique Farmland or Farmland of Statewide Importance on any of the proposed monitoring well sites. Consistent with the evaluation in the FRMND, the construction and operation of the Proposed Project would not result in adverse impacts to Prime Farmland, Unique Farmland or Farmland of Statewide Importance. No mitigation measures are required.

B. Would the project be in conflict with existing zoning for agriculture use or a Williamson Contract?

No Impact: Comparable to the condition described and evaluated in the FRMND, the proposed monitoring well sites are not zoned for agriculture land uses. Consistent with the evaluation in the FRMND, the construction and operation of the Proposed Project would not be in conflict with any existing agriculture zoning or existing agriculture leases or contracts. No mitigation measures are required.

C. Would the project be in conflict with existing zoning for, or cause rezoning of forest land or timberland.
**No Impact:** Comparable to the condition described and evaluated in the FRMND, none of the proposed monitoring well sites are zoned for forest or timberland. Consistent with the evaluation in the FRMND, the implementation of the Proposed Project would not cause change of zone to existing forest or timberlands. No mitigation measures are required.

D. **Would the project result in the loss of forest land or conversion of forest land to non-forest use?**

**No Impact:** Comparable to the condition described and evaluated in the FRMND, there is not existing farmland on any of the proposed monitoring well sites. Consistent with the evaluation in the FRMND, the construction and operation of the Proposed Project would not convert forest land to non-forest land. No mitigation measures are required.

E. **Would the project involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agriculture use or conversion of forest land to non-forest use?**

**No Impact:** Comparable to the condition described and evaluated in the FRMND, there is not existing farmland on any of the proposed monitoring well sites. Consistent with the evaluation in the FRMND, the construction and operation of the Proposed Project would not directly or indirectly result in the loss of any forest land or result in the conversion forest lands to non-forest lands. No mitigation measures are required.

**Comparable Level of Impact**

Potential impacts to agriculture and forest resources associated with the relocation of Monitoring Well Sites SAM-8, SAM-9 and SAM-13 would be less than significant and would result in the same level of impacts to agriculture and forest resources identified in the FRMND. Therefore, the construction and operation of Monitoring Well Sites SAM-8, SAM-9 and SAM-13 would not cause any new, substantially increase or result in more severe impacts to agriculture and forest resources compared to the level of impacts to agriculture and forest resources identified in the FRMND.

4.3 **Air Quality**

A. **Would the project be in conflict with or obstruct implementation of the applicable air quality plan or congestion management plan?**

**Less than Significant Impact:** The main purpose of an air quality management plan (AQMP) is to bring an area into compliance with the requirements of Federal and State air quality standards. The relevant AQMP for the Proposed Project would be the 2012 AQMP and the 2016 AQMP. Both AQMPs are designed to accommodate expected future population, housing, and employment growth and are based on Southern California Association of Governments Regional Transportation Plans, which were developed from City and County General Plans, as well as regional population, housing,
and employment projections. Monitoring Well Sites SAM-8, SAM-9 and SAM-13 would be relocated into areas that are consistent with the City of Irvine General Plan. The mix of construction equipment for Monitoring Well Sites SAM-8, SAM-9 and SAM-13 would be the same mix of construction equipment that was evaluated in the FRMND. Comparable to the condition described and evaluated in the FRMND, the closest distance of a relocated monitoring well site to a sensitive receptor would be 50-feet. As shown in Tables 4, 5, 6 and 7, consistent with the evaluation in the FRMND, pollutant emissions from the Proposed Project would be less than the SCAQMD thresholds and would not result in a significant impact. No conflict with the 2012 AQMP or the 2016 AQMP would occur with the implementation of the Proposed Project. No mitigation measures are required.

**Table 4: Project Estimated Construction Emissions (lbs./day)**

<table>
<thead>
<tr>
<th>Activity</th>
<th>VOC</th>
<th>NOX</th>
<th>CO</th>
<th>PM10</th>
<th>PM2.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Well Drilling Plus Well Development</td>
<td>2</td>
<td>23</td>
<td>13</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>SCAQMD threshold</td>
<td>75</td>
<td>100</td>
<td>550</td>
<td>150</td>
<td>55</td>
</tr>
<tr>
<td>Exceeds Threshold</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

VOC = volatile organic compound, NOX = nitrogen oxides, CO = carbon monoxide, PM10 = particulate matter 10 microns or less, PM2.5 = particulate matter 2.5 microns or less.

Source: South Basin Additional Groundwater Monitoring Program Final Recirculated Mitigated Negative Declaration

**Table 5: Project Localized Construction Emissions (lbs./day)**

<table>
<thead>
<tr>
<th>Activity</th>
<th>NOX</th>
<th>CO</th>
<th>PM10</th>
<th>PM2.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum daily On-Site Emissions</td>
<td>9</td>
<td>4</td>
<td>&lt;0.5</td>
<td>&lt;0.5</td>
</tr>
<tr>
<td>SCAQMD threshold</td>
<td>81</td>
<td>485</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Exceeds Threshold</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

NOX = nitrogen oxides, CO = carbon monoxide, PM10 = particulate matter 10 microns or less, PM2.5 = particulate matter 2.5 microns or less.

Source: South Basin Additional Groundwater Monitoring Program Final Recirculated Mitigated Negative Declaration

**Table 6: Project Estimated Operational Emissions (lbs./day)**

<table>
<thead>
<tr>
<th>Activity</th>
<th>VOC</th>
<th>NOX</th>
<th>CO</th>
<th>PM10</th>
<th>PM2.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Well Redevelopment</td>
<td>1</td>
<td>16</td>
<td>7</td>
<td>0.5</td>
<td>0.5</td>
</tr>
<tr>
<td>Well Sampling and Water Collection</td>
<td>&lt;0.5</td>
<td>1</td>
<td>&lt;0.5</td>
<td>&lt;0.5</td>
<td>&lt;0.5</td>
</tr>
<tr>
<td>Combined Emissions</td>
<td>1</td>
<td>16</td>
<td>7</td>
<td>0.6</td>
<td>0.5</td>
</tr>
<tr>
<td>SCAQMD threshold</td>
<td>55</td>
<td>55</td>
<td>550</td>
<td>150</td>
<td>55</td>
</tr>
<tr>
<td>Exceeds Threshold</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

VOC = volatile organic compound, NOX = nitrogen oxides, CO = carbon monoxide, PM10 = particulate matter 10 microns or less, PM2.5 = particulate matter 2.5 microns or less.

Source: South Basin Additional Groundwater Monitoring Program Final Recirculated Mitigated Negative Declaration
<table>
<thead>
<tr>
<th>Activity</th>
<th>NOX</th>
<th>CO</th>
<th>PM10</th>
<th>PM2.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum Daily On-Site Emissions</td>
<td>16</td>
<td>7</td>
<td>0.5</td>
<td>0.5</td>
</tr>
<tr>
<td>SCAQMD threshold</td>
<td>81</td>
<td>485</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Exceeds Threshold</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

NOX=nitrogen oxides, CO=carbon monoxide, PM10=particulate matter 10 microns or less, PM2.5=particulate matter 2.5 microns or less.

Source: South Basin Additional Groundwater Monitoring Program Final Recirculated Mitigated Negative Declaration

B. Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Less than Significant Impact: The mix of construction equipment for Monitoring Well Sites SAM-8, SAM-9 and SAM-13 would be the same mix of construction equipment that was evaluated in the FRMND. Comparable to the condition described and evaluated in the FRMND, the closest distance to a sensitive receptor would be 50-feet. As shown in Tables 4, 5, 6, and 7 consistent with the regional and local air quality evaluations in the FRMND, the pollutant emissions generated from the construction and operation of the Proposed Project would be less than the SCAQMD thresholds and would not result in a significant impact. No mitigation measures are required.

C. Would the project result in cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?

Less than Significant Impact: Comparable to the air quality condition described and evaluated in the FRMND, the region is a Federal and/or State nonattainment area for PM10, PM2.5, and O3. The mix of construction equipment for Monitoring Well Sites SAM-8, SAM-9 and SAM-13 would be the same mix of construction equipment that was evaluated in the FRMND and would contribute particulates and the O3 precursors VOC and NOx to the study area during short-term project construction and long-term operations. As shown in Tables 4, 5, 6 and 7, consistent with the cumulative air quality evaluation in the FRMND, regional emissions would not be cumulatively considerable and the impact would be less than significant. No mitigation measures are required.

D. Would the project expose sensitive receptors to substantial pollutant concentrations?

Carbon Monoxide Hotspots

Less than Significant Impact: A CO hotspot is an area of localized CO pollution that is caused by severe vehicle congestion on major roadways, typically near intersections. If a project increases average delay at signalized intersections operating at level of service (LOS) E or F or causes an intersection that would operate at LOS D or better
without the project to operate at LOS E or F with the project, a quantitative screening is required. Comparable to the air quality condition described and evaluated in the FRMND, the Proposed Project would generate a negligible amount of traffic that would be limited to occasional inspection visits and worker commuting during well redevelopment or water sampling. Therefore, the Proposed Project would not increase congestion at major signalized intersections in the area. Consistent with the carbon monoxide hotspot evaluation in the FRMND, there would be no impact and no exposure of sensitive receptors to project-generated local CO emissions. No mitigation measures are required.

**Criteria Pollutants from On-Site Construction**

**Less than Significant Impact:** Consistent with the on-site construction air quality evaluation in the FRMND, the Proposed Project construction and operational localized impacts would be less than significant. No mitigation measures are required.

**Toxic Air Contaminants**

**Less than Significant Impact:** The greatest potential for toxic air contaminant emissions during construction or operations would be related to diesel PM emissions associated with construction equipment operations. Diesel equipment operations associated with the Proposed Project would be limited to approximately two months at each site. The assessment of cancer risk is typically based on a 30- to 70-year exposure period. Comparable to the air quality condition described and evaluated in the FRMND, because the exposure to diesel exhaust would be substantially less than the 30- to 70-year exposure period, the incremental cancer risk to exposed persons would be negligible. Consistent with the air quality evaluation in the FRMND, the impact would be less than significant. No mitigation measures are required.

**E. Would the project create objectionable odors affecting a substantial number of people?**

**Less than Significant Impact:** Comparable to the air quality condition described and evaluated in the FRMND, The Proposed Project construction activities and operational well redevelopment and well sampling activities would generate odors. Potential construction odors would mostly be diesel exhaust emissions. There may be situations where construction activity odors would be noticeable by persons working nearby, but these odors would not be unfamiliar or necessarily objectionable. The odors would be temporary and would dissipate rapidly from the source with an increase in distance. Consistent with the odor impact evaluation in the FRMND, the Proposed Project odor impacts would be short-term; would not be objectionable to a substantial number of people and would be less than significant. No mitigation measures are required.
Comparable Level of Impact

Potential air quality impacts associated with the relocation of Monitoring Well Sites SAM-8, SAM-9 and SAM-13 would be less than significant and would result in the same level of air quality impacts identified in the FRMND. Therefore, the construction and operation of Monitoring Well Sites SAM-8, SAM-9 and SAM-13 would not cause any new, substantially increase or result in more severe air quality impacts compared to the level of air quality impacts identified in the FRMND.

4.4 Biological Resources

A. Would the project have a substantial adverse impact, either directly or through habitat modifications, on any species identified as a candidate, sensitive or special status species in local or regional plans, policies or regulations or by the California Department of Fish and Game or U.S. Fish and wildlife Services?

No Impact: Comparable to the biological conditions described and evaluated in the FRMND, all of the proposed monitoring well sites are located within urbanized area and lack suitable habitat to support special status plant or wildlife species. Consistent with the evaluation in the FRMND, the construction and operation of the Proposed Project would not result significant impacts to sensitive plant and wildlife species or their habitat. No mitigation measures are required.

B. Would the project have a substantial adverse impact on any riparian habitat or natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

No Impact: Comparable to the biological conditions described and evaluated in the FRMND, the proposed monitoring well sites and the surrounding areas does not contain any sensitive vegetation natural communities that would be regulated by the California Department Fish and Wildlife, or by United States Fish and Wildlife Service. Consistent with the evaluation in the FRMND, the construction and operation of the Proposed Project would not result in adverse impacts to any sensitive vegetation natural communities. No mitigation measures are required.

C. Would the project have a substantially adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act through direct removal, filling hydrological interruption, or other means?

No Impact: A preliminary wetland assessment was conducted at Monitoring Well Sites SAM-8, SAM-9, and SAM-13 in accordance with Regional Supplement to the U.S. Army Corps of Engineers Wetland Delineation Manual Arid Region West. Based on Wetland Delineation Manual, a three parameter approach was used to identify potential Wetland Waters of the U.S. and State. These parameters include the presence of wetland vegetation, presence of hydrology and the presence of hydric soils. As shown in Table
8, comparable to the wetland conditions described and evaluated in the FRMND all of the proposed monitoring well sites lack the required parameters that define Wetland Waters of the United States and State. Consistent with the evaluation in the FRMND, the construction and operation of the Proposed Project would not result in adverse impacts to Wetland Waters of the U.S./State. No mitigation measures are required.

**Table 8: Summary of Wetland Parameters**

<table>
<thead>
<tr>
<th>Well Site</th>
<th>Wetland Vegetation Present</th>
<th>Hydrology Present</th>
<th>Hydric Soils Present</th>
<th>Wetland Determination</th>
</tr>
</thead>
<tbody>
<tr>
<td>Irvine SAM-8</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Not Present</td>
</tr>
<tr>
<td>Irvine SAM-9</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Not Present</td>
</tr>
<tr>
<td>Irvine SAM-13</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Not Present</td>
</tr>
</tbody>
</table>

D. Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

**Less than Significant Impact:** Comparable to the biological conditions described and evaluated in the FRMND, all of the proposed monitoring well sites are situated within an urbanized environment and are impacted with elevated levels of traffic noise. The study area lacks suitable habitat to support wildlife. The roadways and nearby parking areas where the monitoring wells would be constructed are lined with ornamental trees. OCWD Biologist conducted a biological survey to determine the potential for migratory birds to occur within the study area. Based on the highly urbanized environment and lack of suitable habitat there would low potential for migratory birds to occur. The construction of the monitoring wells would not require the removal of any trees. Therefore, there would be no potential for direct impacts to migratory birds. In the event migratory birds are present, it would be unlikely that construction noise from the well construction activities would adversely affect them, given the fact that the study area currently experiences elevated levels of noise. Consistent with the evaluation in the FRMND, the construction and operation of the Proposed Project would not interfere with the movement of any native resident or migratory fish, birds or other wildlife species. No mitigation measures are required.

E. Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

**No Impact.** Comparable to the biological conditions described and evaluated in the FRMND, the City of Irvine has no policies for the protection of biological resources that would apply to any of the proposed monitoring well sites. Consistent with the evaluation in the FRMND, no conflicts with local policies that provide for the protection of biological resources would occur. No mitigation measures are required.
F. Would the project be in conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

No Impact. Comparable to the biological conditions described and evaluated in the FRMND, none of the proposed well sites are included within an adopted Habitat Management Plan or Natural Community Conservation Plan. No mitigation measures are required.

Comparable Level of Impact

Potential impacts to biological resources associated with the relocation of Monitoring Well Sites SAM-8, SAM-9 and SAM-13 would be less than significant and would result in the same level of impacts to biological resources identified in the FRMND. Therefore, the construction and operation of Monitoring Well Sites SAM-8, SAM-9 and SAM-13 would not cause any new, substantially increase or result in more severe impacts to biological resources compared to the level of impacts to biological resources identified in the FRMND.

4.5 Cultural Resources

A. Would the project cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5 of the CEQA Guidelines?

Less than Significant Impact with Mitigation: Monitoring Well Sites SAM-8, SAM-9 and SAM-13 would be relocated 135 feet to 250 feet from their previously approved locations. Comparable to the cultural resource conditions described and evaluated in the FRMND, the records search review identified that there were no listed historical properties within ½ mile of the previously evaluated well site locations, which would also include the area where the three monitoring wells would be relocated. All of the well sites are located in areas where the natural ground surface has been disturbed by urban development. Even though the well sites has been previously disturbed, because historical resources are known to occur in the regional area, there would still be potential that during construction unknown historical resources could be encountered. Consistent with the evaluation in the FRMND, it is recommended that a halt condition should be in place for any ground-disturbing activities to reduce potential adverse impacts to unknown historical resources to a less than significant level.

Mitigation Measure

CR-1: In the event that any evidence of cultural resources is discovered, all work within the vicinity of the find should stop until a qualified archaeological consultant can assess the find and make recommendations.

B. Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5 of the CEQA Guidelines?
Less than Significant Impact with Mitigation: Comparable to the cultural resource conditions described and evaluated in the FRMND, the records search review identified that there were no recorded archaeological sites within ½ mile of the previously approved well site locations, which would also include the area where the three monitoring wells would be relocated. Even though the well sites have been previously disturbed, there is still potential that during construction unknown archaeological resources could be encountered. Consistent with the evaluation in the FRMND, with the implementation of Mitigation Measure CR-1 potential adverse impacts to unknown archaeological resources would be less than significant.

Mitigation Measure
Mitigation Measure CR-1 required.

C. Would the project disturb any human remains, including those interred outside of formal cemeteries?

Less than Significant Impact with Mitigation: Comparable to the cultural resource conditions described and evaluated in the FRMND, no human remains or cemeteries are known to exist near the approved well site locations, including the area where the three monitoring wells would be relocated. However, there would be the potential that subsurface construction activities associated with the Proposed Project could potentially damage or destroy previously undiscovered human remains. In the event of the accidental discovery or recognition of any human remains, CEQA Guidelines Section 15064.5; Health and Safety Code Section 7050.5; Public Resources Code Section 5097.94 and Section 5097.98 must be followed. Consistent with the evaluation in the FRMND, with the implementation of Mitigation Measure CR-2 potential impacts to human remains would be less than significant.

Mitigation Measures

CR-2: If human remains are encountered during excavation activities, all work shall halt in the vicinity of the remains and the County Coroner shall be notified (California Public Resources Code §5097.98). The Coroner will determine whether the remains are of forensic interest. If the Coroner, with the aid of a qualified Archaeologist, determines that the remains are prehistoric, s/he will contact the Native American Heritage Commission (NAHC). The NAHC will be responsible for designating the most likely descendant (MLD), who will be responsible for the ultimate disposition of the remains, as required by Section 7050.5 of the California Health and Safety Code. The MLD shall make his/her recommendation within 48 hours of being granted access to the sites. If feasible, the recommendation of the MLD shall be followed and may include scientific removal and non-destructive analysis of the human remains and any items associated with Native American burials (California Health and Safety Code §7050.5). If the landowner rejects the recommendations of the MLD, the landowner shall rebury the
remains with appropriate dignity on the property in a location that will not be subject to further subsurface disturbance (California Public Resources Code §5097.98).

D. Would the project directly or indirectly disturb or destroy a unique paleontological resource or site?

Less than Significant Impact with Mitigation: Comparable to the paleontological resource conditions described and evaluated in the FRMND, the study area for the relocated monitoring wells has surficial deposits composed of younger Quaternary Alluvium that as low potential for the discovery of vertebrate fossil remains. However, if deeper excavations extend into older sedimentary deposits there would be increased potential to encounter vertebrate fossil remains. Because there could be the potential that older sedimentary deposits could be encountered, a halt condition should be in place for any ground-disturbing activities. Consistent with the evaluation in the FRMND, with the implementation of Mitigation Measure CR-3 potential adverse impacts to unknown paleontological resources would be less than significant.

CR-3: In the event that any evidence of paleontological resources is discovered, all work within the vicinity of the find should stop and a qualified paleontologist is will be notified and retained. The Paleontological Monitor will divert heavy equipment away from the fossil site until s/he has had an opportunity to examine the remains.

Comparable Level of Impact

Potential impacts to cultural resources associated with the relocation of Monitoring Well Sites SAM-8, SAM-9 and SAM-13 would be less than significant and would result in the same level of impacts to cultural resources identified in FRMND. With the implementation of Mitigation Measures CR-1, CR-2 and CR-3 the construction and operation of Monitoring Well Sites SAM-8, SAM-9 and SAM-13 would not cause any new, substantially increase or result in more severe impacts to cultural resources compared to the level of impacts to cultural resources identified in the FRMND.

4.6 Geology/Soils

A1. Would the project expose people or structures to potential substantial adverse effects, including the risk of loss, injury or death involving rupture of an unknown earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map?

No Impact: Comparable to the geologic conditions described and evaluated in the FRMND, there is not an Alquist-Priolo Earthquake Fault Zone on or near any of the proposed monitoring well sites. Comparable to the geologic condition described and evaluated in the FRMND, it would be unlikely the proposed monitoring wells would be subject to ground rupture impacts. No mitigation measures are required.
A2. Would the project expose people or structures to potential substantial adverse effects, including the risk of loss, injury or death involving strong seismic ground shaking?

Less than Significant Impact with Mitigation: Comparable to the geologic conditions described and evaluated in the FRMND, the proposed monitoring well sites are located in a seismically active area that could be subject to seismic shaking impacts from several surrounding active earthquake faults in the region. The highest seismic risks to the proposed well sites would be from the Newport-Inglewood Fault Zone and the Whittier-Elsinore Fault Zone. Each of these faults would have the potential to cause moderate to large earthquakes in excess of 7.0 on the Richter Scale. In the event a moderate to large earthquake occurs, the proposed monitoring wells could have the potential for periodic shaking, possibly of considerable intensity. The risk for seismic shaking impacts at all of the proposed monitoring well sites would be similar to other areas in the southern California region. The Proposed Project would be designed to meet the California Department of Water Resources Well Standards to withstand potential seismic shaking impacts caused by an earthquake within an acceptable level of risk. Consistent with the evaluation in the FRMND, with the implementation of Mitigation Measure GEO-1 the potential risk of seismic shaking impacts would be less than significant.

Mitigation Measure

GEO-1: The OCWD will ensure that proposed monitoring well is designed and constructed in compliance with California Department of Water Resources Well Standards Bulletin 74-90 and Bulletin 74-81.

A3. Would the project expose people or structures to potential substantial adverse effects, including the risk of loss, injury or death involving liquefaction?

Less than Significant Impact with Mitigation: Comparable to the geologic conditions described and evaluated in the FRMND, the proposed monitoring well sites are within a liquefaction hazard area. To minimize liquefaction risks, the proposed monitoring wells would be designed to meet the California Department of Water Resources Well Standards to withstand potential seismic shaking impacts caused by an earthquake within an acceptable level of risk. Consistent with the evaluation in the FRMND, with the implementation of Mitigation Measure GEO-1 the potential risk for liquefaction of seismic shaking impacts would be less than significant.

Mitigation Measures

Mitigation Measure GEO-1 is required.

A4. Would the project expose people or structures to potential substantial adverse effects, including the risk of loss, injury or death involving landslides?
No Impact: Comparable to the geologic conditions described and evaluated in the FRMND, the proposed monitoring well sites are not located in areas that would be subject to landslide risks. No mitigation measures are required.

B. Would the project result in substantial soil erosion or the loss of topsoil?

Less than Significant Impact: Comparable to the geologic conditions described and evaluated in the FRMND, the drilling operations associated with the construction of the proposed monitoring wells would occur on paved roadway surfaces. No substantial amount soils would be exposed that could be subject to water and/or wind erosion impacts. No mitigation measures are required.

C. Would the project be located on a geologic unit or soil that is unstable or that would become unstable as a result of the project and potentially result in on or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?

Less than Significant Impact with Mitigation: Comparable to the geologic conditions described and evaluated in the FRMND, the primary geologic concerns at the proposed monitoring well sites would be potential seismic shaking impacts and liquefaction impacts. The proposed monitoring wells would be designed to meet the California Department of Water Resources Well Standards to withstand potential seismic shaking impacts and liquefaction impacts caused by an earthquake within an acceptable level of risk. Consistent with the evaluation in the FRMND, with the implementation of Mitigation Measure GEO-1 the potential risk of seismic shaking impacts and liquefaction impacts would be less than significant.

Mitigation Measures

Mitigation Measure GEO-1 is required.

D. Would the project be located on expansive soil, as defined in Table 18-1-B of the uniform Building Code, creating substantial risks to life or property?

Less than Significant Impact with Mitigation: Comparable to the geologic conditions described and evaluated in the FRMND, preliminary investigations conducted by OCWD did not identify any soil constraints within the study area, including the areas where the three monitoring wells would be relocated. The proposed monitoring wells would be designed to meet the California Department of Water Resources Well Standards. Consistent with the evaluation in the FRMND, with the implementation of Mitigation Measure GEO-1 potential soil constraint impacts would be less than significant.

Mitigation Measures

Mitigation Measure GEO-1 is required.

E. Would the project have soils incapable of adequately supporting the use of septic tanks or alternative waste disposal systems where sewers are not available for the disposal of wastewater?
No Impact: Comparable to the geologic conditions described and evaluated in the FRMND, the construction of the proposed monitoring wells would not involve construction of septic tanks, or other alternative wastewater disposal systems. No mitigation measures are required.

Comparable Level of Impact

Potential geologic and soil impacts associated with the relocation of Monitoring Well Sites SAM-8, SAM-9 and SAM-13 would be less than significant and would result in the same level of geologic and soil impacts identified in FRMND. With the implementation of Mitigation Measure GEO-1 the construction and operation of Monitoring Well Sites SAM-8, SAM-9 and SAM-13 would not cause any new, substantially increase or result in more severe geologic or soil impacts compared to the level of geologic and soil impacts identified in the FRMND.

4.7 Greenhouse Gas Emissions

A. Would the project generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?

Less than Significant Impact: The mix of construction equipment for Monitoring Well Sites SAM-8, SAM-9 and SAM-13 would be the same construction mix that was evaluated in the FRMND. As shown in Table 9 consistent with the greenhouse gas emission evaluation in the FRMND, the greenhouse gas emissions generated from the construction of the Proposed Project would be less than the SCAQMD-adopted interim threshold of 10,000 MTCO2e for industrial projects and would result in less than significant impacts.

Table 9: Estimated Construction Greenhouse House Gas Emissions

<table>
<thead>
<tr>
<th>Activity</th>
<th>Total Emissions (MTCO2e)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase 1: Drilling and Construction of Wells</td>
<td>18</td>
</tr>
<tr>
<td>Phase 2: Well Development</td>
<td>33</td>
</tr>
<tr>
<td>Total Construction Emissions</td>
<td>51</td>
</tr>
<tr>
<td>SCAQMN CEQA Threshold</td>
<td>10,000</td>
</tr>
<tr>
<td>Exceeds Threshold</td>
<td>No</td>
</tr>
</tbody>
</table>

MTCO2e=metric tons of carbon dioxide equivalent

Operational Emissions

The estimated annual operational GHG emissions for the Proposed Project are shown in Table 10. As shown in Table 10, consistent with the greenhouse gas emission evaluation in the FRMND, the annual Proposed Project operational GHG emissions would be substantially less than the CEQA thresholds. No mitigation measures are required.
Table 10: Estimated Operational Greenhouse House Gas Emissions

<table>
<thead>
<tr>
<th>Activity</th>
<th>Total Emissions (MTCO2e)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Well Redevelopment</td>
<td>3</td>
</tr>
<tr>
<td>Well Sampling</td>
<td>16</td>
</tr>
<tr>
<td>Total Construction Emissions</td>
<td>19</td>
</tr>
<tr>
<td>SCAQMD CEQA Threshold</td>
<td>10,000</td>
</tr>
<tr>
<td>Exceeds Threshold</td>
<td>No</td>
</tr>
</tbody>
</table>

MTCO2e = metric tons of carbon dioxide equivalent

Would the project be in conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

**No Impact:** The SCAG 2012-2035 RTP/SCS and Draft 2016-2040 RTP/SCS focus on reducing GHG emissions through improved transportation and land use policies. Consistent with the greenhouse gas emission evaluation in the FRMND, the Proposed Project would not impede the implementation of these RTP/SCS policies. No mitigation measures are required.

**Greenhouse Gas Level of Impact**

Potential greenhouse gas emission impacts associated with the relocation of Monitoring Well Sites SAM-8, SAM-9 and SAM-13 would be less than significant and would result in the same level of impacts identified in the FRMND. Therefore, the construction and operation of Monitoring Well Sites SAM-8, SAM-9 and SAM-13 would not cause any new, substantially increase or result in more severe greenhouse gas emission impacts compared to the level of greenhouse gas emission impacts identified in the FRMND.

**4.8 Hazards/Hazardous Materials**

A. **Would the project create a significant hazard to the public or the environment through the routine transport, use or disposal of hazardous materials?**

**Less than Significant Impact:** Comparable to the evaluation in the FRMND, the long-term operation of the proposed monitoring wells would not involve the routine transportation, disposal or emission of hazardous materials or waste. Construction operations associated with the proposed monitoring wells would involve the handling of incidental amounts of hazardous materials, such as fuels, and oils. The construction and operation of the proposed monitoring wells would be required to comply with local, state and federal laws and regulations regarding the handling and storage of hazardous materials. Additionally, during construction operations Best Management Practices would be implemented that would include hazardous material spill prevention and management practices. Consistent with the evaluation in the FRMND, compliance with local, State and Federal laws and regulations in-conjunction with implementation of Best Management Practices would reduce potential hazardous material safety impacts to a less than significant level. No mitigation measures are required.
B. Would the project create a significant hazard to the public or environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

**Less than Significant Impact:** Comparable to the conditions described and evaluated in the FRMND, the operation of the Proposed Project would not have the potential to release hazardous materials into the environment. As indicated previously, construction operations associated with the proposed monitoring wells would involve the handling of incidental amounts of hazardous materials, such as fuels and oils. Consistent with the evaluation in the FRMND, compliance with local, State and Federal laws and regulations in-conjunction with implementation of Best Management Practices would reduce potential hazardous material safety impacts to a less than significant level. No mitigation measures are required.

C. Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substance or waste within one-quarter mile of an existing or proposed school.

**No Impact:** Consistent with the evaluation in the FRMND, the long-term operation of the Proposed Project would not emit hazardous emissions, or involve the handling of acutely hazardous substances within ½ mile of a school. No mitigation measures are required.

D. Would the project be located on a site which is included on a list of hazardous material sites compiled pursuant to Government Code Section 65962.5 and as a result, would create significant hazard to the public or the environment?

**No Impact:** The purpose of the Proposed Project is to evaluate the extent and nature of groundwater contamination within the South Basin area of the Orange County Groundwater Basin to help develop remedial action plan that would remove contaminates from the groundwater basin. The evaluation would provide information for the remediation of groundwater contamination and the protection of the public and the environment, rather than create any hazard to the public or the environment. No mitigation measures are required.

E. For a project located within an airport land use plan or where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project the result in a safety hazard for people residing or working within the project area?

**Less than Significant Impact:** The closest airport to the proposed monitoring well sites would be John Wayne Airport. According to the John Wayne Airport AELUP monitoring well site SAM-13 is outside of the Safety Hazard Zone and monitoring well sites SAM-8 and SAM-9 are located in Safety Zone 6, which is an area generally with low likelihood of accident occurrence. The proposed monitoring wells would be underground and
would not encroach into any navigable air space and would be a compatible utility. Consistent with the evaluation in the FRMND, the construction and operation of the proposed monitoring wells would not result in any airport safety related hazards. No mitigation measures are required.

**F. For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?**

**No Impact:** Comparable to the conditions described and evaluated in the FRMND, there is not private air strips located within the study area. Therefore, the study area would not be subject to aircraft safety hazards. No mitigation measures required.

**G. Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?**

**Less than Significant Impact with Mitigation:** Comparable to the conditions described and evaluated in the FRMND, the construction and operation of the proposed monitoring wells would be located under existing roadways. The construction operations would require temporary lane closures. During construction at least one traffic lane would be open to allow through traffic. As needed traffic control devices would be in place to direct traffic through the construction area. Consistent with the evaluation in the FRMND, with the implementation of Mitigation Measure T-2 potential emergency access impacts would be less than significant.

**Mitigation Measures**

**T-2:** Prior to mobilization and demobilization of construction equipment, OCWD will coordinate with City of Irvine on the need for temporary traffic control measures.

**H. Would the project expose people or structures to a significant risk of loss, injury or death involving wild land fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wild lands?**

**No Impact:** Comparable to the conditions described and evaluated in the FRMND, the proposed monitoring well sites are not adjacent to or intermixed with wild lands and would not be susceptible wild land fire impacts. No mitigation measures are required.

**Comparable Level of Impact**

Potential hazard impacts associated with the relocation of Monitoring Well Sites SAM-8, SAM-9 and SAM-13 would be less than significant and would result in the same level of hazard impacts identified in the FRMND. With the implementation of Mitigation Measure T-2 the construction and operation of Monitoring Well Sites SAM-8, SAM-9 and SAM-13 would not cause any new, substantially increase or result in more severe hazard impacts compared to the level of hazard impacts identified in the FRMND.
4.9 Hydrology/Water Quality

The proposed well sites are located within the Santa Ana River Watershed. Comparable to the conditions described and evaluated in the FRMND, the primary receiving surface water bodies within the study area would include; Lane Channel, Barranca Channel, San Diego Creek and Upper Newport Back Bay. The well sites also over lie the Orange County Groundwater Basin.

Lane Channel

Lane Channel is a tributary drainage channel for Monitoring SAM-8 and SAM-9. At the upstream segment, Lane Channel is an earthen trapezoidal channel that runs parallel to the westerly side of the SR-55 Freeway. After crossing underneath the freeway the channel transitions into a double reinforced concrete box extending along MacArthur Boulevard, I-405 Freeway to its confluence with San Diego Creek before emptying into Upper Newport Bay.

Barranca Channel

Barranca Channel is a tributary drainage channel for Monitoring Well SAM-13. The channel ultimately drains into Upper Newport Back Bay. Barranca Channel extends along Red Hill Avenue and Barranca Parkway before its confluence with San Diego Creek. Along this segment the channel is configured as a concrete lined box. At its confluence with San Diego Creek, the channel transitions into open channel with rip rap side slopes, before emptying into Upper Newport Bay.

San Diego Creek

San Diego Creek is a tributary drainage facility for SAM-8, SAM-9 and SAM-13 and ultimately drains into Upper Newport Bay. The San Diego Creek headwaters are in the San Joaquin Hills. The creek flows northwest, after crossing under I-405, the creek becomes channelized and flows northeasterly through east Irvine for approximately 10 miles and then extends southwesterly crossing underneath the I-405 for second time. After extending from the freeway the creek flows into the San Joaquin Marsh and then into Upper Newport Bay.

Section 303 (d) Water Bodies

Under Section 303 (d) of the Clean Water Act, the State Water Resources Control Board (SWRCB) is required to develop a list of impaired water bodies. Each of the individual Regional Water Quality Control Boards are responsible for establishing priority rankings and developing action plans, referred to as total maximum daily loads (TMDLs) to improve water quality of water bodies included in the 303(d) list. A list of the project area receiving water bodies that have been listed as 303 (d) impaired water body is shown in Table 11.
Table 11: 303 (D) Listed Impaired Water Bodies

<table>
<thead>
<tr>
<th>Water Body</th>
<th>Impairment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delhi Channel</td>
<td>Indicator Bacteria</td>
</tr>
<tr>
<td>San Diego Creek</td>
<td>Fecal Coliform, Nutrients, Pesticides, Sediment, Selenium, Toxaphene</td>
</tr>
<tr>
<td>Upper Newport Bay</td>
<td>Chordane, Copper, DDT, indicator Bacteria, Metals, Nutrients, PCB, Pesticides, Sediment Toxicity and Sediment.</td>
</tr>
</tbody>
</table>

**Santa Ana River Basin Plan Beneficial Uses**

The Santa Ana River Basin (Basin Plan) designates beneficial uses for waters in the Santa Ana River Watershed and provides quantitative and narrative criteria for a range of water quality constituents applicable to certain receiving water bodies in order to protect these beneficial uses. As shown in Table 12, the Basin Plan identifies beneficial uses for San Diego Creek, Upper Newport Bay and the Orange County Groundwater Water Basin.

Table 12: Study Area Water Body Beneficial Uses

<table>
<thead>
<tr>
<th>Beneficial Use</th>
<th>San Diego Creek</th>
<th>Upper Newport Bay</th>
<th>Orange County Groundwater Basin</th>
</tr>
</thead>
<tbody>
<tr>
<td>Municipal</td>
<td>NL</td>
<td>NL</td>
<td>X</td>
</tr>
<tr>
<td>Agriculture</td>
<td>NL</td>
<td>NL</td>
<td>X</td>
</tr>
<tr>
<td>Industrial</td>
<td>NL</td>
<td>NL</td>
<td>X</td>
</tr>
<tr>
<td>Industrial Processes</td>
<td>NL</td>
<td>NL</td>
<td>X</td>
</tr>
<tr>
<td>Recreation 1</td>
<td>X</td>
<td>X</td>
<td>NL</td>
</tr>
<tr>
<td>Recreation 2</td>
<td>X</td>
<td>X</td>
<td>NL</td>
</tr>
<tr>
<td>Commercial</td>
<td>NL</td>
<td>X</td>
<td>NL</td>
</tr>
<tr>
<td>Biological Habitats</td>
<td>NL</td>
<td>X</td>
<td>NL</td>
</tr>
<tr>
<td>Warm Waters</td>
<td>X</td>
<td>NL</td>
<td>NL</td>
</tr>
<tr>
<td>Wild Waters</td>
<td>X</td>
<td>X</td>
<td>NL</td>
</tr>
<tr>
<td>Rare Waters</td>
<td>NL</td>
<td>X</td>
<td>NL</td>
</tr>
<tr>
<td>SPAWN</td>
<td>NL</td>
<td>X</td>
<td>NL</td>
</tr>
<tr>
<td>MAR</td>
<td>NL</td>
<td>X</td>
<td>NL</td>
</tr>
<tr>
<td>SHEL</td>
<td>NL</td>
<td>X</td>
<td>NL</td>
</tr>
<tr>
<td>EST</td>
<td>NL</td>
<td>X</td>
<td>NL</td>
</tr>
</tbody>
</table>

**Water Quality Objectives**

The RWQCB establishes water quality objectives in the Basin Plan to ensure the protection of beneficial uses. The water quality objectives for San Diego Creek, Upper Newport Bay and the Orange County Groundwater Water Basin are shown in Table 13.

Table 13: Water Quality Objectives

<table>
<thead>
<tr>
<th>Reach</th>
<th>TDS</th>
<th>HARD</th>
<th>Na</th>
<th>Cl</th>
<th>TIN</th>
<th>SO4</th>
<th>COD</th>
</tr>
</thead>
<tbody>
<tr>
<td>San Diego Creek</td>
<td>1500</td>
<td>NL</td>
<td>NL</td>
<td>NL</td>
<td>NL</td>
<td>NL</td>
<td>NL</td>
</tr>
<tr>
<td>Upper Newport Bay</td>
<td>600</td>
<td>NL</td>
<td>NL</td>
<td>NL</td>
<td>NL</td>
<td>NL</td>
<td>NL</td>
</tr>
<tr>
<td>Orange County Groundwater Basin</td>
<td>580</td>
<td>NL</td>
<td>NL</td>
<td>NL</td>
<td>3.4</td>
<td>NL</td>
<td>NL</td>
</tr>
</tbody>
</table>

*NL- Not Listed, (1) Five year moving Average Concentrations in Units of Milligrams Per Liter TDS= Total Dissolved Solids, HARD=Hardness, Na= Sodium, TIN= Total Inorganic Nitrogen, Cl=Chloride, SO4=Sulfate, COD=Chemical Oxygen Demand*
Project Impacts

A. Would the project violate Regional Water Quality Control Board Water Quality standards or waste discharge standards?

Less than Significant with Mitigation: As shown in Table 12 and Table 13, the Basin Plan identifies Beneficial Uses and Water Quality Objectives for San Diego Creek, Upper Newport Bay and the Orange County Groundwater Basin. Additionally, as shown in Table 11, San Diego Creek and Upper Newport Bay have been identified as 303 (d) Impaired Water Bodies. The following analysis evaluates if the Proposed Project would conflict with beneficial uses, and water quality objectives established in the Santa Ana Region Basin Plan and if the Proposed Project would further impair any listed 303 (d) Impaired Water Body.

Beneficial Uses

San Diego Creek, Upper Newport Bay

All of the proposed monitoring wells would eventually drain into San Diego Creek and Upper Newport Bay. Comparable to the water quality conditions described and evaluated in the FRMND, during well construction there would be the potential that degraded surface water runoff could flow into local storm drain systems and be conveyed into San Diego Creek and Upper Newport Bay. Depending on the constituents in the surface water, the water quality for beneficial uses could be reduced. During construction and operation of the Proposed Project, Best Management Practices would be implemented to minimize degraded surface water runoff impacts. Consistent with the evaluation in the FRMND, with the implementation of Mitigation Measure HWQ-1 potential construction related storm water impacts would be less than significant.

The long term operation of the monitoring wells would periodically involve water sampling and maintenance activities. During water quality sampling and maintenance activities the monitoring wells would have to be pumped. Comparable to the water quality conditions described and evaluated in the FRMND, there would be the potential that the effluent could contain constituents that could reduce the water quality for beneficial uses. To avoid potential beneficial use conflicts, the groundwater effluent generated during sampling and maintenance activities would be placed in a container and disposed offsite at an appropriate facility. Consistent with the evaluation in the FRMND, with the implementation of Mitigation Measure HWQ-2 potential conflicts with beneficial uses would be avoided.

Orange County Groundwater Basin

Comparable to the water quality conditions described and evaluated in the FRMND, the purpose of the Proposed Project is to evaluate the extent and nature of groundwater contamination within the South Basin area of the Orange County Groundwater Basin to help develop a remedial action plan to alleviate the contamination from the groundwater
basin to allow the groundwater to be used for beneficial uses identified in the Basin Plan.

**Water Quality Objectives**

**San Diego Creek, Upper Newport Bay**

The Santa Ana Region Basin Plan identifies numerical water quality objectives for total dissolved solids (TDS) for San Diego Creek and Upper Newport Bay. Comparable to the water quality conditions described and evaluated in the FRMND, the construction activities for the Proposed Project would have the potential to result in localized erosion, sediment transport and degraded surface water runoff impacts that could be discharged into San Diego Creek and Upper Newport Bay. The construction-related storm water runoff could contain elevated levels of TDS. During construction the Proposed Project would implement Best Management Practices to maintain water quality. These measures would include; minimizing water and wind erosion, establishing and implementing construction equipment delivery and storage procedures, vehicle and equipment maintenance procedures, stockpiling site requirements and solid waste management procedures. Consistent with the evaluation in the FRMND, with the implementation of Mitigation Measure HWQ-1 potential construction related storm water impacts would be less than significant.

As indicated previously, the long term operation would periodically involve the discharging of well water. To avoid potential beneficial use conflicts, the groundwater effluent generated during sampling and maintenance activities would be placed in a container and disposed offsite in an appropriate facility. Consistent with the evaluation in the FRMND, with the implementation of Mitigation Measure HWQ-1 and HWQ-2 potential conflicts with beneficial uses would be avoided.

**Orange County Groundwater Basin**

Comparable to the water quality conditions described and evaluated in the FRMND, the Basin Plan establishes water quality objective of 580 mg/L for TDS for the Orange County Groundwater Basin. The construction and operation of the proposed monitoring wells would not introduce elevated levels of TDS into the groundwater basin that would exceed established water quality objectives. Consistent with the evaluation in the FRMND, the Proposed Project would not be in conflict with water quality objectives established for the Orange County Groundwater Basin. No mitigation measures are required.

**Section 303 (d) Impaired Water Bodies**

The RWQCB lists Upper Newport Bay and San Diego Creek has 303 (d) impaired water bodies.
San Diego Creek
The drainage area for Monitoring Wells SAM-8, SAM-9, and SAM-13 would include San Diego Creek. Comparable to the water quality conditions described and evaluated in the FRMND, San Diego Creek has been listed as an impaired water body for fecal coliform, nutrients, pesticides, sediment, selenium, and toxaphene. It would very unlikely that the construction of the monitoring wells would introduce elevated levels of fecal coliform, nutrients, pesticides, selenium, or toxaphene into San Diego Creek. During construction of the monitoring wells, Best Management Practices would be implemented to control sediment. During the operation of the monitoring wells effluent generated from water sampling and maintenance activities would be placed in a container and disposed of offsite. Consistent with the evaluation in the FRMND, with the implementation of Mitigation Measure HWQ-1 and HWQ-2 potential adverse water quality impacts to San Diego Creek would be less than significant.

Upper Newport Bay
All of the proposed monitoring wells would eventually drain into Upper Newport Bay. Comparable to the water quality conditions described and evaluated in the FRMND, Upper Newport Bay has been listed as an impaired water body for chlordane, copper, DDT, indicator bacteria, metals, nutrients, PCBs, pesticides, sediment toxicity and sediment. It would very unlikely that the construction of the monitoring wells would introduce elevated levels of chlordane, copper, DDT, indicator bacteria, metals, nutrients, PCBs, and pesticides. During construction of the monitoring wells Best Management Practices would be implemented to control sediment. During the operation of the monitoring wells effluent generated from water sampling and maintenance activities would be placed in a container and disposed of offsite. Consistent with the evaluation in the FRMND, with the implementation of Mitigation Measure HWQ-1 and HWQ-2 potential adverse water quality impacts to Upper Newport Bay would be less than significant.

Mitigation Measures

HWQ-1: During construction operations Best Management Practices will be used to minimize surface water runoff impacts. Such measures could include; sandbagging, manufactured swales, diversion velocity dissipaters, desilting basins, and detention/retention ponds.

HWQ-2: Groundwater effluent generated during sampling and maintenance activities will be containerized and transported offsite to an appropriate disposal facility.

B. Would the project substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level?
No Impact: The purpose of the Proposed Project is to evaluate the extent and nature of groundwater contamination within the South Basin area of the Orange County Groundwater Basin to help develop remedial action plan that would remove contaminants from the groundwater basin. Consistent with the evaluation in the FRMND, the implementation of the Proposed Project would help to increase ground water supplies for the OCWD service area, which includes the City of Irvine. No mitigation measures required.

C. Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on or off site?

Less than Significant Impact with Mitigation: Comparable to the water quality conditions described and evaluated in the FRMND, all construction activities would be confined to the well site and would not alter any existing drainage patterns. The drilling operations associated with the construction of the proposed monitoring wells would occur on paved roadway surfaces. No substantial amounts of soils would be exposed that could be subject to water and/or wind erosion. During construction operations Best Management Practices would be implemented to minimize the potential for surface runoff to convey sediment to local drainage systems. Consistent with the evaluation in the FRMND, with the implementation of Mitigation Measure HWQ-1 potential siltation impacts would be less than significant.

Mitigation Measure

Mitigation Measure HWQ-1 required.

D. Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or off site?

Less than Significant Impact: Comparable to the water quality conditions described and evaluated in the FRMND, the construction of the proposed monitoring wells would occur on existing roadways and would not increase the amount of impervious surfaces. Consistent with the evaluation in the FRMND, existing rates of surface water runoff and flood risks would not increase over the current condition. No mitigation measures are required.

E. Would the project create or contribute runoff which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?

Construction Storm Water Runoff
Less than Significant Impact with Mitigation: Comparable to the water quality conditions described and evaluated in the FRMND, onsite construction activities associated with the Proposed Project could generate degraded surface water runoff from the project site into local drainage facilities. To prevent degraded storm water runoff pollutants from entering into existing drainage systems, Best Management Practices would be implemented during construction operations to control the surface water runoff and to minimize the potential for it to be conveyed into onsite or offsite drainage systems. Consistent with the evaluation in the FRMND, with the implementation of Mitigation Measure HWQ-1 potential degraded surface water runoff impacts would be reduced to a less than significant level.

Long Term Surface Water Management

Less than Significant Impact with Mitigation: Comparable to the water quality conditions described and evaluated in the FRMND, proposed Monitoring Wells SAM-8, SAM-9, and SAM-13 are located within the City of Irvine and would be required to comply with the County of Orange 4th term Municipal NPDES Permit, as implemented by the City of Irvine. At each well site a maximum of 800 square feet of existing roadways surfaces would be replaced. The amount of replacement impervious surfaces would not meet the criteria for a Priority Project under the County of Orange 4th term Municipal NPDES Permit. Because the project would not involve any discretionary actions from the City of Irvine, the Project would not require preparation of Non-Priority Project Water Quality Plan. Consistent with the evaluation in the FRMND, long term surface water runoff impacts would be less than significant. No mitigation measures are required.

Mitigation Measure

Mitigation Measure HWQ-1 required.

F. Would the project otherwise degrade water quality?

Less than Significant Impact with Mitigation: The purpose of the Proposed Project is to evaluate the extent and nature of groundwater contamination within the South Basin area of the Orange County Groundwater Basin to help develop remedial action plan that would remove contaminates from the groundwater basin. Consistent with the evaluation in the FRMND, with the implementation of Mitigation Measures HWQ-1 and HWQ-2 potential water quality impacts would be less than significant.

G. Would the project place housing within a 100-year floodplain, as mapped on a federal Flood Hazard Boundary or Flood insurance Rate map or other flood hazard delineation map?

No Impact: Comparable to the flood conditions described and evaluated in the FRMND, the proposed well sites are not within a 100-year floodplain. No mitigation measures are required.
H. Would the project place within a 100-year floodplain structures which impede or redirect flows?

**No Impact:** Comparable to the flood conditions described and evaluated in the FRMND, the proposed well sites are not within a 100-year floodplain. Additionally, the proposed monitoring wells would be constructed at grade and would not redirect or impede any surface water flows. No mitigation measures are required.

I. Would the project expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?

**No Impact:** Comparable to the flood conditions described and evaluated in the FRMND, the Proposed Project involves the construction of below ground monitoring wells and would not expose people or structures to flood risks. No mitigation measures are required.

J. Could the project site be inundated by seiche, tsunami, or mudflow?

**No Impact:** Comparable to the flood conditions described and evaluated in the FRMND, the proposed well sites would not be located within a tsunami run up area and would not be within the vicinity of any impounded water that could be subject to potential seiche impacts. Additionally, there are no slopes within the vicinity of the well sites that would pose mudflow risks. No mitigation measures are required.

**Comparable Level of Impact**

Potential hydrology and water quality impacts associated with the relocation of Monitoring Well Sites SAM-8, SAM-9 and SAM-13 would be less than significant and would result in the same level of hydrogeology and water quality impacts identified in FRMND. With the implementation of Mitigation Measure HWQ-1 and HWQ-2 the construction and operation of Monitoring Well Sites SAM-8, SAM-9 and SAM-13 would not cause any new, substantially increase or result in more hydrology and water quality impacts compared to the level of hydrology and water quality impacts identified in the FRMND.

4.10 Land Use/Planning

A. Would the project physically divide an established community?

**Less than Significant Impact:** Comparable to the land use conditions described and evaluated in the FRMND, the proposed monitoring wells would be constructed and operated on public property within the City of Irvine. OCWD has coordinated with the City of Irvine on the proposed relocated well sites and consistent with the evaluation in the FRMND, have determined that the long term operation of the monitoring wells would not result in adverse land use compatibility impacts.
B. Would the project be in conflict with any applicable land use plan, policy or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect?

No Impact: The City of Irvine Municipal Code in Title 6, Division 4, Chapter 2, and Article B identifies the permitting requirements for water wells proposed in the City of Irvine. The Municipal Code requires coordination with the County of Orange Health Care Agency and compliance with State Department of Water Resources well siting requirements. Consistent with the evaluation in the FRMND, coordination with the County of Orange Health Care Agency and compliance with State Department of Water Resources well siting requirements would avoid potential land use conflicts. No mitigation measures are required.

C. Would the project be in conflict with any applicable habitat conservation plan or natural community conservation plan?

No Impact: The proposed well sites are not included within an approved habitat conservation plan or natural community conservation plan. No mitigation measures are required.

Comparable Level of Impact

Potential land use impacts associated with the relocation of Monitoring Well Sites SAM-8, SAM-9 and SAM-13 would be less than significant and would result in the same level of land use impacts identified in FRMND. The construction and operation of Monitoring Well Sites SAM-8, SAM-9 and SAM-13 would not cause any new, substantially increase or result in more severe land use impacts compared to the level of land use impacts identified in the FRMND.

4.11 Mineral Resources

A. Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

No Impact: Comparable to the conditions described and evaluated in the FRMND, the proposed well sites are not located in an area that contains mineral resources of regional significance. Consistent with the evaluation in the FRMND, no impacts on regional minerals or minerals of state importance would occur.

B. Would the project result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use?

No Impact: Comparable to the conditions described and evaluated in the FRMND, the proposed well sites are not located in an area that contains mineral resources of local significance. Consistent with the evaluation in the FRMND, no impacts on minerals of local importance would occur.
Comparable Level of Impact

Potential impacts to mineral resources associated with the relocation of Monitoring Well Sites SAM-8, SAM-9 and SAM-13 would be less than significant and would result in the same level of impacts to mineral resources identified in the FRMND. The construction and operation of Monitoring Well Sites SAM-8, SAM-9 and SAM-13 would not cause any new, substantially increase or result in more severe impacts to mineral resources compared to the level of impacts to mineral resources identified in the FRMND.

4.12 Noise

The City of Irvine establishes the following exterior and interior noise standards, exemptions and special provisions for the regulation of noise.

<table>
<thead>
<tr>
<th>Land Use</th>
<th>7:00 a.m. to 10:00 p.m.</th>
<th>10:00 p.m. to 7:00 a.m.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential, Schools, Churches, Hospitals, Libraries</td>
<td>55 dBA</td>
<td>50 dBA</td>
</tr>
<tr>
<td>Professional Office</td>
<td>55 dBA</td>
<td>55 dBA</td>
</tr>
<tr>
<td>Commercial</td>
<td>60 dBA</td>
<td>60 dBA</td>
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Exemptions to Noise Ordinance Standards

The City of Irvine Noise Ordinance identifies several activities that would be exempted from City’s exterior and interior noise standards. The following applicable activities would be exempted from the above noise standards.

- Construction activities that occur between the hours of 7:00 a.m.—7:00 p.m., Monday through Friday, and 9:00 a.m.—6:00 p.m. on Saturdays are exempt from noise restrictions. No construction activities shall be permitted outside of these hours or on Sundays and federal holidays unless a temporary waiver is granted by the Chief Building Official.
• Maintenance of real property operations may exceed the noise standards between 7:00 a.m. and 7:00 p.m. on any day except Sundays, or between 9:00 a.m. and 6:00 p.m. on Sundays or a federal holiday.

Project Impacts

A. Would the project expose persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

This impact discussion analyzes the potential for project construction noise and operational noise to cause an exposure of persons to or generation of noise levels in excess of City of Irvine noise standards. The noise levels in the study area would be influenced by well construction activities and from on-going well maintenance activities.

Less than Significant Impact: Comparable to the conditions described and evaluated in the FRMND, the proposed monitoring wells in the City of Irvine would be located in areas that contain industrial and professional office land uses. The construction and maintenance activities occurring at Monitoring Wells SAM-8, SAM-9, and SAM-13 would occur during the day when construction activities would be exempted from the City of Irvine Noise Ordinance. Consistent with the evaluation in the FRMND, potential noise impacts would be less than significant. No mitigation measures are required.

B. Would the project result in a permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

Less than Significant Impact: Comparable to the conditions described and evaluated in the FRMND, the proposed monitoring wells would be underground and would be passive in operation and would not emit noise impacts. Consistent with the evaluation in the FRMND, potential long term noise impacts would be less than significant. No mitigation measures are required.

C. Would the project result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

Less than Significant Impact: The construction operations associated with the proposed monitoring wells would temporarily increase ambient noise levels within the study area. Comparable to the conditions described and evaluated in the FRMND, all of the construction activity would occur during day when the construction noise would be exempt under the City of Irvine Noise Ordinance. Consistent with the evaluation in the FRMND, potential temporary noise impacts would be less than significant. No mitigation measures are required.
D. For a project located within an airport land use plan or where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

**Less than Significant:** The closest airport to the proposed monitoring wells would be John Wayne Airport. Comparable to the conditions described and evaluated in the FRMND, all of the proposed monitoring wells are located within the John Wayne Airport Noise Impact Zone and would be subject to elevated noise levels. The Proposed Project does not involve the construction of any noise sensitive land uses that would be adversely impacted by the elevated noise levels. Consistent with the evaluation in the FRMND, potential aircraft noise impacts would be less than significant. No mitigation measures are required.

E. For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

**No Impact:** Comparable to the conditions described and evaluated in the FRMND, there is not a private air strip located within the study area. Therefore, the study area would not be adversely impacted by aircraft noise from a private air strip.

F. Would the project cause exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels?

**Less than Significant Impact:** Presently there is not an adopted State of local standard to measure excessive groundborne vibration impacts. A relevant guideline to measure potential vibration Caltrans would be Caltran’s *Transportation- and Construction-Induced Vibration Guidance Manual* in 2004. The manual provides practical guidance to Caltrans engineers, planners, and consultants who must address vibration issues associated with the construction, operation, and maintenance of Caltrans projects. This manual is also used as a reference point by many lead agencies and CEQA practitioners throughout California, as it provides numeric thresholds for vibration impacts. Thresholds are established for continuous and transient sources of vibration, which have found that the human response becomes distinctly perceptible at 0.25 inch per second PPV. The manual also found that damage to new residential structures occurs at 1.0 inch per second PPV and damage to industrial and commercial buildings occur at 2.0 inch per second.

The monitoring wells would be housed in underground vaults and there would be no vibration impacts associated with the operation of the monitoring wells. Therefore, there would be no long term vibration impacts. The construction activities, water sampling activities and maintenance activities associated with each well are considered a transient source for vibration impacts. Of the equipment listed required for the project, a drill rig, would be the piece of equipment that would have the highest vibration level at
0.089 inch per second PPV at 25 feet. The closest well site to a structure would be SAM-8 at 50 feet. At this distance the PPV would be .178. The vibration level would be below human perception threshold of 0.25 PPV and the 2.0 PPV threshold for potential damage to industrial and commercial buildings. Because all of the other well sites are further than 50-feet to the closest structure the vibration levels would be lower. Consistent with the evaluation in the FRMND, potential vibration impacts would be less than significant. No mitigation measures are required.

**Comparable Level of Impact**

Potential noise and vibration impacts associated with the relocation of Monitoring Well Sites SAM-8, SAM-9 and SAM-13 would be less than significant and would result in the same level of noise and vibration impacts identified in the FRMND. The construction and operation of Monitoring Well Sites SAM-8, SAM-9 and SAM-13 would not cause any new, substantially increase or result in more severe noise and vibration impacts compared to the level of noise and vibration impacts identified in the FRMND.

**4.13 Population/Housing**

A. Would the project induce substantial population growth in an area, either directly or indirectly?

**No Impact:** Comparable to the conditions described and evaluated in the FRMND, the Proposed Project would not extend new infrastructure into any undeveloped area, and would not provide underground water supplies to any undeveloped areas. Consistent with the evaluation in the FRMND, implementation of the Proposed Project would not induce any substantial population growth into the study area. No mitigation measures are required.

B. Would the project displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

**No Impact:** Comparable to the conditions described and evaluated in the FRMND, the implementation of the Proposed Project would not displace any existing housing and therefore would not require the construction of any replacement housing. No mitigation measures are required.

C. Would the project displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

**No Impact:** Comparable to the conditions described and evaluated in the FRMND, the implementation of the Proposed Project would not displace any households and therefore would not require the construction of any replacement housing. No mitigation measures are required.
Comparable Level of Impact

Potential population and housing impacts associated with the relocation of Monitoring Well Sites SAM-8, SAM-9 and SAM-13 would be less than significant and would result in the same level of impacts identified in FRMND. The construction and operation of Monitoring Well Sites SAM-8, SAM-9 and SAM-13 would not cause any new, substantially increase or result in more severe population and housing impacts compared to the level of population and housing noise impacts identified in the FRMND.

4.14 Public Services

A. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for fire protection, police protection, schools, parks or other public facilities.

No Impact: Comparable to the conditions described and evaluated in the FRMND, the Proposed Project would be operated and maintained by OCWD and would not increase the demand for public services over the current level of demand and would not require the construction of any new governmental facilities. No mitigation measures are required.

Comparable Level of Impact

Potential impacts to public services associated with the relocation of Monitoring Well Sites SAM-8, SAM-9 and SAM-13 would be less than significant and would result in the same level of impacts identified in the FRMND. The construction and operation of Monitoring Well Sites SAM-8, SAM-9 and SAM-13 would not cause any new, substantially increase or result in more severe public service impacts compared to the level of impacts to public services identified in the FRMND.

4.15 Recreation

A. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

No Impact. Comparable to the conditions described and evaluated in the FRMND, the implementation Proposed Project would not involve any activities that would increase the use of existing neighborhood parks or recreation facilities. No mitigation measures are required.

B. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.
**No Impact.** Comparable to the conditions described and evaluated in the FRMND, Proposed Project does not propose new recreation facilities or proposes to expand existing recreation facilities. No mitigation measures are required.

**Comparable Level of Impact**

Potential recreation impacts associated with the relocation of Monitoring Well Sites SAM-8, SAM-9 and SAM-13 would be less than significant and would result in the same level of recreation impacts identified in the FRMND. The construction and operation of Monitoring Well Sites SAM-8, SAM-9 and SAM-13 would not cause any new, sustainability increase or result in more severe recreation impacts compared to the level of recreation impacts identified in the FRMND.

**4.16 Transportation/Traffic**

A. Would the project be in conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrians and bicycle paths.

**Less than Significant Impact with Mitigation:** Comparable to the conditions described and evaluated in the FRMND, the construction operations for the monitoring wells would involve the mobilization and demobilization of construction equipment which if occurred during peak traffic periods could result in short-term traffic congestion impacts along some roadway segments and intersections within the study area circulation system. To avoid potential short-term traffic congestion impacts, the mobilization and demobilization activities would occur during non-peak traffic periods.

OCWD periodically would visit each well site and collect water samples. Additionally, every three to five years OCWD would conduct maintenance activities to redevelop the wells. The operation of the Proposed Project would generate a minimal amount of traffic trips and would not reduce the level of service of any project area roadway segment or intersection. To avoid potential short-term traffic congestion impacts, water sampling activities and well redevelopment activities would occur during non-peak traffic periods. Consistent with the evaluation in the FRMND, with the implementation of Mitigation Measure T-1 potential short-term traffic impacts would be less than significant.

**Mitigation Measure**

**T-1:** Construction equipment mobilization and demobilization and water sampling activities and well redevelopment activities will occur outside of peak traffic periods.
B. Would the project be in conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards and travel demand measures, or other standards established by County congestion management agency for designated roads and highways.

**Less than Significant Impact:** The Orange County Transportation Agency is responsible for the implementation of the County Congestion Management Program (CMP). The CMP is designed to reduce traffic congestion and to provide a mechanism for the coordination of land use and transportation decisions. The CMP identifies deficit highway and intersections in the County of Orange Circulation System and identifies planned performance standards. When a project generates more than 100 peak hour traffic trips along a CMP highway or 51 or more vehicle trips through a CMP intersection, the project is required to prepare a traffic impact study to evaluate the impacts on the CMP highway and intersection. If the amount of traffic trips generated by the project does not require the preparation of a traffic impact study, the traffic would be considered to have a de minimis impact on the CMP circulation system.

Comparable to the conditions described and evaluated in the FRMND, there would be the potential that access to the proposed well sites could require travel along CMP highways and intersections. However, the Proposed Project would not generate 100 peak hour trips during construction and operation and would also not generate 51 trips through a CMP intersection. Therefore, consistent with the evaluation in the FRMND, the Proposed Project would not require preparation of a traffic impact study and would have a de minimis impact on the CMP circulation system. No mitigation measures are required.

C. Would the project result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?

**No Impact:** Comparable to the conditions described and evaluated in the FRMND, the closest airport facility to the study area would be John Wayne Airport. The AELUP for the airport indicates that the proposed monitoring well sites are outside of the AELUP Height Restriction Zone. Additionally, the proposed monitoring wells would be underground and would not encroach into any navigable air space and would not cause a change in air traffic patterns that would increase aviation safety risks. No mitigation measures are required.

D. Would the project increase hazards to a design feature or incompatible uses or equipment?

**Less than Significant Impact with Mitigation:** The long term operation of the Proposed Project would generate minimal amount of traffic trips. The construction of the
monitoring wells would require the mobilization and demobilization of construction equipment and the operation of heavy construction equipment within the study area. Based on an as needed basis, traffic control measure such as flagman to direct the equipment into the well sites and to keep pedestrians away from the work area would be employed. Consistent with the evaluation in the FRMND, with the implementation of Mitigation Measure T-2 potential traffic hazards would be reduced to a less than significant level.

**Mitigation Measures**

**T-2:** Prior to mobilization and demobilization of construction equipment, OCWD will coordinate with City of Irvine on the need for temporary traffic control measures.

**E. Would the project result in inadequate emergency access?**

**Less than Significant Impact:** Comparable to the conditions described and evaluated in the FRMND, the construction and operation of the Proposed Project would not require the closure of any streets that would impede emergency access. During construction activities adequate emergency access would be maintained at all times. No mitigation measures are required.

**F. Would the project be in conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities or otherwise decrease the performance or safety of such facilities?**

**Less than Significant Impact with Mitigation:** Comparable to the conditions described and evaluated in the FRMND, the construction and operation of the Proposed Project would not require closure of public transportation, bicycle or pedestrian circulation systems. The mobilization and demobilization of heavy construction equipment and construction activities at the well sites could result in the temporary closure and detouring of pedestrian sidewalks and/or bike lanes near the well site for safety reasons. The closure would be temporary and an alternative pedestrian access would be provided. Consistent with the evaluation in the FRMND, with the implementation of Mitigation Measure T-2 potential conflicts with mass transit, pedestrian and bicycle facilities would be reduced to a less than significant level.

**Mitigation Measure**

Mitigation Measure T-2 required.

**Comparable Level of Impacts**

Potential traffic impacts associated with the relocation of Monitoring Well Sites SAM-8, SAM-9 and SAM-13 would be less than significant and would result in the same level of traffic impacts identified in the FRMND. The construction and operation of Monitoring Well Sites SAM-8, SAM-9 and SAM-13 would not cause any new, substantially increase
or result in more severe traffic impacts compared to the level of traffic impacts identified in the FRMND.

4.17 Tribal Resources

A. Would the project cause a substantial adverse change in the significance of a tribal cultural resource as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with value to a California Native American Tribe and that is listed or eligible for listing in the California Register or Historical Resources, or in a local register of historical resources.

Less than Significant Impact with Mitigation: Section 21080.3.1 of the Public Resources Code requires a Lead Agency to consult with any California Native American tribe that requests consultation for potential impacts to tribal cultural resources. On December 3, 2015 OCWD requested coordination with representatives from the Gabrieleno Band of Mission Indians. The tribal representative indicated that there were not any known Native American sacred lands on the well sites or in the nearby area. The tribal representative indicated that even though each well site appears to have been previously disturbed, there would still be the potential for the discovery of Native American cultural resources and that a Native American monitor should be present during well drilling activities. Additionally, if the well sites contain native vegetation that would be removed or an authorized Tribal representative should visit the project site to document and distinguish native vegetation that is preferred by the Tribe.

The three well sites, SAM-8, SAM-9 and SAM-13 would be relocated approximately 135 to 250 feet from the previously approved locations. The proposed well sites are located within an urbanized area and surrounded by developed land uses. There is no onsite vegetation. Given the level of disturbance to the study area and the fact that there is no indication of Native American cultural resource sensitivity within the study area, the potential for the Proposed Project to encounter Native American cultural resources during construction would be very low and would not warrant onsite monitoring. However, a halt condition has been recommended for any ground-disturbing activities in the event unknown Native American cultural resources are encountered. With the implementation of Mitigation Measure CR-1 and CR-2 potential adverse impacts to unknown Native American cultural resources would be less than significant.

Mitigation Measures

Mitigation Measures CR-1 and CR-2 are required.

B. Would the project cause a substantial adverse change in the significance of a tribal cultural resource as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with value to a California Native American Tribe and that is a
resource determined by the lead agency in its discretion and supported by substantial evidence to be significant and which the lead agency considers the significance of the resource to a California Native American tribe.

**Less than Significant Impact with Mitigation:** Based on coordination with California Native American Heritage Commission and local tribes to the study area, it has been determined that no Native American resources are known to occur within the region. To avoid impacts to unknown cultural resources mitigation measures have been incorporated into the Proposed Project that would require construction activity to cease in the unlikelyhood unknown Native American resources are encountered. With the implementation of Mitigation Measure CR-1 and CR-2 potential impacts Native American resources would be less than significant.

**Mitigation Measures**
Mitigation Measures CR-1 and CR-2 are required.

**Comparable Level of Impacts**
Potential impacts to tribal resources associated with the relocation of Monitoring Well Sites SAM-8, SAM-9 and SAM-13 would be less than significant and would result in the same level of impacts to tribal resources in the FRMND. The construction and operation of Monitoring Well Sites SAM-8, SAM-9 and SAM-13 would not cause any new, substantially increase or result in more severe impacts to tribal resources compared to the level of impacts to tribal resources identified in the FRMND.

**4.18 Utilities/Service Systems**

**A. Would the project exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?**

*No Impact.* Comparable to the conditions described and evaluated in the FRMND, the construction and operation of the Proposed Project would not generate any wastewater flows. Therefore, implementation of the Proposed Project would not exceed any treatment requirements established by the RWQCB. No mitigation measures are required.

**B. Would the project require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?**

*Less than Significant Impact with Mitigation:* The Proposed Project involves the construction of 12 new monitoring wells. As identified in the initial study, mitigation measures have been incorporated into the Proposed Project to reduce potentially significant impacts to the environment to a less than significant level.
C. Would the project require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

**No Impact:** The Proposed Project would not involve construction of new storm water drainage facilities or the expansion of existing storm water drainage facilities. No mitigation measures are required.

D. Are sufficient water supplies available to serve the project from existing entitlements and resources or new or expanded entitlements needed?

**No Impact.** The purpose of the Proposed Project is to evaluate the extent and nature of groundwater contamination within the South Basin area of the Orange County Groundwater Basin to help develop remedial action plan that would remove contaminates from the groundwater basin. The operation of the Proposed Project would not require ongoing water supplies or service. No mitigation measures are required.

E. Would the project result in the determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project’s projected demand in addition to the providers existing commitments.

**No Impact:** The Proposed Project does not include any plans to construct wastewater treatment facilities. Therefore, the implementation of the Proposed Project would not have any impact on the capacity of wastewater treatment providers to the area. No mitigation measures are required.

F. Is the project served by a landfill with sufficient permitted capacity to accommodate the project solid waste disposal need?

**Less than Significant Impact:** Comparable to the conditions described and evaluated in the FRMND, the operation of the Proposed Project would not require ongoing solid waste disposal service. Construction operations for the Proposed Project would generate minimal amounts of solid waste. The solid waste would be disposed of in the Brea Olinda Landfill which accepts up to 8,000 tons per day. The Proposed Project would implement Best Management Practices that would include solid waste management that would recycle appropriate materials. Consistent with the evaluation in the FRMND, the amount of solid waste generate from Proposed Project would have a de minimis impact on the capacity of the Brea Olinda Landfill. No mitigation measures are required.

G. Would the project comply with federal, state and local statutes and regulations related to solid waste?

**Less than Significant Impact:** The Proposed Project would not involve any activities that would be in conflict with federal, state and local statutes and regulations related to
solid waste. Consistent with the evaluation in the FRMND, all waste generated from the construction and operation of the Proposed Project would be disposed of in accordance with local, state and federal laws. No mitigation measures are required.

**Comparable Level of Impacts**

Potential utility and service system impacts associated with the relocation of Monitoring Well Sites SAM-8, SAM-9 and SAM-13 would be less than significant and would result in the same level of utility and service system impacts in the FRMND. The construction and operation of Monitoring Well Sites SAM-8, SAM-9 and SAM-13 would not cause any new, substantially increase or result in more severe utility and service system impacts compared to the level of utility and service system impacts identified in the FRMND.

**Mandatory Findings of Significance**

**A. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?**

**Less than Significant with Mitigation:** Consistent with the evaluation in the FRMND, implementation of the Proposed Project would not result in direct impacts to sensitive plans, wildlife or habitat. The Proposed Project would also not result in any impacts to any known cultural resources and the potential to encounter unknown cultural resources would be very low. Mitigation Measures have been incorporated into the Proposed Project to avoid significant impacts to unknown cultural resources that might be present.

**B. Does the project have impacts that are individually limited but cumulatively considerable?**

**Less than Significant Impact with Mitigation:** Consistent with the evaluation in the FRMND, the Proposed Project would comply with local and regional planning programs, applicable codes and ordinances, State and Federal laws and regulations and project specific mitigation measures. Compliance with these programs would reduce the Proposed Project’s incremental contributions to cumulative impacts to a less than significant level.

**C. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?**

**Less than Significant Impact with Mitigation:** Consistent with the evaluation in the FRMND, the Proposed Project would comply with local and regional planning programs, applicable codes, and ordinances, State and Federal laws and regulations and project
specific mitigation measures to insure that long term operation activities and short term construction activities associated with the proposed project would not result in direct, or indirect adverse impacts to human beings.

**Comparable Level of Impacts**

Mandatory Findings of Significance associated with the relocation of Monitoring Well Sites SAM-8, SAM-9 and SAM-13 would be less than significant with mitigation measures and would result in the same level of Mandatory Findings of Significance impacts in the FRMND. The construction and operation of Monitoring Well Sites SAM-8, SAM-9 and SAM-13 would not cause any new, substantially increase or result in more severe impacts compared to the level of impacts identified in the FRMND.
SECTION 5.0  ADDENDUM DETERMINATION

As the foregoing analysis demonstrates, the construction and operation of a relocated Monitoring Wells SAM-8, SAM-9 and SAM-13 for the South Basin Additional Groundwater Monitoring Program would not result in any of the conditions set forth in Section 15164 of the State CEQA Guidelines that would require a supplement to the South Basin Additional Groundwater Monitoring Program Final Recirculated Mitigated Negative Declaration (FRMND). Specifically:

(1) No substantial changes are proposed in the project which will require major revisions in the FRMND due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects. As the Initial Study indicates that the construction and operation of Monitoring Wells SAM-8, SAM-9 and SAM-13 would not result in any environmental impacts not previously addressed in the FRMND.

(2) No substantial changes would occur with respect to the circumstances under which the project is undertaken which would require major revisions of the FRMND due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects. The physical and environmental circumstances analyzed in the FRMND are not substantially different than those analyzed in Addendum No. 1 to the FRMND.

(3) No new information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence, at the time the previous FRMND was adopted, shows either that the project would have any significant effects not discussed in the FRMND, that the significant effects described in the FRMND would be substantially more severe than shown in the FRMND, that mitigation measures or alternatives found in the FRMND to be infeasible would in fact be feasible, or that any mitigation measures or alternatives are considerably different than those analyzed in the FRMND. The information in the FRMND regarding the environmental impacts, environmental circumstances, mitigation measures and alternatives has not changed.

Based on the foregoing, the FRMND as augmented by Addendum No. 1 adequately analyzes impacts to the environment associated with the construction and operation of relocated Monitoring Wells SAM-8, SAM-9 and SAM-13.
SECTION 6.0 REFERENCES

Bowler, P.A. and M.E. Elvin, 2003 The Vascular Plant Checklist for the University of California Natural Reserve System San Joaquin Marsh

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California Department of Transportation Scenic Highways Program Web Site Accessed, 2016


California Geologic Survey Seismic Hazard Zone Map Tustin, Orange Quadrangle, Accessed October 2016.


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City Irvine General Plan, Site Access 2016.


South Basin Additional Groundwater Monitoring Program

Recirculation
Draft Initial Study/Mitigated Negative Declaration

State Clearinghouse No. 2016031047

Prepared By
Orange County Water District
18700 Ward Street
Fountain Valley, CA 92708
Contact: Daniel Bott

August 2016
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<td>Figure 5: Monitoring Well SAM-10</td>
<td>2-8</td>
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<tr>
<td>Figure 6: Monitoring Well SAM-11</td>
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</tr>
<tr>
<td>Figure 7: Monitoring Well SAM-13</td>
<td>2-10</td>
</tr>
</tbody>
</table>
Appendices


Appendix B: Cultural Resources Record Search

- South Central Coastal Information Center, California State University Fullerton, January, 2016
- California Native American Heritage Commission, January, 2016
- Los Angeles County Natural History Museum, January, 2016
SECTION 1.0 INTRODUCTION

1.1 Purpose of Environmental Review
The California Environmental Quality Act (CEQA) requires that all state and local government agencies consider the environmental consequences of projects over which they have discretionary authority before taking action on those projects. This Initial Study has been prepared to disclose and evaluate short-term construction related impacts and long-term operational impacts associated with the implementation of the South Basin Additional Groundwater Monitoring Program (Proposed Project). Pursuant to Section 15367 of the State CEQA guidelines, the Orange County Water District (OCWD) is the Lead Agency and has the principal responsibility of approving and implementing the Proposed Project. As the Lead Agency, OCWD is required to ensure that the Proposed Project complies with CEQA and that the appropriate level of CEQA documentation is prepared. Through preparation of an Initial Study as the Lead Agency, OCWD would determine whether to prepare an Environmental Impact Report (EIR), Negative Declaration or Mitigated Negative Declaration (MND). If the Lead Agency finds that there is no evidence that a project activity either as proposed or as modified to include the mitigation measures identified in the Initial Study prior to its public circulation, would not cause a significant effect on the environment, the Lead Agency may prepare a Negative Declaration or Mitigated Negative Declaration. Based on the conclusions of this Initial Study, OCWD has recommended that the appropriate level of environmental documentation for the South Basin Additional Groundwater Monitoring Program is a Mitigated Negative Declaration.

1.2 Statutory Authority and Requirements
This Initial Study/Mitigated Negative Declaration has been prepared in accordance with the CEQA, Public Resources Code Section 21000 et seq., State CEQA Guidelines, and the OCWD CEQA Environmental Procedures. The environmental analysis for the South Basin Additional Groundwater Monitoring Program is based on the OCWD Environmental Checklist Form.

1.3 Recirculation Initial Study/Mitigated Negative Declaration South Basin Additional Groundwater Monitoring Program
The Draft Initial Study/Mitigated Negative Declaration (Draft IS/MND) for the South Basin Additional Groundwater Monitoring Program was circulated for public review from March 22, 2016 to April 21, 2016. Public comments were received on the Draft IS/MND and response to comments were forwarded to all commenting agencies. During final design of the project two well sites AMD-14 and OM-10 have been relocated to other locations. No other changes to the project have occurred. The Recirculated Draft IS/MND has been revised to include the two new well site locations and has been recirculated for public comments.
SECTION 2.0 PROJECT DESCRIPTION

2.1 Purpose
The South Basin Additional Groundwater Monitoring Program IS/MND has been prepared to evaluate potential impacts associated with the construction and maintenance of 24 monitoring wells to help secure access agreements for the well sites which would allow for the timely construction of the monitoring wells to study the extent of groundwater contamination in the South Basin area of the Orange County Groundwater Basin. The data gathered from the proposed monitoring wells would be used to support OCWD’s ongoing remedial investigation/feasibility study of groundwater contamination in the South Basin area of the Orange County Groundwater Basin. It is the intent of the OCWD to coordinate and work closely with the Department of Toxic Substances Control (DTSC) on the preparation of the remedial investigation/feasibility study documents for the South Basin area of the Orange County Groundwater Basin and to provide these documents to the DTSC for review once they have been prepared.

2.2 Regional Setting
The proposed monitoring wells that would be utilized for the South Basin Additional Groundwater Monitoring Program would be located within the City of Santa Ana and City of Irvine, Orange County California. The regional location of the monitoring well sites is shown in Figure 1.

2.3 Local Project Site Setting

City of Santa Ana Well Sites
Monitoring Well SAM-7
As shown in Figure 2, Monitoring Well SAM-7 would be located approximately 300 east of the intersection of American Way East and MacArthur Place. The site would contain four clustered monitoring wells that would be located in the center of Hutton Center Drive. The well site is situated business office park. The well site is located on USGS Anaheim Tustin Quadrangle Map, Township 5S, Range 9W, Section 8.

City of Irvine Well Sites
Monitoring Well SAM-8
As shown Figure 3, Monitoring Well SAM-8 would be located approximately 550 feet from the intersection of Cowan Avenue and Fitch Street. The site would contain four clustered monitoring wells that would be located on the northeast side of Cowan Drive. The well site is surrounded by industrial buildings. The well site is located on USGS Tustin Quadrangle Map, Township 5S, Range 9W, Section 7.
South Basin Groundwater Monitoring Program
Regional Location Map

Figure 1

Path: I:\SS\Bott\SouthBasinMonitoring\MXD\RegionalMap.mxd

Proposed Well Location
Monitoring Well SAM-9
As shown Figure 4, Monitoring Well SAM-9 would be located approximately 130 feet from the intersection of Armstrong Avenue and MacArthur Boulevard. The site would contain four clustered monitoring wells that would be located on the north side of Armstrong Avenue. The well site is surrounded by industrial buildings. The well site is located on USGS Tustin Quadrangle Map, Township 5S, Range 9W, Section 47.

Monitoring Well SAM-10
As shown in Figure 5, Monitoring Well SAM-10 would be located approximately 75 feet from the intersection of Gillette Avenue and Langley Avenue. The site would contain four clustered monitoring wells that would be located on the northwest side of Gillette Avenue. The well site is surrounded by commercial and industrial buildings. The well site is located on USGS Tustin Quadrangle Map, Township 5S, Range 9W, Section 47.

Monitoring Well SAM-11
As shown Figure 6, Monitoring Well SAM-11 would be located approximately 340 feet west of the intersection of Deere Avenue and Red Hill Avenue. The site would contain four clustered monitoring wells. The well site is surrounded by existing industrial buildings. The well site is located on USGS Tustin Quadrangle Map, Township 5S, Range 9W, Section 9.

Monitoring Well SAM-13
As shown Figure 7, Monitoring Well SAM-13 would be located approximately 140 feet southeast of the intersection of McGaw Avenue and Pullman Street. The site would contain four clustered monitoring wells that would be located in the center median along McGaw Avenue. The well site is surrounded by industrial buildings. The well site is located on USGS Tustin Quadrangle Map, Township 5S, Range 9W, Section 9.

2.4 Construction Operations
The proposed construction activities would occur in three construction phases. Phase 1 of the Proposed Project involves the drilling and construction of the monitoring wells. Phase 2 involves development of the monitoring wells, and Phase 3 involves site clean-up and vault installation. All operations would occur between the hours of 8:00 AM and 5:00 PM Monday through Friday.
South Basin Groundwater Monitoring Program
Monitoring Well SAM-9

Figure 4

Path: I:\SS\Bott\SouthBasinMonitoring\MXD\Sam9.mxd
Proposed Well Location
South Basin Groundwater Monitoring Program
Monitoring Well SAM-10
Figure 5
Monitoring Well SAM-11

South Basin Groundwater Monitoring Program
Monitoring Well SAM-11

Figure 6

Path: I:\DPB\South Basin Groundwater Protection Project (SBGPP)\GY_Working\WellLocMap_SAM-11.mxd

DEERE AVE
Proposed Well Location
DEERE AVE
RED HILL AVE
STANLEY
South Basin Groundwater Monitoring Program
Monitoring Well SAM-13

Figure 7
Phase 1: Monitor Well Drilling and Construction

The equipment mix for well drilling is shown in Table 1. The proposed monitoring well boreholes would be drilled using hollow-stem auger and sonic drilling methods. The 22 “shallow” wells at sites SAM-7 through SAM-13 would be drilled using hollow stem auger drilling method. These monitoring wells would consist of 4-inch diameter PVC casings installed in 10-inch diameter boreholes to depths up to 125 feet below ground surface (bgs). Once the borehole drilling is completed at each well location, the monitoring well would be constructed. Borehole drilling and well construction would not occur concurrently.

The “deep” wells at each site SAM-7 through SAM-13 (the deepest well at each site) would be drilled using sonic drilling method. These monitoring wells would consist of 4-inch diameter PVC casings installed in 8-inch diameter boreholes to depths up to 145 feet bgs. Once the sonic borehole drilling is completed at each location, the monitoring well would be constructed. Borehole drilling and well construction would not occur concurrently.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Equipment</th>
<th>Pieces of Equipment</th>
<th>Hours of Operation</th>
<th>Days of Operation</th>
<th>Horsepower</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Deep Well Drilling Equipment</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drilling &amp; Construction</td>
<td>Rotary Sonic Drilling Rig</td>
<td>1</td>
<td>8</td>
<td>9</td>
<td>225</td>
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<td>Drilling &amp; Construction</td>
<td>Support Truck</td>
<td>1</td>
<td>2</td>
<td>9</td>
<td>325</td>
</tr>
<tr>
<td>Drilling &amp; Construction</td>
<td>Steam Cleaner</td>
<td>1</td>
<td>2</td>
<td>9</td>
<td>50</td>
</tr>
<tr>
<td>Drilling &amp; Construction</td>
<td>Forklift</td>
<td>1</td>
<td>2</td>
<td>9</td>
<td>75</td>
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<td><strong>Shallow Well Drilling Equipment</strong></td>
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<td>Well Drilling &amp; Construction</td>
<td>Hollow Stem Auger Drilling Rig</td>
<td>1</td>
<td>8</td>
<td>18</td>
<td>250</td>
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<tr>
<td>Well Drilling &amp; Construction</td>
<td>Support Truck</td>
<td>1</td>
<td>2</td>
<td>18</td>
<td>325</td>
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<tr>
<td>Well Drilling &amp; Construction</td>
<td>Steam Cleaner</td>
<td>1</td>
<td>2</td>
<td>18</td>
<td>50</td>
</tr>
<tr>
<td>Well Drilling &amp; Construction</td>
<td>Forklift</td>
<td>1</td>
<td>2</td>
<td>18</td>
<td>75</td>
</tr>
</tbody>
</table>

Construction Trips, 1 trip mobilizing 1 trip demobilizing, 2 trips between sites. All trips assumed 25 miles.
Phase 2: Monitor Well Development

Phase 2 of the Proposed Project involves development airlifting and pumping the monitoring wells. The “shallow” hollow stem auger drilling well development would consist of approximately 3 hours of airlifting and 3 hours of pumping. The “deep” sonic well development would consist of approximately 6 hours of pumping using the generator and submersible pump. Airlifting would not be necessary for sonic wells; however, airlifting could be included in developing the sonic wells pending a later decision. Table 2 identifies the development equipment mix for well equipping.

Table 2: Well Development Equipment Mix

<table>
<thead>
<tr>
<th>Activity</th>
<th>Equipment</th>
<th>Pieces of Equipment</th>
<th>Hours of Operation</th>
<th>Days of Operation</th>
<th>Horsepower</th>
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<tr>
<td>Well Development</td>
<td>Pump Rig</td>
<td>1</td>
<td>6</td>
<td>24</td>
<td>325</td>
</tr>
<tr>
<td>Well Development</td>
<td>Air Compressor</td>
<td>1</td>
<td>3</td>
<td>24</td>
<td>200</td>
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<tr>
<td>Well Development</td>
<td>Electrical Generator</td>
<td>1</td>
<td>4</td>
<td>24</td>
<td>20</td>
</tr>
</tbody>
</table>

Development Trips: 24, All tips assumed 25 miles.

Phase 3: Site Cleanup and Vault Installation

Phase 3 of the Proposed Project involves site cleanup and below ground vault installation. This phase of work involves minimal equipment and would be done by hand. There is no list of equipment for this phase.

2.5 Construction-Phasing

Phases 1 and 2 could occur concurrently at separate sites, pending available equipment and labor.

2.6 Monitoring Well Long-Term Operation and Maintenance Activities

In general, operation of the monitoring wells would be passive. OCWD staff would collect groundwater samples from the wells on a quarterly basis. In total, the monitoring wells would be visited by OCWD staff 8 times per year. One truck and two workers would access each well site during sampling, making a round trip length of approximately 20 miles each trip. One truck and one worker would access each well site during collection of water levels, making a round trip length of approximately 20 miles each trip.

Every three to five years OCWD could conduct maintenance activities to redevelop the wells. Table 3 identifies the equipment that would be used for well sampling and redevelopment. A typical monitoring well redevelopment process can be completed in
one day. All sampling and redevelopment activities would occur between 8:00 am and 5:00 pm.

Table 3: Monitoring Well Sampling and Redevelopment Equipment Mix

<table>
<thead>
<tr>
<th>Equipment</th>
<th>Pieces of Equipment</th>
<th>Hours Per Day</th>
<th>Days of Operation</th>
<th>Horsepower</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sampling Equipment</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Generator</td>
<td>1</td>
<td>4</td>
<td>1</td>
<td>20</td>
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<tr>
<td>Redevelopment Equipment</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pump Rig</td>
<td>1</td>
<td>9</td>
<td>1</td>
<td>325</td>
</tr>
<tr>
<td>Light Weight Truck</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>300</td>
</tr>
<tr>
<td>Air Compressor</td>
<td>1</td>
<td>9</td>
<td>1</td>
<td>200</td>
</tr>
</tbody>
</table>

Sampling & Redevelopment Trips 6 miles

2.7 Permits and Approvals

The Initial Study/Mitigated Negative Declaration prepared for the South Basin Additional Groundwater Monitoring Program would be used as the supporting CEQA environmental documentation for the following approvals and permits.

- Orange County Water District project approval and related construction contracts and agreements.
- City of Santa Ana Encroachment Permit to construct Monitoring Wells within City right-of-way
- City of Irvine Well Encroachment Permit to construct Monitoring Wells within City right-of-way
- County of Orange Health Care Agency Well Permits
SECTION 3.0 ENVIRONMENTAL CHECKLIST EVALUATIONS

The following is the OCWD Environmental Checklist Form that was prepared for the South Basin Additional Groundwater Monitoring Program. The Environmental Checklist Form is consistent with Environmental Checklist form provided in Appendix G of the CEQA Guidelines.

I. Project Title: South Basin Additional Groundwater Monitoring Program

II. Lead Agency Name and Address: Orange County Water District, 8700 Ward Street, Fountain Valley, CA 92708

III. Project Contact: Daniel Bott

IV. Location: Cities of Santa Ana and Irvine

V. Environmental Determination on the basis of this initial evaluation, I find that:

a) ☐ The proposed project COULD NOT have a significant effect on the environment and a NEGATIVE DECLARATION will be prepared.

b) ☒ Although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions to the project have been made by or agreed to by the applicant. A MITIGATED NEGATIVE DECLARATION will be prepared.

c) ☐ The proposed project MAY have a significant effect on the environment and an ENVIRONMENTAL IMPACT REPORT is required.

d) ☐ Although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR (EIR No. - ) pursuant to applicable standards and (b) have been avoided or mitigated pursuant to that earlier EIR, including revisions or mitigation measures that are imposed upon the project, nothing further is required.

e) ☐ Pursuant to Section 15164 of the CEQA Guidelines, an EIR (EIR No. - ) has been prepared earlier and only minor technical changes or additions are necessary to make the previous EIR adequate and these changes do not raise important new issues about the significant effects on the environment. An ADDENDUM to the EIR shall be prepared.

f) ☐ Pursuant to Section 15162 of the CEQA Guidelines, an EIR (EIR No. - ) has been prepared earlier; however, subsequent proposed changes in the project and/or new information of substantial importance will cause one or more significant effects no previously discussed. A SUBSEQUENT EIR shall be prepared.

_____________________________________________   __________________
Signature Date

_____________________________________________  
Printed Name
### Environmental Checklist

**For CEQA Compliance**

#### V. Issues & Supporting Information Sources

<table>
<thead>
<tr>
<th>Potentially Significant Impact</th>
<th>Less Than Significant with Mitigation Incorporated</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
</tr>
</thead>
</table>

#### I. Aesthetics – Would the project:

- a) Have a substantial adverse effect on a scenic vista?
  - [ ] Potentially Significant
  - [ ] Less Than Significant with Mitigation Incorporated
  - [ ] Less Than Significant
  - [x] No Impact

- b) Damage scenic resources, including but not limited to, trees, rock outpourings and historic buildings within a state highway?
  - [ ] Potentially Significant
  - [ ] Less Than Significant with Mitigation Incorporated
  - [ ] Less Than Significant
  - [x] No Impact

- c) Substantially degrade the existing visual character or quality of the site and its surroundings?
  - [ ] Potentially Significant
  - [ ] Less Than Significant with Mitigation Incorporated
  - [x] Less Than Significant
  - [ ] No Impact

- d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?
  - [ ] Potentially Significant
  - [ ] Less Than Significant with Mitigation Incorporated
  - [x] Less Than Significant
  - [ ] No Impact

#### II. AGRICULTURAL AND FOREST RESOURCES:

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model prepared by the California Department of Conservation as an optional model to use in assessing impacts on agricultural farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state’s inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:

- a) Convert Prime Farmland, Unique Farmland or Farmland of Statewide Importance (Farmland) to non-agricultural use? (The Farmland Mapping and Monitoring Program in the California Resources Agency, Department of Conservation, maintain detailed maps of these and other categories of farmland.)
  - [ ] Potentially Significant
  - [ ] Less Than Significant with Mitigation Incorporated
  - [x] Less Than Significant
  - [ ] No Impact

- b) Conflict with existing zoning for agricultural use or a Williamson Contract?
  - [ ] Potentially Significant
  - [ ] Less Than Significant with Mitigation Incorporated
  - [x] Less Than Significant
  - [ ] No Impact

- c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g), timberland (as
V. Issues & Supporting Information

<table>
<thead>
<tr>
<th>Sources</th>
<th>Potentially Significant Impact</th>
<th>Less Than Significant with Mitigation Incorporated</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>defined by Public Resources Code section 4526, or timberland zoned Timberland Production (as defined by Government Code section 51104(g))</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d) Result in the loss of forest land or conversion of forest land to non-forest use?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>✗</td>
</tr>
<tr>
<td>e) Involve other changes in the existing environment which, due to their location or nature, could individually or cumulatively result in loss of Farmland, to non-agricultural use or conversion of forest land to non-forest use?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>✗</td>
</tr>
</tbody>
</table>

III. Air Quality – Where available, the significance criteria established by the applicable air quality management or pollution control district may be relied upon to make the following determinations. Would the project:

<table>
<thead>
<tr>
<th>Would the project:</th>
<th>Potentially Significant Impact</th>
<th>Less Than Significant with Mitigation Incorporated</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Conflict with or obstruct implementation of applicable Air Quality Attainment Plan?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>✗</td>
</tr>
<tr>
<td>b) Violate any stationary source air quality standard or contribute to an existing or projected air quality violation?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>✗</td>
</tr>
<tr>
<td>c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>✗</td>
</tr>
<tr>
<td>d) Expose sensitive receptors to substantial pollutant concentrations?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>✗</td>
</tr>
<tr>
<td>e) Create objectionable odors affecting a substantial number of people?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>✗</td>
</tr>
</tbody>
</table>

IV. Biological Resources – Would the project:

<table>
<thead>
<tr>
<th>Would the project:</th>
<th>Potentially Significant Impact</th>
<th>Less Than Significant with Mitigation Incorporated</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Have a substantial adverse impact, either directly or through habitat modifications, on any species</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>✗</td>
</tr>
<tr>
<td>V. Issues &amp; Supporting Information Sources</td>
<td>Potentially Significant Impact</td>
<td>Less Than Significant with Mitigation Incorporated</td>
<td>Less Than Significant Impact</td>
<td>No Impact</td>
</tr>
<tr>
<td>--------------------------------------------</td>
<td>--------------------------------</td>
<td>-----------------------------------------------</td>
<td>----------------------------</td>
<td>----------</td>
</tr>
<tr>
<td>identified as a candidate, sensitive or special status species in local or regional plans, policies or regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Services?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
</tr>
<tr>
<td>b) Have a substantial adverse impact on any riparian habitat or natural community identified in local or regional plans, policies, and regulations or by the California Department of fish and Game or U.S. Fish and Wildlife Service?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
</tr>
<tr>
<td>c) Adversely impact federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) either individually or in combination with the known or probable impacts of other activities through direct removal, filling hydrological interruption, or other means?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
</tr>
<tr>
<td>d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
</tr>
<tr>
<td>e) Conflict with any local policies or ordinances protecting biological resources, such as tree preservation policy or ordinance?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
</tr>
<tr>
<td>f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
</tr>
</tbody>
</table>

V. Cultural Resources – Would the project:

a) Cause a substantial adverse change in the significance of a historical
## V. Issues & Supporting Information

### Sources

<table>
<thead>
<tr>
<th>Potentially Significant Impact</th>
<th>Less Than Significant with Mitigation Incorporated</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
</tr>
</thead>
</table>

b) Cause a substantial adverse change in the significance of a unique archaeological resource pursuant to define Section 15064.5?

- [ ] Potentially Significant Impact
- [x] Less Than Significant with Mitigation Incorporated
- [ ] Less Than Significant Impact
- [ ] No Impact

c) Directly or indirectly disturb or destroy a unique paleontological resource or site?

- [ ] Potentially Significant Impact
- [x] Less Than Significant with Mitigation Incorporated
- [ ] Less Than Significant Impact
- [ ] No Impact

d) Disturb any human remains, including those interred outside of formal cemeteries?

- [ ] Potentially Significant Impact
- [x] Less Than Significant with Mitigation Incorporated
- [ ] Less Than Significant Impact
- [ ] No Impact

## VI. Geology and Soils – Would the project:

### a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

1. Rupture of a known earthquake fault, as delineated on the most recent on the most recent Alquist-Priolo Earthquake Fault Zoning map issued by the State Geologist for the area or based on other substantial evidence of a known fault?
   - [ ] Potentially Significant Impact
   - [x] Less Than Significant with Mitigation Incorporated
   - [ ] Less Than Significant Impact
   - [ ] No Impact

   Strong seismic ground shaking?
   - [ ] Potentially Significant Impact
   - [x] Less Than Significant with Mitigation Incorporated
   - [ ] Less Than Significant Impact
   - [ ] No Impact

   3. Seismic-related ground failure, including liquefaction?
   - [ ] Potentially Significant Impact
   - [x] Less Than Significant with Mitigation Incorporated
   - [ ] Less Than Significant Impact
   - [ ] No Impact

   4. Landslides?
   - [ ] Potentially Significant Impact
   - [x] Less Than Significant with Mitigation Incorporated
   - [ ] Less Than Significant Impact
   - [x] No Impact

b) Would the project result in substantial soil erosion or the loss of topsoil?

- [ ] Potentially Significant Impact
- [x] Less Than Significant with Mitigation Incorporated
- [ ] Less Than Significant Impact
- [ ] No Impact

c) Be located on a geologic unit or soil that is unstable or that would become unstable as a result of the project and potentially result in on-or off-site landslide, lateral spreading,
<table>
<thead>
<tr>
<th>V. Issues &amp; Supporting Information Sources</th>
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<th>Less Than Significant Impact</th>
<th>No Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>subsidence, liquefaction or collapse?</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?</td>
<td>□</td>
<td>□</td>
<td>![x]</td>
<td>□</td>
</tr>
<tr>
<td>e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste disposal systems where sewers are not available for the disposal of wastewater?</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>![x]</td>
</tr>
</tbody>
</table>

VII. GREENHOUSE GAS EMISSIONS — Would the project?

| a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? | □                             | □                                             | ![x]           | □         |
| b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases? | □                             | □                                             | □                           | ![x]      |

VIII. HAZARDOUS AND HAZARDOUS MATERIALS – Would the project:

| a) Create a significant hazard to the public or the environment through the routine transport, use or disposal of hazardous materials? | □                             | □                                             | ![x]           | □         |
| b) Create a significant hazard to the public or environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment? | □                             | □                                             | ![x]           | □         |
| c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substance or waste within one-quarter mile of an existing or proposed school? | □                             | □                                             | □                           | ![x]      |
| d) Be located on a site which is located on a list of hazardous materials sites | □                             | □                                             | □                           | ![x]      |
### V. Issues & Supporting Information

<table>
<thead>
<tr>
<th>Sources</th>
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<th>Less Than Significant Impact</th>
<th>No Impact</th>
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</thead>
<tbody>
<tr>
<td>compiled pursuant to Government Code Section 659662.5 and, as a result, would it create a significant hazard to the public or the environment?</td>
<td></td>
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</tr>
<tr>
<td>e) For a project located within an airport land use plan or where such a plan has not been adopted, within two miles where of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?</td>
<td></td>
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</tr>
<tr>
<td>f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?</td>
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<tr>
<td>g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>h) Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?</td>
<td></td>
<td></td>
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</tbody>
</table>

### VIX. HYDROLOGY AND WATER QUALITY – Would the project:

<table>
<thead>
<tr>
<th>HYDROLOGY AND WATER QUALITY</th>
<th>Violate any water quality standards or waste discharge requirements?</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Violate any water quality standards or waste discharge requirements?</td>
<td></td>
<td>☒</td>
<td></td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HYDROLOGY AND WATER QUALITY</th>
<th>Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing</th>
<th></th>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing</td>
<td></td>
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</tbody>
</table>
### Environmental Checklist
For CEQA Compliance

<table>
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<tr>
<th>V. Issues &amp; Supporting Information Sources</th>
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<th>Less Than Significant Impact</th>
<th>No Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>land uses or planned uses for which permits have been granted?</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
</tr>
<tr>
<td>c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
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</tr>
<tr>
<td>d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
</tr>
<tr>
<td>e) Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>f) Otherwise substantially degrade water quality?</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
</tr>
<tr>
<td>g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
</tr>
<tr>
<td>h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
</tr>
<tr>
<td>i) Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam?</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
</tr>
<tr>
<td>j) Inundation by seiche, tsunami, or mudflow?</td>
<td>☐</td>
<td>☐</td>
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<tr>
<td>V. Issues &amp; Supporting Information Sources</td>
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<tr>
<td><strong>X. LAND USE AND PLANNING</strong> – Would the project:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a) Physically divide an established community?</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
</tr>
<tr>
<td>b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
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</tr>
<tr>
<td>c) Conflict with any applicable habitat conservation plan or natural community conservation plan?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
</tr>
<tr>
<td><strong>XI. MINERAL RESOURCES</strong> – Would the project:</td>
<td></td>
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</tr>
<tr>
<td>a) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?</td>
<td>☐</td>
<td>☐</td>
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<tr>
<td><strong>XII. NOISE</strong> – Would the project result in:</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
</tr>
<tr>
<td>b) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
</tr>
<tr>
<td>c) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without project?</td>
<td>☐</td>
<td>☐</td>
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<td>☐</td>
</tr>
<tr>
<td>d) For a project located within an airport land use plan or where such</td>
<td>☐</td>
<td>☐</td>
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</tr>
</tbody>
</table>
### V. Issues & Supporting Information

#### Sources

<table>
<thead>
<tr>
<th>Potentially Significant Impact</th>
<th>Less Than Significant with Mitigation Incorporated</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
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</thead>
</table>

- a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?
- e) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?  
  - [ ] Potentially Significant Impact  
  - [ ] Less Than Significant with Mitigation Incorporated  
  - [x] Less Than Significant Impact  
  - [ ] No Impact
- f) Exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels?  
  - [ ] Potentially Significant Impact  
  - [ ] Less Than Significant with Mitigation Incorporated  
  - [x] Less Than Significant Impact  
  - [ ] No Impact

### XIII. POPULATION AND HOUSING

- Would the project:
  - a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and business) or indirectly (for example, through extension of roads or other infrastructure)?  
    - [x] No Impact
  - b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?  
    - [x] No Impact
  - c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?  
    - [x] No Impact

### XIV. PUBLIC SERVICES

- Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable
  - [x] No Impact
### Environmental Checklist
For CEQA Compliance

#### V. Issues & Supporting Information

**Sources**

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<tr>
<th>Impact</th>
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<th>Less Than Significant with Mitigation Incorporated</th>
<th>Less Than Significant Impact</th>
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<tbody>
<tr>
<td>Fire protection?</td>
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<tr>
<td>Police protection?</td>
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<tr>
<td>Schools?</td>
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<tr>
<td>Parks?</td>
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<tr>
<td>Other public facilities?</td>
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</tbody>
</table>

#### XV. RECREATION

a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

#### XVI. TRANSPORTATION/TRAFFIC

Would the project:

a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?

b) Conflict with an applicable congestion management program, including but limited to level of service standards and travel demand measures, or other standards established by the
<table>
<thead>
<tr>
<th>V. Issues &amp; Supporting Information Sources</th>
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<th>Less Than Significant Impact</th>
<th>No Impact</th>
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</thead>
<tbody>
<tr>
<td>county congestion management agency for designated roads or highways?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
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</tr>
<tr>
<td>c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
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</tr>
<tr>
<td>d) Substantially increase hazards to a design feature (e.g. sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment)?</td>
<td>☐</td>
<td>☑</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>e) Result in inadequate emergency access?</td>
<td>☐</td>
<td>☐</td>
<td>☑</td>
<td>☐</td>
</tr>
<tr>
<td>f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?</td>
<td>☐</td>
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<td>☐</td>
</tr>
</tbody>
</table>

XVII. UTILITIES AND SERVICE SYSTEMS – Would the project:

| a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board? | ☐ | ☐ | ☑ | ☐ |
| b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects? | ☐ | ☑ | ☐ | ☐ |
| c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects? | ☐ | ☐ | ☑ | ☐ |
| d) Are sufficient water supplies available to serve the project from | ☐ | ☐ | ☐ | ☑ |
### V. Issues & Supporting Information

<table>
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<tr>
<th>Sources</th>
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<th>Less Than Significant Impact</th>
<th>No Impact</th>
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</thead>
<tbody>
<tr>
<td>existing entitlements and resources or are new or expanded entitlements needed?</td>
<td>✗</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>e) Result in the determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project’s projected demand in addition to the provider’s existing commitments?</td>
<td></td>
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<td></td>
<td>✗</td>
</tr>
<tr>
<td>f) Is the project served by a landfill with sufficient permitted capacity to accommodate the project’s solid waste disposal needs?</td>
<td></td>
<td>✗</td>
<td></td>
<td></td>
</tr>
<tr>
<td>g) Comply with federal, state and local statutes and regulations related to solid waste?</td>
<td></td>
<td></td>
<td>✗</td>
<td></td>
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</tbody>
</table>

### XVIII. MANDATORY FINDINGS OF SIGNIFICANCE –

| a) | Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory? | | ✗ | |
| b) | Does the project have impacts that are individually limited but cumulatively considerable? (“Cumulatively considerable” means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, effects of other current projects and the | | ✗ | |
Environmental Checklist
For CEQA Compliance

V. Issues & Supporting Information

<table>
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<th>No Impact</th>
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<tr>
<td>effects of probable future projects).</td>
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</table>

c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

Note: Authority cited: Sections 21083, 21083.05, Public Resources Code. Reference: Section 65088.
SECTION 4.0 ENVIRONMENTAL ANALYSIS

The following environmental analysis responds to the environmental issues listed on the OCWD CEQA Checklist Form. The analysis identifies the level of anticipated impact that would occur at each well site and where needed includes the incorporation of mitigation measures to reduce potentially significant impacts to the environment to a less than significant level. In cases where all well sites share common constraints or lack of common constraints, all of the well sites would be evaluated together. In cases where issues are unique to a particular well site, the well site would be evaluated separately.

4.1 Aesthetics

A. Would the project have a substantial adverse effect on a scenic vista?

City of Santa Ana
Monitoring Well SAM-7

City of Irvine
Monitoring Well SAM-8
Monitoring Well SAM-9
Monitoring Well SAM-10
Monitoring Well SAM-11
Monitoring Well SAM-13

No Impact: The proposed monitoring well sites are located within urbanized areas and surrounded by developed land uses. There are no scenic resources near the locations where the proposed monitoring wells would be constructed. Additionally, the City of Santa Ana General Plan and the City of Irvine General Plan both do not identify any scenic vistas near the proposed monitoring well sites. The construction and operation of the Proposed Project would not adversely impact existing vistas. No mitigation measures required.

B. Would the project damage scenic resources, including but limited to, trees, rock outpourings, and historic buildings within a State Highway?

City of Santa Ana
Monitoring Well SAM-7

City of Irvine
Monitoring Well SAM-8
Monitoring Well SAM-9
Monitoring Well SAM-10
Monitoring Well SAM-11
Monitoring Well SAM-13

No Impact: The California Department of Transportation Scenic Highways Program identifies that there is not any State Scenic Highways within the vicinity of the proposed monitoring well sites. Therefore, construction and operation of the Proposed Project would not have any adverse impact on existing scenic resources located along a State Scenic Highway. No mitigation measures required.

C. Would the project substantially degrade the existing visual character or quality of the site and its surrounding?

City of Santa Ana

Monitoring Well SAM-7

Less than Significant Impact: The City of Santa Ana Urban Design Element identifies the urban element forms of the City as Districts, Paths, Nodes, Focus Intersections, Landmarks and Gateways. Each of the urban form elements have specific polices and design guidelines to ensure that new development in the City is compatible with the City’s character and overall urban form.

Monitoring Well SAM-7 is located within MacArthur Place within the MacArthur Place/Hutton Center mixed use development. The Urban Design Element identifies MacArthur Place as a District and Node. Districts are defined as areas that have consistent design features and Nodes are defined as more focused areas with compatible design features and activities. The primary focus in these areas is to ensure that new development is aesthetically compatible with existing urban forms. The proposed monitoring wells would be located underground in an existing roadway. The only component of the monitoring wells that would be viewable would be a 2’ x 3’ metal cover. The operation of the monitoring wells would not be in conflict with the existing aesthetic character or with the intent District and Node urban design concepts. During construction, the visual character of the project site would temporary be altered with construction activity. The construction activity would be for a short period of time, and once construction operations are completed the site would be returned to its pre-project condition. Potential short term aesthetic impacts would be less than significant. No mitigation measures required.

City of Irvine

Monitoring Well SAM-8
Monitoring Well SAM-9
Monitoring Well SAM-10
Monitoring Well SAM-11
Monitoring Well SAM-13

Less than Significant Impact: The City of Irvine General Plan does not identify any specific design guidelines at any of the proposed monitoring well sites. The proposed monitoring wells would be located in areas that are composed of industrial buildings and professional office land uses encompassed in a landscaped business park setting. The proposed monitoring wells would be located underground in existing roadways and would not have a visual presence that would be in conflict with the existing business park aesthetic character. During construction, the visual character of the well sites would temporary be altered with construction activity. The construction activity would be for a short period of time, and once construction operations are completed the well sites would be returned to their pre-project condition. Potential short term aesthetic impacts would be less than significant. No mitigation measures required.

D. Would the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

City Santa Ana
Monitoring Well SAM-7

City of Irvine
Monitoring Well SAM-8
Monitoring Well SAM-9
Monitoring Well SAM-10
Monitoring Well SAM-11
Monitoring Well SAM-13

No Impact: The proposed monitoring wells would be located underground and would not require permanent on-site lighting. Construction operations for the proposed monitoring wells would occur during the day. Therefore, no temporary night lighting would be required. No short term or long term adverse light and glare impacts would occur. No mitigation measures required.

4.2 Agricultural Resources/Forest Resources

A. Would the project convert Prime Farmland, Unique Farmland or Farmland of Statewide Importance to non-agriculture uses?

City Santa Ana
Monitoring Well SAM-7
City of Irvine
Monitoring Well SAM-8
Monitoring Well SAM-9
Monitoring Well SAM-10
Monitoring Well SAM-11
Monitoring Well SAM-13

No Impact: The State of California Farmland Mapping and Monitoring Program, indicates that there is no Prime Farmland, Unique Farmland or Farmland of Statewide Importance on any of the proposed monitoring well sites. Therefore, the construction and operation of the Proposed Project would not result in adverse impacts to Prime Farmland, Unique Farmland or Farmland of Statewide Importance. No mitigation measures required.

B. Would the project be in conflict with existing zoning for agriculture use or a Williamson Contract?

City Santa Ana
Monitoring Well SAM-7

City of Irvine
Monitoring Well SAM-8
Monitoring Well SAM-9
Monitoring Well SAM-10
Monitoring Well SAM-11
Monitoring Well SAM-13

No Impact: The City of Santa Ana Zoning Map and the City of Irvine Zoning Map both show that none of the proposed monitoring well sites are zoned for agriculture land uses. Therefore, the construction and operation of the Proposed Project would not be in conflict with any existing agriculture zoning or existing agriculture leases or contracts on the property. No mitigation measures required.

C. Would the project be in conflict with existing zoning for, or cause rezoning of forest land or timberland.

City Santa Ana
Monitoring Well SAM-7
City of Irvine
Monitoring Well SAM-8
Monitoring Well SAM-9
Monitoring Well SAM-10
Monitoring Well SAM-11
Monitoring Well SAM-13

No Impact: The City of Santa Ana Zoning Map and City of Irvine Zoning Map both show that none of the proposed monitoring well sites are zoned for forest or timberland. The implementation of the Proposed Project would not cause change of zone to existing forest or timberlands. No mitigation measures required.

D. Would the project result in the loss of forest land or conversion of forest land to non-forest use?

City Santa Ana
Monitoring Well SAM-7

City of Irvine
Monitoring Well SAM-8
Monitoring Well SAM-9
Monitoring Well SAM-10
Monitoring Well SAM-11
Monitoring Well SAM-13

No Impact: There is not existing farmland on any of the proposed monitoring well sites. Therefore, the construction and operation of the Proposed Project would not convert forest land to non-forest land. No mitigation measures required.

E. Would the project involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agriculture use or conversion of forest land to non-forest use?

City Santa Ana
Monitoring Well SAM-7

City of Irvine
Monitoring Well SAM-8
Monitoring Well SAM-9
Monitoring Well SAM-10
Monitoring Well SAM-11
Monitoring Well SAM-13

No Impact: There is not existing farmland on any of the proposed monitoring well sites. Therefore, the construction and operation of the Proposed Project would not directly or indirectly result in the loss of any forest land or result in the conversion forest lands to non-forest lands. No mitigation measures required.

4.3 Air Quality

The following analysis is based on an Air Quality and Greenhouse Gas Analysis Report prepared by Bonterra/Psomas in February 2016. The Air Quality and Greenhouse Gas Analysis Report are presented in its entirety in Appendix A.

Setting

The project site is located in the South Coast Air Basin (SoCAB). The SoCAB includes Orange County in its entirety and the non-desert portions of Los Angeles, San Bernardino, and Riverside Counties.

Regulatory Framework

Air pollutants are regulated at the national, state and air basin level. Each agency has a different level of regulatory responsibility. The United States Environmental Protection Agency (EPA) regulates at the national level. The California Air Resources Board (ARB) regulates at the state level and the South Coast Air Quality Management District regulates at the air basin level.

Federal Regulation

The EPA handles global, international, national and interstate air pollution issues and policies. The EPA sets national vehicle and stationary source emission standards, oversees approval of all State Implementation Plans, conducts research, and provides guidance in air pollution programs and sets National Ambient Air Quality Standards (NAAQS), also known as federal standards. There are six common air pollutants, called criteria air pollutants, which were identified resulting from provisions of the Clean Air Act of 1970. The six criteria pollutants are Ozone, Particulate Matter (PM10 and PM 2.5), Nitrogen Dioxide, Carbon Monoxide, Lead and Sulfur Dioxide. The NAAQS were set to protect public health, including that of sensitive individuals.

State Regulation

A State Implementation Plan (SIP) is a document prepared by each state describing air quality conditions and measures that would be followed to attain and maintain NAAQS. The SIP for the State of California is administered by the ARB, which has overall
responsibility for statewide air quality maintenance and air pollution prevention. The ARB also administers California Ambient Air Quality Standards (CAAQS), for the ten air pollutants designated in the California Clean Air Act (CCAA). The ten state air pollutants include the six national criteria pollutants and visibility reducing particulates, hydrogen sulfide, sulfates and vinyl chloride.

**South Coast Air Quality Management District**

The project area is located within the South Coast Air Basin (basin). The air pollution control agency for the basin is the South Coast Air Quality Management District (SCAQMD). The SCAQMD is responsible for controlling emissions primarily from stationary sources. Additionally, SCAQMD in coordination with the Southern California Association of Governments (SCAG) is also responsible for developing, updating and implementing the Air Quality Management Plan (AQMP) for the basin. An AQMP is a plan prepared by an air pollution control district for a county or region designated as non-attainment of the national and/or California ambient air quality standards. The term non-attainment area is used to refer to an air basin where one or more ambient air quality standards are exceeded. Presently, the basin has a National non-attainment status for Ozone, PM10 and PM2.5 and a State non-attainment status for PM10 and PM2.5.

**Air Quality Management Plan**

In response to federal and State requirements to implement measures to achieve the NAAQS and CAAQS, the SCAQMD is responsible for reducing emissions from stationary (area and point), mobile, and indirect sources. It has responded to this requirement by preparing a sequence of AQMPs. An AQMP establishes a program of rules and regulations directed at attaining the NAAQS and CAAQS.

On November 28, 2007, CARB submitted a SIP revision to the USEPA for O3, PM2.5 (1997 Standard), CO, and NO2 in the SoCAB. This revision is identified as the “2007 South Coast SIP”. The 2007 South Coast SIP demonstrates attainment of the federal PM2.5 standard in the SoCAB by 2014 and attainment of the federal 8-hour O3 standard by 2023. This SIP also includes a request to reclassify the O3 attainment designation from “severe” to “extreme”. The USEPA approved the redesignation effective June 4, 2010. The “extreme” designation requires attainment of the 8-hour O3 standard in the SoCAB by June 2024. CARB approved PM2.5 SIP revisions in April 2011 and the O3 SIP revisions in July 2011. The USEPA approved the PM2.5 SIP on September 25, 2013, and has approved 47 of the 62 1997 8-hour O3 SIP requirements. On November 30, 2014, the USEPA proposed a finding that the SoCAB has attained the 1997 PM2.5 standards. The comment period closed on January 22, 2015; no subsequent action has been taken.
On December 7, 2012, the SCAQMD adopted the 2012 AQMP, which is a regional and multiagency effort (SCAQMD, CARB, SCAG, and USEPA). The 2012 AQMP incorporates the latest scientific and technical information and planning assumptions including SCAG’s 2012–2035 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS); updated emission inventory methods for various source categories; and SCAG’s latest growth forecasts. The primary purposes of the 2012 AQMP are to demonstrate attainment of the federal 24-hour PM2.5 standard by 2014 and to update the USEPA-approved 8-hour Ozone Control Plan. On December 20, 2012, the 2012 AQMP was submitted to CARB and the USEPA for concurrent review and approval for inclusion in the SIP. CARB approved the 2012 AQMP on January 25, 2013. The USEPA has not approved the 2012 AQMP portion of the SIP.

The SCAQMD is currently developing the 2016 AQMP. Adoption by the SCAQMD Governing Board is scheduled for April 2016.

Project Impacts

While the final determination of whether a project is significant is within the purview of the Lead Agency pursuant to Section 15064(b) of the CEQA Guidelines, SCAQMD recommends that its quantitative air pollution thresholds be used to determine the significance of project emissions. If the Lead Agency finds that the project has the potential to exceed these air pollution thresholds, the project should be considered to have significant air quality impacts. The applicable SCAQMD thresholds and methodologies are contained under each impact statement below.

A. Would the project be in conflict with or obstruct implementation of the applicable air quality plan or congestion management plan?

Less than Significant Impact: The main purpose of an AQMP is to bring an area into compliance with the requirements of Federal and State air quality standards. The 2012 AQMP and the 2016 AQMP are designed to accommodate expected future population, housing, and employment growth and are based on SCAG’s 2012–2035 RTP/SCS and Draft 2016–2040 RTP/SCS, which were developed from City and County General Plans, as well as regional population, housing, and employment projections. As shown in Table 4 to Table 7, pollutant emissions from the Proposed Project would be less than the SCAQMD thresholds and would not result in a significant impact. No conflict with the 2012 AQMP or the 2016 AQMP would occur with the implementation of the Proposed Project. No mitigation measures required.

B. Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Less than Significant Impact: The following analysis evaluates if the Proposed Project would exceed SCAQMD thresholds for construction and operational emissions.
**Construction Emissions**

The Proposed Project construction activities would occur in three construction phases. Phase 1 of the project would involve drilling and construction of the monitoring wells. Phase 2 would involve development of the monitoring wells, and Phase 3 would involve site clean-up and vault installation. For purposes of emissions analysis, only Phases 1 and 2 are analyzed. Phase 3, site cleanup and below-ground vault installation, involves minimal equipment and would be done with hand tools. The Phase 3 worker commute emissions would be negligible when compared to total project emissions.

The estimated maximum daily emissions generated by construction activities are shown in Table 4. These emission values are compared with the SCAQMD mass daily thresholds. As shown in Table 4, all estimated emissions would be substantially less than the applicable SCAQMD CEQA significance thresholds. The impact would be less than significant. No mitigation measures required.

<table>
<thead>
<tr>
<th>Activity</th>
<th>VOC</th>
<th>NOX</th>
<th>CO</th>
<th>PM10</th>
<th>PM2.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Well Drilling Plus Well Development</td>
<td>2</td>
<td>23</td>
<td>13</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>SCAQMD threshold</td>
<td>75</td>
<td>100</td>
<td>550</td>
<td>150</td>
<td>55</td>
</tr>
<tr>
<td>Exceeds Threshold</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

VOC=volatile organic compound, NOX=nitrogen oxides, CO=carbon monoxide, PM10=particulate matter 10 microns or less, PM2.5=particulate matter 2.5 microns or less.

**Localized Construction Emissions**

The localized effects from the on-site portion of daily construction emissions were evaluated at sensitive receptor locations potentially impacted by the Proposed Project according to the SCAQMD’s Localized Significant Threshold (LST) method, which utilizes on-site mass emissions rate look up tables and project-specific modeling, where appropriate. LSTs are applicable to the following criteria pollutants: NO2, CO, PM10, and PM2.5. LSTs represent the maximum emissions from a project that are not expected to cause or contribute to an exceedance of the most stringent applicable Federal or State ambient air quality standard, and are developed based on the ambient concentrations of that pollutant for each source receptor area and distance to the nearest sensitive receptor. As shown in Table 5, the project’s maximum daily on-site emissions would occur during the shallow well drilling phase. As shown in Table 5, localized emissions would not exceed the SCAQMD CEQA Significance thresholds. The impact would be less than significant. No mitigation measures required.
Table 5: Project Localized Construction Emissions (lbs./day)

<table>
<thead>
<tr>
<th>Activity</th>
<th>NOX</th>
<th>CO</th>
<th>PM10</th>
<th>PM2.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum daily On-Site Emissions</td>
<td>9</td>
<td>4</td>
<td>&lt;0.5</td>
<td>&lt;0.5</td>
</tr>
<tr>
<td>SCAQMD threshold</td>
<td>81</td>
<td>485</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Exceeds Threshold</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

NOX = nitrogen oxides, CO = carbon monoxide, PM10 = particulate matter 10 microns or less, PM2.5 = particulate matter 2.5 micros or less.

Operational Emissions

In general, the operation of the monitoring wells would be passive as there would be no permanent equipment installed in the wells. OCWD staff members would collect groundwater samples and groundwater levels from the wells on a quarterly basis. In total, the wells would be visited by OCWD staff members eight times per year. One truck and 2 workers would access each well site during sampling, making a round trip length of approximately 20 miles each trip.

Well redevelopment would occur every three to five years for each group of wells. A typical monitoring well redevelopment process can be completed in one day. Operational emissions were estimated assuming the redevelopment of an average of two wells per year. Well redevelopment and well sampling could occur on the same day; therefore the emissions from the two activities are additive. The results of the Proposed Project’s operational criteria pollutant calculations as the maximum daily missions are shown in Table 6 and are compared with the SCAQMD mass daily thresholds. As shown in Table 6, all estimated emissions would be less than the applicable SCAQMD CEQA significance thresholds. No mitigation measures required.

Table 6: Project Estimated Operational Emissions (lbs./day)

<table>
<thead>
<tr>
<th>Activity</th>
<th>VOC</th>
<th>NOX</th>
<th>CO</th>
<th>PM10</th>
<th>PM2.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Well Redevelopment</td>
<td>1</td>
<td>16</td>
<td>7</td>
<td>0.5</td>
<td>0.5</td>
</tr>
<tr>
<td>Well Sampling and Water Collection</td>
<td>&lt;0.5</td>
<td>1</td>
<td>&lt;0.5</td>
<td>&lt;0.5</td>
<td>&lt;0.5</td>
</tr>
<tr>
<td>Combined Emissions</td>
<td>1</td>
<td>16</td>
<td>7</td>
<td>0.6</td>
<td>0.5</td>
</tr>
<tr>
<td>SCAQMD threshold</td>
<td>55</td>
<td>55</td>
<td>550</td>
<td>150</td>
<td>55</td>
</tr>
<tr>
<td>Exceeds Threshold</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

VOC = volatile organic compound, NOX = nitrogen oxides, CO = carbon monoxide, PM10 = particulate matter 10 microns or less, PM2.5 = particulate matter 2.5 micros or less.
Localized Operational Emissions

The localized effects from the on-site portion of daily operational emissions for the proposed project were evaluated at sensitive receptor locations potentially impacted by the Proposed Project, as described above for construction emissions. As shown in Table 7, all estimated emissions would be less than the applicable thresholds and potential localized operational air quality impacts would be less than significant. No mitigation measures required.

<table>
<thead>
<tr>
<th>Activity</th>
<th>NOX</th>
<th>CO</th>
<th>PM10</th>
<th>PM2.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum Daily On-Site Emissions</td>
<td>16</td>
<td>7</td>
<td>0.5</td>
<td>0.5</td>
</tr>
<tr>
<td>SCAQMD threshold</td>
<td>81</td>
<td>485</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Exceeds Threshold</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

NOX=nitrogen oxides, CO=carbon monoxide, PM10=particulate matter 10 microns or less, PM2.5=particulate matter 2.5 microns or less.

C. Would the project result in cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?

Less than Significant Impact: The region is a Federal and/or State nonattainment area for PM10, PM2.5, and O3. The Proposed Project would contribute particulates and the O3 precursors VOC and NOx to the area during short-term project construction and long-term operations. The SCAQMD considers the thresholds for project-specific impacts and cumulative impacts to be the same. As described above, construction and operational regional emissions would be less than the SCAQMD CEQA significance thresholds and would be less than significant. Therefore, regional emissions would not be cumulatively considerable, and the impact would be less than significant. No mitigation measures required.

D. Would the project expose sensitive receptors to substantial pollutant concentrations?

Less than Significant Impact: The following analysis evaluates the potential for sensitive receptors in the project area to subject to elevated levels of CO and toxic air contaminants.

Carbon Monoxide Hotspots

A CO hotspot is an area of localized CO pollution that is caused by severe vehicle congestion on major roadways, typically near intersections. If a project increases average delay at signalized intersections operating at level of service (LOS) E or F or
causes an intersection that would operate at LOS D or better without the project to operate at LOS E or F with the project, a quantitative screening is required.

The Proposed Project would generate a negligible amount of traffic that would be limited to occasional inspection visits and worker commuting during well redevelopment or water sampling. Therefore, the Proposed Project would not increase congestion at major signalized intersections in the area. There would be no impact and no exposure of sensitive receptors to project-generated local CO emissions. No mitigation measures required.

**Criteria Pollutants from On-Site Construction**

As described in the construction and operational “Ambient Air Quality and Localized Significance Thresholds” discussions above, the Proposed Project construction and operational localized impacts would be less than significant. No mitigation measures required.

**Toxic Air Contaminants**

The greatest potential for toxic air contaminant emissions during construction or operations would be related to diesel PM emissions associated with construction equipment operations. Diesel equipment operations associated with the Proposed Project would be limited to approximately two months at each site. The assessment of cancer risk is typically based on a 30- to 70-year exposure period. Because exposure to diesel exhaust would be substantially less than the 30- to 70-year exposure period, the incremental cancer risk to exposed persons would be negligible. The impact would be less than significant. No mitigation measures required.

**E. Would the project create objectionable odors affecting a substantial number of people?**

**Less than Significant Impact:** The Proposed Project construction activities and operational well redevelopment and well sampling activities would generate odors. Potential construction odors would mostly be diesel exhaust emissions. There may be situations where construction activity odors would be noticeable by persons working nearby, but these odors would not be unfamiliar or necessarily objectionable. The odors would be temporary and would dissipate rapidly from the source with an increase in distance. Therefore, the Proposed Project impacts would be short-term; would not be objectionable to a substantial number of people; and would be less than significant. No mitigation measures required.

**4.4 Biological Resources**

**A. Would the project have a substantial adverse impact, either directly or through habitat modifications, on any species identified as a candidate, sensitive or**
special status species in local or regional plans, policies or regulations or by the California Department of Fish and Game or U.S. Fish and wildlife Services?

The OCWD Natural Resources Department conducted a review of the California Department of Fish and Wildlife California Natural Diversity Data Base for the USGS Tustin Quadrangle to determine the potential for special status species to occur within the quadrangle area where the proposed monitoring wells would be located. Subsequently, OCWD Natural Resource Department conducted a site visits at each well site to confirm the presence or lack of presence of the species and their associated habitat. A complete listing of special status species that have been identified to have potential to occur within the USGS Tustin Quadrangle area is shown in Table 8.

**City Santa Ana**

**Monitoring Well SAM-7**

**City of Irvine**

**Monitoring Well SAM-8**

**Monitoring Well SAM-9**

**Monitoring Well SAM-10**

**Monitoring Well SAM-11**

**Monitoring Well SAM-13**

**No Impact:** As shown in Table 8, all of the proposed monitoring well sites are located within urbanized area and lack suitable habitat to support special status plant or wildlife species. The construction and operation of the Proposed Project would not result significant impacts to sensitive plant and wildlife species or their habitat. No mitigation measures required.

### Table 8: Special Status Species List

<table>
<thead>
<tr>
<th>Species</th>
<th>Fed</th>
<th>State</th>
<th>CNPS</th>
<th>Habitat</th>
<th>Potential Occurrence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atriplex coulteri (Coulter's Saltbush)</td>
<td>NL</td>
<td>NL</td>
<td>1B.2</td>
<td>Coastal Bluff Scrub</td>
<td>All Sites-Low, All Sites- Lack Suitable Amount Habitat</td>
</tr>
<tr>
<td>Atriplex Pacifica (South Coast Saltscale)</td>
<td>NL</td>
<td>NL</td>
<td>1B.2</td>
<td>Coastal Bluff Scrub</td>
<td>All Sites-Low, All Sites- Lack Suitable Amount Habitat</td>
</tr>
<tr>
<td>Atriplex serenana var. davidsonii (Davidson's Saltscale)</td>
<td>NL</td>
<td>NL</td>
<td>1B.2</td>
<td>Coastal Bluff Scrub</td>
<td>All Sites-Low, All Sites- Lack Suitable Amount Habitat</td>
</tr>
<tr>
<td>Species</td>
<td>Habitat Type</td>
<td>Amount Habitat</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---------------------------------------------</td>
<td>----------------------</td>
<td>-----------------------</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Centromadia parryi ssp. Australis (Southern Tarplant)</td>
<td>Marshes and Swamps</td>
<td>All Sites-Low</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dudleya multicaulis (Many-stemmed dudleya)</td>
<td>Coastal Sage Scrub</td>
<td>All Sites-Low</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Helianthus nuttallii ssp. Parishii (Los Angeles sunflower)</td>
<td>Marshes and Swamps</td>
<td>All Sites-Low</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lasthenia glabrata ssp. Coulteri (Coulter’s Goldfield)</td>
<td>Coastal Salt Marshes</td>
<td>All Sites-Low</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lepidium virginicum var. robinsonii (Robonson’s Pepper Grass)</td>
<td>Coastal Bluff Scrub</td>
<td>All Sites-Low</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nama Stenocarpa (Mud Nama)</td>
<td>Marshes and Swamps</td>
<td>All Sites-Low</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pentachaeta aurea ssp. Allenii (Allen’s pentachaeta)</td>
<td>Coastal Bluff Scrub</td>
<td>All Sites-Low</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Senecio aphanactis (Chaparral Ragwort)</td>
<td>Coastal Bluff Scrub</td>
<td>All Sites-Low</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Syphyotrichum defoliatum (San Bernardino Aster)</td>
<td>Marshes and Swamps</td>
<td>All Sites-Low</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Wildlife**

<table>
<thead>
<tr>
<th>Species</th>
<th>Habitat Type</th>
<th>Amount Habitat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammodramus savannarum (Grasshopper Sparrow)</td>
<td>Dense Grasslands</td>
<td>All Sites-Low</td>
</tr>
<tr>
<td>Athene cunicularia (Burrowing Owl)</td>
<td>Grasslands</td>
<td>All Sites-Low</td>
</tr>
<tr>
<td>Campylorhynchus bruneicapillus sandiegensis (Coastal Cactus Wren)</td>
<td>Closely associated with areas with patches of cholla or prickly pear cacti</td>
<td>All Sites-Low</td>
</tr>
<tr>
<td>Choerronycteris mexicana</td>
<td>Well lighted caves</td>
<td>All Sites-Low</td>
</tr>
<tr>
<td>Species Description</td>
<td>Site</td>
<td>Habitat</td>
</tr>
<tr>
<td>---------------------------------------------------</td>
<td>------</td>
<td>---------</td>
</tr>
<tr>
<td>(Mexican Long-Tongue Bat)</td>
<td>T</td>
<td>E</td>
</tr>
<tr>
<td>Coccyczus americanus occidentalis (Western Yellow-Billed Cuckoo)</td>
<td>NL</td>
<td>SSC</td>
</tr>
<tr>
<td>Crotalus ruber (Red Diamond Rattlesnake)</td>
<td>NL</td>
<td>SSC</td>
</tr>
<tr>
<td>Emys Marmorata (Western Pond Turtle)</td>
<td>NL</td>
<td>SSC</td>
</tr>
<tr>
<td>Eumops perotis californicus (Western Mastiff Bat)</td>
<td>NL</td>
<td>SSC</td>
</tr>
<tr>
<td>Icteria virens (Yellow Breasted Chat)</td>
<td>NL</td>
<td>SSC</td>
</tr>
<tr>
<td>Laterallus jamaicensis coturniculus (California Black Rail)</td>
<td>NL</td>
<td>T</td>
</tr>
<tr>
<td>Passerculus sandwichensis beldingi (Beldings Savannah sparrow)</td>
<td>NL</td>
<td>E</td>
</tr>
<tr>
<td>Perognathus longimembris pacificus (Pacific Pocket Mouse)</td>
<td>E</td>
<td>NL</td>
</tr>
<tr>
<td>Phrynosoma blainvillii (Coast horned Lizard)</td>
<td>NL</td>
<td>SSC</td>
</tr>
<tr>
<td>Polioptila californica californica (Coastal California Gnatcatcher)</td>
<td>T</td>
<td>NL</td>
</tr>
<tr>
<td>Rallus longirostris levipes (Light Footed)</td>
<td>E</td>
<td>E</td>
</tr>
</tbody>
</table>
B. Would the project have a substantial adverse impact on any riparian habitat or natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

City Santa Ana

Monitoring Well SAM-7

City of Irvine

Monitoring Well SAM-8
Monitoring Well SAM-9
Monitoring Well SAM-10
Monitoring Well SAM-11
Monitoring Well SAM-13

No Impact: The proposed monitoring well sites and the surrounding areas do not contain any sensitive vegetation natural communities that would be regulated by the California Department Fish and Wildlife, or United States Fish and Wildlife Service. The construction and operation of the Proposed Project would not result in adverse impacts to any sensitive vegetation natural communities. No mitigation measures required.

C. Would the project have a substantially adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act through direct removal, filling hydrological interruption, or other means?
No Impact: A preliminary wetland assessment was conducted at the proposed monitoring well sites in accordance with Regional Supplement to the U.S. Army Corps of Engineers Wetland Delineation Manual Arid Region Wet. Based on Wetland Delineation Manual a three parameter approach was used to identify potential Wetland Waters of the U.S. and State. These parameters include the presence of wetland vegetation, presence of hydrology and the presence of hydric soils. As shown in Table 9, all of the proposed monitoring well sites lacked the required parameters that define Wetland Waters of the United States and State. The construction and operation of the Proposed Project would not result in adverse impacts to Wetland Waters of the U.S./State. No mitigation measures required.

<table>
<thead>
<tr>
<th>Well Site</th>
<th>Wetland Vegetation Present</th>
<th>Hydrology Present</th>
<th>Hydric Soils Present</th>
<th>Wetland Determination</th>
</tr>
</thead>
<tbody>
<tr>
<td>Santa Ana SAM-7</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Not present</td>
</tr>
<tr>
<td>Irvine SAM-8</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Not Present</td>
</tr>
<tr>
<td>Irvine SAM-9</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Not Present</td>
</tr>
<tr>
<td>Irvine SAM-10</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Not Present</td>
</tr>
<tr>
<td>Irvine SAM-11</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Irvine SAM-13</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Not Present</td>
</tr>
</tbody>
</table>

D. Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

City Santa Ana

Monitoring Well SAM-7


City of Irvine  
Monitoring Well SAM-8  
Monitoring Well SAM-9  
Monitoring Well SAM-10  
Monitoring Well SAM-11  
Monitoring Well SAM-13

Less than Significant Impact: All of the proposed monitoring well sites are situated within an urbanized environment and impacted with elevated levels of traffic noise. The study area lacks suitable habitat to support wildlife. The roadways where the monitoring wells would be constructed are lined with ornamental trees. Additionally, the parking areas near the wells sites are also landscaped with ornamental trees. OCWD Biologist conducted a biological survey to determine the potential for migratory birds to occur within the study area. Based on the highly urbanized environment and lack of suitable habitat there would low potential for migratory birds to occur. The construction of the monitoring wells would not require the removal of any trees. Therefore, there would be a potential for direct impacts to migratory birds. In the event migratory birds are present, it would be unlikely that construction noise from the well construction activities would adversely affect them, given the fact that the study area currently experiences elevated levels of noise. The construction and operation of the Proposed Project would not interfere with the movement of any native resident or migratory fish, birds or other wildlife species. No mitigation measures required.

E. Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

City of Santa Ana  
Monitoring Well SAM-7

City of Irvine  
Monitoring Well SAM-8  
Monitoring Well SAM-9  
Monitoring Well SAM-10  
Monitoring Well SAM-11  
Monitoring Well SAM-13

No Impact. Neither the City of Santa Ana nor the City of Irvine has policies for the protection of biological resources that would apply to any of the proposed monitoring
well sites. No conflicts with local policies that provide for the protection of biological resources would occur. No mitigation measures required.

F. Would the project be in conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

City of Santa Ana
Monitoring Well SAM-7

City of Irvine
Monitoring Well SAM-8
Monitoring Well SAM-9
Monitoring Well SAM-10
Monitoring Well SAM-11
Monitoring Well SAM-13

No Impact. None of the proposed well sites are included within an adopted Habitat Management Plan or Natural Community Conservation Plan. No mitigation measures required.

4.5 Cultural Resources

Introduction

Cultural resources include prehistoric archaeological sites, historic archaeological sites, historic structures, and artifacts made by people in the past.

Prehistoric archaeological sites are places that contain the material remains of activities carried out by the native population of the area (Native Americans) prior to the arrival of Europeans in Southern California. Artifacts found in prehistoric sites include flaked stone tools such as projectile points, knives, scrapers, and drills; ground stone tools such as manos, metates, mortars, and pestles for grinding seeds and nuts; and bone tools.

Historic archaeological sites are places that contain the material remains of activities carried out by people during the period when written records were produced after the arrival of Europeans. Historic archaeological material usually consists of refuse, such as bottles, cans, and food waste, deposited near structure foundations.

Historic structures include houses, commercial structures, industrial facilities, and other structures and facilities more than 50 years old.
Record Search

The proposed well sites are located within an urbanized area and surrounded by developed land uses and have been disturbed by some type earthwork activity. To identify the potential for archeological and historical resources, a ½ mile radius cultural resource record search was conducted for each well site at the South Coast Information Center. The records search included a review of all recorded and built-environmental resources as well as review of cultural resource reports on file. Additionally, the California Points of Historical Interest, California Historical Landmarks, the California Register of Historical Resources, National Register of Historic Places and the California State Historic Properties Directory listings were reviewed. The record search is presented in Appendix B.

Project Impacts

A. Would the project cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5 of the CEQA Guidelines?

City of Santa Ana

Monitoring Well SAM-7

City of Irvine

Monitoring Well SAM-8
Monitoring Well SAM-9
Monitoring Well SAM-10
Monitoring Well SAM-11
Monitoring Well SAM-13

Less than Significant Impact with Mitigation: The records search review identified that there were no listed historical properties on the proposed well sites or within the nearby areas. All of the well sites are located in areas where the natural ground surface has been disturbed by urban development. As a result, a field survey would yield no reliable data. Even though each well site appears to have been previously disturbed, because historical resources are known to occur in the regional area, there would still be potential for the discovery of unknown prehistoric and historical cultural resources. Agriculture remains, foundations, trails, hearths, trash dumps, privies, changes in soil colorations human or animal bone, pottery, chipped or shaped stone are all potential indications of an archaeological site. Therefore, it is recommended that a halt condition should be in place for any ground-disturbing activities. With the implementation of Mitigation Measure CR-1, potential adverse impacts to unknown historical resources would be less than significant.
Mitigation Measure

CR-1: In the event that any evidence of cultural resources is discovered, all work within the vicinity of the find should stop until a qualified archaeological consultant can assess the find and make recommendations.

B. Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5 of the CEQA Guidelines?

City of Santa Ana
Monitoring Well SAM-7

City of Irvine
Monitoring Well SAM-8
Monitoring Well SAM-9
Monitoring Well SAM-10
Monitoring Well SAM-11
Monitoring Well SAM-13

Less than Significant Impact with Mitigation: The records search review identified that there were no recorded archaeological sites on the proposed well sites or within the nearby areas. Even though each well site appears to have been previously disturbed, there is still potential for the discovery of unknown archaeological resources. With the implementation of Mitigation Measure CR-1 potential adverse impacts to unknown archaeological resources would be less than significant.

Mitigation Measure
Mitigation Measure CR-1 required.

C. Would the project disturb any human remains, including those interred outside of formal cemeteries?

City of Santa Ana
Monitoring Well SAM-7

City of Irvine
Monitoring Well SAM-8
Monitoring Well SAM-9
Monitoring Well SAM-10
Monitoring Well SAM-11
Monitoring Well SAM-13
Less than Significant Impact with Mitigation: Section 21080.3.1 of the Public Resources Code requires a Lead Agency to consult with any California Native American tribe that requests consultation for potential impacts to tribal cultural resources. On December 3, 2015 OCWD requested coordination with representatives from the Gabrieleno Band of Mission Indians. The tribal representative indicated that there were not any known Native American sacred lands on the well sites or in the nearby area. The tribal representative indicated that even though each well site appears to have been previously disturbed, there is still the potential for the discovery of Native American cultural resources and that a Native American monitor should be present during well drilling activities. Additionally, if the well sites contain native vegetation that would be removed, or an authorized Tribal representative should visit the project site to document and distinguish native vegetation that is preferred by the Tribe.

The proposed well sites are located within an urbanized area and surrounded by developed land uses. There is no onsite vegetation. Given the level of disturbance to the study area and the fact that there is no indication of Native American cultural resource sensitivity, the potential for the Proposed Project to encounter Native American cultural resources during construction would be very low and would not warrant onsite monitoring. However, a halt condition has been recommended for any ground-disturbing activities in the event unknown Native American cultural resources are encountered. With the implementation of Mitigation Measure CR-1 and CR-2 potential adverse impacts to unknown Native American cultural resources would be less than significant.

Mitigation Measures

Mitigation Measure CR-1 is required.

CR-2: If human remains are encountered during excavation activities, all work shall halt in the vicinity of the remains and the County Coroner shall be notified (California Public Resources Code §5097.98). The Coroner will determine whether the remains are of forensic interest. If the Coroner, with the aid of a qualified Archaeologist, determines that the remains are prehistoric, s/he will contact the Native American Heritage Commission (NAHC). The NAHC will be responsible for designating the most likely descendant (MLD), who will be responsible for the ultimate disposition of the remains, as required by Section 7050.5 of the California Health and Safety Code. The MLD shall make his/her recommendation within 48 hours of being granted access to the sites. If feasible, the recommendation of the MLD shall be followed and may include scientific removal and non-destructive analysis of the human remains and any items associated with Native American burials (California Health and Safety Code §7050.5). If the landowner rejects the recommendations of the MLD, the landowner shall rebury the
remains with appropriate dignity on the property in a location that will not be subject to further subsurface disturbance (*California Public Resources Code* §5097.98).

D. Would the project directly or indirectly disturb or destroy a unique paleontological resource or site?

*City of Santa Ana*

Monitoring Well SAM-7

*City of Irvine*

Monitoring Well SAM-8
Monitoring Well SAM-9
Monitoring Well SAM-10
Monitoring Well SAM-11
Monitoring Well SAM-13

**Less than Significant Impact with Mitigation:** The Natural History Museum of Los Angeles County (NHMLAC) was contacted and requested to review their topographical maps for the study area to determine the geology underlying the project site, the sensitivity of the well sites for the presence of fossils, and if any fossil-bearing localities had been recorded. The record search is presented in Appendix B. According to NHLMAC, the entire study area has surficial deposits composed of younger Quaternary Alluvium, derived as alluvial fan deposits from the hills to the northeast and as part of the floodplain of the Santa Ana River. These deposits usually do not contain significant vertebrate fossils, at least in the uppermost layers, but they could be underlain by older Quaternary deposits at varying depths. Based on the NHLMAC record search there are not any recorded vertebrate fossil localities that lie directly within the study area, but there are nearby localities in the same sediments that could contain older Quaternary deposits. The closest fossil vertebrate localities from these particular older Quaternary deposits are LACM 4219, located southwest of the study area in a road cut for the Newport Freeway in the City of Costa Mesa, which produced fossil specimen of turtle and camel and LACM 1339, located west-southwest of the project area along Adams Avenue near the top of the mesa bluffs east of the Santa Ana River, that produced fossil specimens of mammoth.

The shallow excavations in the uppermost layers of soil and younger Quaternary Alluvium exposed in the study area are unlikely to uncover significant vertebrate fossils. Deeper excavations that extend into older sedimentary deposits could have potential to contain vertebrate fossil remains. Because there could be potential that older sedimentary deposits could be encountered, a halt condition should be in place for any ground-disturbing activities. With the implementation of Mitigation Measure CR-3
potential adverse impacts to unknown paleontological resources would be less than significant.

**CR-3:** In the event that any evidence of paleontological resources is discovered, all work within the vicinity of the find should stop and a qualified paleontologist is will be notified and retained. The Paleontological Monitor will divert heavy equipment away from the fossil site until s/he has had an opportunity to examine the remains.

### 4.6 Geology/Soils

**A1. Would the project expose people or structures to potential substantial adverse effects, including the risk of loss, injury or death involving rupture of an unknown earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map?**

*City of Santa Ana*

Monitoring Well SAM-7

*City of Irvine*

Monitoring Well SAM-8
Monitoring Well SAM-9
Monitoring Well SAM-10
Monitoring Well SAM-11
Monitoring Well SAM-13

**No Impact:** According to the City of Santa Ana General Plan and the City of Irvine General Plan, there is no Alquist-Priolo Earthquake Fault Zone on or near any of the proposed monitoring well sites. Therefore, it is unlikely the proposed monitoring wells would be subject to ground rupture impacts. No mitigation measures required.

**A2. Would the project expose people or structures to potential substantial adverse effects, including the risk of loss, injury or death involving strong seismic ground shaking?**

*City of Santa Ana*

Monitoring Well SAM-7

*City of Irvine*

Monitoring Well SAM-8
Monitoring Well SAM-9
Monitoring Well SAM-10
Monitoring Well SAM-11
Monitoring Well SAM-13

Less than Significant Impact: All of the proposed monitoring well sites are located in a seismically active area that could be subject to seismic shaking impacts from several surrounding active earthquake faults in the region. The highest seismic risks to the proposed well sites would be from the Newport-Inglewood Fault Zone and the Whittier-Elsinore Fault Zone. Each of these faults would have the potential to cause moderate to large earthquakes in excess of 7.0 on the Richter Scale. In the event a moderate to large earthquake occurs, the proposed monitoring wells could have the potential for periodic shaking, possibly of considerable intensity. The risk for seismic shaking impacts at all of the proposed monitoring well sites would be similar to other areas in the southern California region. The proposed monitoring wells would be designed to meet Essential Facilities Standards of the California Building Code to withstand anticipated ground shaking caused by an earthquake within an acceptable level of risk. Compliance with the California Building Code would reduce potential seismic shaking impacts to a less than significant level. No mitigation measures required.

A3. Would the project expose people or structures to potential substantial adverse effects, including the risk of loss, injury or death involving liquefaction?

City of Santa Ana
Monitoring Well SAM-7

City of Irvine
Monitoring Well SAM-8
Monitoring Well SAM-9
Monitoring Well SAM-10
Monitoring Well SAM-11
Monitoring Well SAM-13

Less than Significant Impact: Liquefaction is the phenomenon in which loosely deposited soils located within the water table undergo rapid loss of shear strength due to excess pore pressure generation when subjected to strong earthquake induced ground shaking. Liquefaction is known generally to occur in saturated or near-saturated cohesion- less soil at depths shallower than 50-feet below the ground surface.

According to the City of Santa Ana General Plan and the City of Irvine General Plan, the proposed monitoring well sites are within a liquefaction hazard area. To minimize liquefaction risks, the proposed monitoring wells would be designed to meet seismic design parameters of the California Building Code to withstand potential liquefaction.
impacts caused by an earthquake at an acceptable level of risks. Compliance with the California Building Code would reduce potential liquefaction impacts to a less than significant level. No mitigation measures required.

A4. Would the project expose people or structures to potential substantial adverse effects, including the risk of loss, injury or death involving landslides?

City of Santa Ana
Monitoring Well SAM-7

City of Irvine
Monitoring Well SAM-8
Monitoring Well SAM-9
Monitoring Well SAM-10
Monitoring Well SAM-11
Monitoring Well SAM-13

No Impact: Landslides triggered by earthquakes historically have been a significant cause of earthquake damage, responsible for destroying or damaging numerous structures, blocking major transportation corridors and life-line infrastructure systems. Areas that are most susceptible to earthquake-induced landslides are steep slopes in poorly cemented or highly fractured rocks, areas underlain by loose, weak soils and areas on or adjacent to existing landslide deposits.

According to the City of Santa Ana General Plan and the City of Irvine General Plan, the proposed monitoring well sites are not located in areas that would be subject to landslide risks. No mitigation measures required.

B. Would the project result in substantial soil erosion or the loss of topsoil?

City of Santa Ana
Monitoring Well SAM-7

City of Irvine
Monitoring Well SAM-8
Monitoring Well SAM-9
Monitoring Well SAM-10
Monitoring Well SAM-11
Monitoring Well SAM-13
Less than Significant Impact: The drilling operations associated with the construction of the proposed monitoring wells would occur on paved roadway surfaces. No soils would be exposed that could be subject to water and/or wind erosion. No mitigation measures required.

C. Would the project be located on a geologic unit or soil that is unstable or that would become unstable as a result of the project and potentially result in on or off site landslide, lateral spreading, subsidence, liquefaction or collapse?

City of Santa Ana
Monitoring Well SAM-7

City of Irvine
Monitoring Well SAM-8
Monitoring Well SAM-9
Monitoring Well SAM-10
Monitoring Well SAM-11
Monitoring Well SAM-13

Less than Significant Impact: The primary geologic concerns at the proposed monitoring well sites would be potential seismic shaking impacts and liquefaction impacts. As previously identified, the proposed monitoring wells would be designed to meet seismic design parameters of the California Building Code to withstand potential liquefaction and seismic shaking impacts caused by an earthquake at an acceptable level of risks. Compliance with the California Building Code would reduce potential liquefaction and seismic shaking impacts to a less than significant level. No mitigation measures required.

D. Would the project be located on expansive soil, as defined in Table 18-1-B of the uniform Building Code, creating substantial risks to life or property?

City of Santa Ana
Monitoring Well SAM-7

City of Irvine
Monitoring Well SAM-8
Monitoring Well SAM-9
Monitoring Well SAM-11
Monitoring Well SAM-10
Monitoring Well SAM-13
Less than Significant Impact: Expansive soils are characterized as specific clay materials with the capacity to shrink, swell or otherwise significantly change volume due to variations in moisture content. Expansive soils could cause excessive cracking and heaving of structures with shallow foundations and concrete. Preliminary investigations conducted by OCWD did not identify any soil constraints that would increase the risks for damage. The proposed monitoring wells would be designed to meet Essential Facilities Standards of the California Uniform Building Code. Compliance with the California Building Code would reduce potential soil expansion impacts to a less than significant level. No mitigation measures required.

E. Would the project have soils incapable of adequately supporting the use of septic tanks or alternative waste disposal systems where sewers are not available for the disposal of wastewater?

City of Santa Ana
Monitoring Well SAM-7

City of Irvine
Monitoring Well SAM-8
Monitoring Well SAM-9
Monitoring Well SAM-10
Monitoring Well SAM-11
Monitoring Well SAM-13

No Impact: The construction of the proposed monitoring wells would not involve construction of septic tanks, or other alternative wastewater disposal systems. No mitigation measures are required.

4.7 Greenhouse Gas Emissions

The following analysis is based on the Air Quality and Greenhouse Gas Analysis Report prepared by Bonterra/Psomas in February 2016. The Air Quality and Greenhouse Gas Analysis Report are presented in its entirety in Appendix A.

Background

Greenhouse Gas Emissions (GHGs) are comprised of atmospheric gases and clouds within the atmosphere that influence the earth’s temperature by absorbing most of the infrared radiation that rises from the sun-warmed surface and that would otherwise escape into space. This process is commonly known as the “Greenhouse Effect”. GHGs are emitted by natural processes and human activities.
GHGs, include carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆). Other greenhouse gases include water vapor, ozone, and aerosols. Water vapor is an important component of our climate system and is not regulated. Although there could be health effects resulting from changes in the climate and the consequences that can bring about, inhalation of greenhouse gases at levels currently in the atmosphere will not result in adverse health effects, with the exception of ozone and aerosols (particulate matter). The potential health effects of ozone and particulate matter are discussed in air quality criteria pollutant analyses. At very high indoor concentrations (not at levels existing in outside areas), carbon dioxide, methane, sulfur hexafluoride, and some chlorofluorocarbons can cause suffocation as the gases can displace oxygen.

Regulatory Framework

Below are a listing of State plans, policies, regulations, and laws related to GHGs and global climate change.

- Clear Car Standards Assembly Bill 1493
- Executive Order S-3-05
- California Global Warming Solutions Act of 2006
- Senate Bill 97 and Amendments to CEQA Guidelines
- California Air Resources Board Scoping Plan
- Senate Bill 375

South Coast Air Quality Management District Rules

Beginning in April 2008, the SCAQMD convened a Working Group to provide guidance to local lead agencies on determining significance for GHG emissions in their CEQA documents. The Working Group is scheduled to meet once per month. On December 5, 2008, the SCAQMD Governing Board adopted its staff’s proposal for an interim CEQA GHG significance threshold of 10,000 metric tons of CO₂ equivalent per year (MTCO₂e/yr.) for projects where the SCAQMD is the lead agency. The policy objective for establishing this significance threshold and the recommended screening thresholds, below, is to capture projects that represent approximately 90 percent of GHG emissions from new sources (SCAQMD 2008a). These projects would be subject to further analysis and the incorporation of measures to reduce GHG emissions.

In September 2010, the Working Group presented a revised tiered approach to determining GHG significance for residential and commercial projects (SCAQMD 2010). The Working Group has not convened since the fall of 2010. As of June 2015, the proposal has not been considered or approved for use by the SCAQMD Board.
At Tier 1, GHG emissions impacts would be less than significant if the project qualifies under a categorical or statutory CEQA exemption. At Tier 2, for projects that do not meet the Tier 1 criteria, the GHG emissions impact would be less than significant if the project is consistent with a previously adopted GHG reduction plan that meets specific requirements. At Tier 3, the Working Group proposes extending the 10,000 MTCO2e/yr. screening threshold currently applicable to industrial projects where the SCAQMD is the lead agency, described above, to other lead agency industrial projects. A project with emissions less than the applicable screening value would be considered to have less than significant GHG emissions.

**Project Impacts**

A. Would the project generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?

*City of Santa Ana*

Monitoring Well SAM-7

*City of Irvine*

Monitoring Well SAM-8

Monitoring Well SAM-9

Monitoring Well SAM-10

Monitoring Well SAM-11

Monitoring Well SAM-13

**Less than Significant Impact:** There is no established Federal, State, or local quantitative thresholds applicable to the project to determine the quantity of GHG emissions that could have a significant effect on the environment. CARB, the SCAQMD, and various cities and agencies have proposed, or adopted on an interim basis, thresholds of significance or threshold levels that require the implementation of GHG emissions reduction measures. Because the Proposed Project is not a residential or commercial land use development project, the SCAQMD-adopted interim threshold of 10,000 MTCO2e for industrial projects is used for the proposed project.

**Construction Emissions**

GHG emissions for each construction activity and the total construction effort are shown in Table 10. As shown in Table 10, the total construction GHG emissions, which would occur over a one year period, would be substantially less than the SCAQMD CEQA threshold. No mitigation measures required.
Table 10: Estimated Construction Greenhouse House Gas Emissions

<table>
<thead>
<tr>
<th>Activity</th>
<th>Total Emissions (MTCO2e)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase 1: Drilling and Construction of Wells</td>
<td>18</td>
</tr>
<tr>
<td>Phase 2: Well Development</td>
<td>33</td>
</tr>
<tr>
<td>Total Construction Emissions</td>
<td>51</td>
</tr>
<tr>
<td>SCAQMN CEQA Threshold</td>
<td>10,000</td>
</tr>
<tr>
<td>Exceeds Threshold</td>
<td>No</td>
</tr>
</tbody>
</table>

MTCO2e=metric tons of carbon dioxide equivalent

Operational Emissions

Estimated annual operational GHG emissions for the Proposed Project are shown in Table 11. As shown in Table 11, the annual Proposed Project operational GHG emissions would be substantially less than the CEQA thresholds. No mitigation measures required.

Table 11: Estimated Operational Greenhouse House Gas Emissions

<table>
<thead>
<tr>
<th>Activity</th>
<th>Total Emissions (MTCO2e)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Well Redevelopment</td>
<td>3</td>
</tr>
<tr>
<td>Well Sampling</td>
<td>16</td>
</tr>
<tr>
<td>Total Construction Emissions</td>
<td>19</td>
</tr>
<tr>
<td>SCAQMD CEQA Threshold</td>
<td>10,000</td>
</tr>
<tr>
<td>Exceeds Threshold</td>
<td>No</td>
</tr>
</tbody>
</table>

MTCO2e=metric tons of carbon dioxide equivalent

Would the project be in conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

City of Santa Ana

Monitoring Well SAM-7

City of Irvine

Monitoring Well SAM-8

Monitoring Well SAM-9

Monitoring Well SAM-10

Monitoring Well SAM-11
Monitoring Well SAM-13

Less than Significant Impact: The California State Legislature adopted AB 32 in 2006. AB 32 focuses on reducing greenhouse gases (carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride) to 1990 levels by the year 2020. Pursuant to the requirements in AB 32, the ARB adopted the Climate Change Scoping Plan (Scoping Plan) in 2008, which outlines actions recommended to obtain that goal. The Scoping Plan calls for an "ambitious but achievable" reduction in California's greenhouse gas emissions, cutting approximately 30 percent from business-as-usual emission levels projected for 2020, or about 10 percent from today's levels. Similar goals are expressed in Executive Orders S-3-05 and B-30-15. Statewide plans and regulations are being implemented at the statewide level and compliance at the project level is not addressed. Similarly, the Renewable Portfolio Standard is being implemented by electrical utilities. Therefore, the proposed project would not impede the implementation of these RTP/SCS policies.

As discussed the SCAG 2012-2035 RTP/SCS and Draft 2016-2014 RTP/SCS focus on reducing GHG emissions through improved transportation and land use policies. The proposed project would not impede the implementation of these RTP/SCS policies.

The Proposed Project would not be in conflict with State or SCAG plans or regulations adopted for the purpose of reducing GHG emissions. The impact would be less than significant. Mitigation measures not required.

4.8 Hazards/Hazardous Materials

A. Would the project create a significant hazard to the public or the environment through the routine transport, use or disposal of hazardous materials?

City of Santa Ana

Monitoring Well SAM-7

City of Irvine

Monitoring Well SAM-8
Monitoring Well SAM-9
Monitoring Well SAM-10
Monitoring Well SAM-11
Monitoring Well SAM-13

Less than Significant Impact: The State of California defines hazardous materials as substances that are toxic, ignitable, flammable, reactive, corrosive, and show high acute or chronic toxicity, are carcinogenic, have bio-accumulative properties that are persistent in the environment or are water reactive.
The long-term operation of the proposed monitoring wells would not involve the routine transportation, disposal or emission of hazardous materials or waste. Construction operations associated with the proposed monitoring wells would involve the handling of incidental amounts of hazardous materials, such as fuels, oils and solvents. The construction and operation of the proposed monitoring wells would be required to comply with local, state and federal laws and regulations regarding the handling and storage of hazardous materials. Additionally, during construction operations Best Management Practices would be implemented that would include hazardous material spill prevention and management practices. Compliance with local, State and Federal laws and regulations in-conjunction with implementation of Best Management Practices would reduce potential hazardous material safety impacts to a less than significant level. No mitigation measures required.

B. Would the project create a significant hazard to the public or environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

City of Santa Ana
Monitoring Well SAM-7

City of Irvine
Monitoring Well SAM-8
Monitoring Well SAM-9
Monitoring Well SAM-10
Monitoring Well SAM-11
Monitoring Well SAM-13

Less than Significant Impact: The operation of the Proposed Project would not have the potential to release hazardous materials into the environment. As indicated previously, construction operations associated with the proposed monitoring wells would involve the handling of incidental amounts of hazardous materials, such as fuels, oils and solvents. Compliance with local, State and Federal laws and regulations in-conjunction with implementation of Best Management Practices would reduce potential hazardous material safety impacts to a less than significant level. No mitigation measures required.

C. Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substance or waste within one-quarter mile of an existing or proposed school.
City of Santa Ana
Monitoring Well SAM-7

City of Irvine
Monitoring Well SAM-8
Monitoring Well SAM-9
Monitoring Well SAM-10
Monitoring Well SAM-11
Monitoring Well SAM-13

No Impact: The long-term operation of the Proposed Project would not emit hazardous emissions, or involve the handling of acutely hazardous substances within ½ mile of a school. No mitigation measures required.

D. Would the project be located on a site which is included on a list of hazardous material sites compiled pursuant to Government Code Section 65962.5 and as a result, would create significant hazard to the public or the environment?

In accordance with Government Code Section 65962.5 before a Lead Agency accepts as complete an application for any development project which will be used by any person, the applicant shall consult a list compiled by Department of Toxic Control of the following sites:

- Hazardous waste facilities subject to corrective action
- All land designated as hazardous waste property
- Hazardous waste disposal on public lands
- All sites included in the Abandon Site Assessment Program
- List of all public drinking water wells that contain detectable levels of organic contaminants
- All underground storage tanks for which an unauthorized release report is filed
- All solid waste disposal facilities from which there is a migration of hazardous waste and for which a California Regional Water Quality Board has been notified by the Department of Toxic Substances Control
- List of all solid waste disposal facilities from which there is a known migration of hazardous waste

City of Santa Ana
Monitoring Well SAM-7
City of Irvine

Monitoring Well SAM-8
Monitoring Well SAM-9
Monitoring Well SAM-10
Monitoring Well SAM-11
Monitoring Well SAM-13

No Impact: The purpose of the Proposed Project is to evaluate the extent and nature of groundwater contamination within the South Basin area of the Orange County Groundwater Basin to help develop remedial action plan that would remove contaminates from the groundwater basin. The evaluation would provide information for the remediation of groundwater contamination and the protection of the public and the environment, rather than create any hazard to the public or the environment. No mitigation measures required.

E. For a project located within an airport land use plan or where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project the result in a safety hazard for people residing or working within the project area?

City of Santa Ana

Monitoring Well SAM-7

City of Irvine

Monitoring Well SAM-8
Monitoring Well SAM-9
Monitoring Well SAM-10
Monitoring Well SAM-11
Monitoring Well SAM-13

Less than Significant Impact: The Airport Land Use Commission (ALUC) of Orange County assists local agencies to ensure that there are no direct conflicts with land uses, noise or other issues that would impact the functionality and safety of airport and heliport operations. The ALUC requires that local jurisdiction’s general plans and zoning ordinances are consistent with Airport Enviorns Land Use Plans (AELUP’s), which contain noise contours, and restrictions for types of construction and building heights in navigable air space, as well as requirements impacting the establishment or construction of sensitive uses within close proximity to airports.
The closest airport to the proposed monitoring well sites would be John Wayne Airport. According to the John Wayne Airport AELUP monitoring well sites SAM-10, SAM-11 and SAM-13 are outside of the Safety Hazard Zone and monitoring well sites SAM-7, SAM-8 and SAM-9 are located in Safety Zone 6, which is an area generally with low likelihood of accident occurrence. Both residential and non-residential land uses are permitted within the zone. The Proposed Project would be a compatible utility. Additionally, the proposed wells would be underground and would not encroach into any navigable air space. The construction and operation of the proposed monitoring wells would not result in any airport safety related hazards. No mitigation measures required.

F. For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?

City of Santa Ana
Monitoring Well SAM-7

City of Irvine
Monitoring Well SAM-8
Monitoring Well SAM-9
Monitoring Well SAM-10
Monitoring Well SAM-11
Monitoring Well SAM-13

No Impact: There is not private air strips located within the study area. Therefore, the study area would not be subject to aircraft safety hazards. No mitigation measures required.

G. Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

City of Santa Ana
Monitoring Well SAM-7

City of Irvine
Monitoring Well SAM-8
Monitoring Well SAM-9
Monitoring Well SAM-10
Monitoring Well SAM-11
Monitoring Well SAM-13
Less than Significant Impact: The construction and operation of the proposed monitoring wells would occur within existing roadways. The construction operations would require temporary lane closures. During construction at least one traffic lane would be open to allow through traffic. Traffic control devices would be in place to direct traffic through the construction area. With the implementation of Mitigation Measure T-2 potential emergency access impacts would be less than significant.

H. Would the project expose people or structures to a significant risk of loss, injury or death involving wild land fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wild lands?

City of Santa Ana
Monitoring Well SAM-7

City of Irvine
Monitoring Well SAM-8
Monitoring Well SAM-9
Monitoring Well SAM-10
Monitoring Well SAM-11
Monitoring Well SAM-13

No Impact: According to the City of Santa Ana General Plan and the City of Irvine General Plan, the proposed monitoring well sites are not adjacent to or intermixed with wild lands and would not be susceptible wild land fire impacts. No mitigation measures required.

4.9 Hydrology/Water Quality
The proposed well sites are located within the Santa Ana River Watershed. The primary receiving surface water bodies within the project area would include; Lane Channel, Barranca Channel, Delhi Channel, San Diego Creek and Upper Newport Back Bay. The project site also overlies the Orange County Groundwater Basin.

Lane Channel
Lane Channel is a tributary drainage channel for Monitoring SAM-9 and Monitoring Well SAM-10 and Monitoring Well SAM-11. At the upstream segment, Lane Channel is an earthen trapezoidal channel that runs parallel to the westerly side of the SR-55 Freeway. After crossing underneath the freeway the channel transitions into a double reinforced concrete box extending along MacArthur Boulevard, I-405 Freeway to its confluence with San Diego Creek before empting into Upper Newport Bay.
**Barranca Channel**

Barranca Channel is a tributary drainage channel for Monitoring Well SAM-13. The channel ultimately drains into Upper Newport Back Bay. Barranca Channel extends along Red Hill Avenue and Barranca Parkway before its confluence with San Diego Creek. Along this segment the channel is configured as a concrete lined box. At its confluence with San Diego Creek, the channel transitions into open channel with rip rap side slopes, before emptying into Upper Newport Bay.

**Delhi Channel**

Delhi Channel is a tributary drainage for Santa Ana SAM-7. The channel ultimately drains into Upper Newport Back Bay. The upstream segment of the channel extends from the intersection of Flower Avenue and Warner to the intersection of Sunflower Avenue and Flower Street Avenue within the City of Santa Ana. This segment of the channel consists of an earthen trapezoidal channel with fully rip-rapped 2:1 side slopes and width of 20 feet. Downstream of the intersection of Sunflower Street and Flower Street the channel extends westerly for one half mile. This section consists of a reinforced concrete, rectangular channel with a low flow channel in the middle of the channel. From Sunflower Street to Mesa Drive in the City of Costa Mesa the channel is mostly consists of vertical concrete walls with a concrete bottom. From Mesa Avenue to Upper Newport Back Bay the channel consists as an earthen-bottomed channel approximately 20 feet in width before emptying into Upper Newport Bay.

**San Diego Creek**

San Diego Creek is a tributary drainage facility for Santa Ana SAM-11, Irvine SAM-10, Irvine SAM-9 and Irvine SAM-13. San Diego Creek ultimately drains into Upper Newport Bay. The headwaters are in the San Joaquin Hills. The creek flows northwest, after crossing under I-405, the creek becomes channelized and flows northeasterly through east Irvine for approximately 10 miles and then extends southwesterly crossing underneath the I-405 for second time. After extending from the freeway the creek flows into the San Joaquin Marsh and then into Upper Newport Bay.

**Upper Newport Bay**

All of the proposed well sites ultimately drain into Upper Newport Bay. The Upper Newport Bay is a large coastal wetland comprised of approximately 1,000 acres of open space. Upper Newport Bay is connected to the ocean through Newport Beach Harbor. The two primary flood control drainages into Upper Newport Bay are Delhi Channel and San Diego Creek.
Orange County Groundwater Basin

The Orange County Groundwater Basin underlies central and northern Orange County and is bordered by the Santa Ana Mountains to the east, the Pacific Ocean to the west, the Newport-Inglewood Fault to the southwest and Coyote Hills to the north. The basin is contiguous and directly connected to the Central Basin of Los Angeles County to the northwest. The basin reaches depths of over 2,000 feet and is comprised of a complex series of interconnected sand and gravel deposits.

Regulatory Setting

The following is discussion of Federal, State and local water resource programs that are applicable to the Proposed Project.

Clean Water Act

The objectives of the Clean Water Act are to restore and maintain the chemical, physical, and biological integrity of Waters of the United States. The Clean Water Act establishes basic guidelines for regulating discharges of pollutants into the Waters of the United States and requires states to adopt water quality standards to protect health, enhance the quality of water resources and to develop plans and programs to implement the Act. Below is a discussion of sections of the Clean Water Act that are relevant to the proposed project.

Section 303 (d) Water Bodies

Under Section 303 (d) of the Clean Water Act, the State Water Resources Control Board (SWRCB) is required to develop a list of impaired water bodies. Each of the individual Regional Water Quality Control Boards are responsible for establishing priority rankings and developing action plans, referred to as total maximum daily loads (TMDLs) to improve water quality of water bodies included in the 303(d) list. A list of the project area receiving water bodies that have been listed as 303 (d) impaired water body is shown in Table 12.

<table>
<thead>
<tr>
<th>Water Body</th>
<th>Impairment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delhi Channel</td>
<td>Indicator Bacteria</td>
</tr>
<tr>
<td>San Diego Creek</td>
<td>Fecal Coliform, Nutrients, Pesticides, Sediment, Selenium, Toxaphene</td>
</tr>
<tr>
<td>Upper Newport Bay</td>
<td>Chordane, Copper, DDT, indicator Bacteria, Metals, Nutrients, PCB, Pesticides, Sediment Toxicity and Sediment.</td>
</tr>
</tbody>
</table>
Section 402

Section 402 of the Clean Water Act established the National Pollution Discharge Elimination System (NPDES) to control water pollution by regulating point sources that discharge pollutants into Waters of the United States. In the State of California, the EPA has authorized the State Water Resources Control Board (SWRCB) to be the permitting authority to implement the NPDES program. The SWRCB issues two baseline general permits, one for industrial discharges and one for construction activities (General Construction Permit). Additionally, the NPDES Program includes the long-term regulation of storm water discharges from medium and large cities through the MS4 Permit Program.

Short-Term Storm Water Management

Storm water discharges from construction sites with a disturbed area of one or more acres are required to either obtain individual NPDES permits for storm water discharges or be covered by a General Construction Permit. Coverage under the General Construction Permit requires filing a Notice of Intent with the State Water Resources Control Board and preparation of Storm Water Pollution Prevention Plan (SWPPP). Each applicant under the Construction General Permit must ensure that a SWPPP would be prepared prior to grading and implemented during construction. The primary objective of the SWPPP is to identify, construct, implement, and maintain Best Management Practices (BMPs) to reduce or eliminate pollutants in storm water discharges and authorized non-storm water discharges from the construction site during construction. BMPs include: programs, technologies, processes, practices, and devices that control, prevent, remove, or reduce pollution.

Long-Term Storm Water Management

The South Basin Additional Groundwater Monitoring Program would be implemented in the City of Santa Ana and the City of Irvine. Both the City of Santa Ana and the City of Irvine are co-permittees to the County of Orange NPDES MS4 Storm Water Permit and would be responsible for the implementation of the permit requirements. Under the NPDES MS4 Storm Water Permit, construction projects are defined as Priority Projects or Non-Priority Projects based on the type of project and/or level of development intensity.

Priority Projects

Projects that are determined to be a Priority Project are required to prepare a Priority Project WQMP based on the County of Orange Model WQMP. The Priority Project WQMP is required to demonstrate that a project would be able to infiltrate, harvest, evapotranspire or otherwise treat runoff generated from an 85th percentile storm over a 24 hour period. The Model WQMP requires that Low Impact Development (LID) site
design principles be incorporated into the project to reduce and retain runoff to the maximum extent practicable. Such LID site design principles include, but are not limited to, minimizing impervious areas, and designing impervious areas to drain to pervious areas.

**Non-Priority Projects**

Certain projects that do not meet the Priority Project criteria are considered Non-Priority Projects and require preparation of Non-Priority Project Plans (NPP). The Non-Priority Project Plan requires documentation of the selection of site design features, source control and any other BMPs included in a project.

**State of California Porter Cologne Water Quality Control Act**

The Porter Cologne Water Quality Act of 1967 requires the SWRCB and the nine RWQCBs to adopt water quality criteria for the protection and enhancement of Waters of the State of California, including both surface waters and groundwater. The SWRCB sets statewide policy and together with the RWQCB, implements state and federal water quality laws and regulations. Each of the nine regional boards adopts a Water Quality Control Plan or Basin Plan. The Study Area is included within the Santa Ana River Basin Plan.

**Santa Ana River Basin Plan**

**Beneficial Uses**

The Santa Ana River Basin (Basin Plan) designates beneficial uses for waters in the Santa Ana River Watershed and provides quantitative and narrative criteria for a range of water quality constituents applicable to certain receiving water bodies in order to protect these beneficial uses. Specific criteria are provided for the larger water bodies within the region as well as general criteria or guidelines for ocean waters, bays and estuaries, inland surface waters, and groundwater basins. The beneficial uses in the Basin Plan are described in Table 13.

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Beneficial Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>GWR</td>
<td>Groundwater Recharge waters are used for natural or artificial recharge of groundwater for purposes that may include, but are not limited to, future extraction, maintaining water quality or halting saltwater intrusion into freshwater aquifers.</td>
</tr>
<tr>
<td>REC 1</td>
<td>Water Contact Recreation waters are used for recreational activities involving body contact with water where ingestion of water is reasonably possible. These uses may include, but are not limited to, swimming, wading, water skiing, skin and scuba diving, surfing, whitewater activities, fishing and use of natural hot springs.</td>
</tr>
<tr>
<td>REC 2</td>
<td>Non-Contact Water Recreation waters are used for recreational activities involving proximity to water, but not normally body contact with water where ingestion of</td>
</tr>
</tbody>
</table>
water would be reasonably possible. These uses may include, but are not limited to picnicking, sunbathing, hiking, beachcombing, camping, boating, tide pool and marine life study, hunting, sightseeing and aesthetic enjoyment in-conjunction with the above activities.

<table>
<thead>
<tr>
<th>WARM</th>
<th>Warm waters support warm water ecosystems that may include but are not limited to, preservation and enhancement of aquatic habitats, vegetation, fish, and wildlife, including invertebrates.</th>
</tr>
</thead>
<tbody>
<tr>
<td>LWARM-</td>
<td>Limited Warm Freshwater Habitat waters support warm water ecosystems which are severely limited in diversity and abundance.</td>
</tr>
<tr>
<td>COLD</td>
<td>Cold Freshwater habitat waters support coldwater ecosystems.</td>
</tr>
<tr>
<td>BIOL</td>
<td>Preservation of Biological Habitats of Special Significance waters support designated areas of habitats.</td>
</tr>
<tr>
<td>WILD</td>
<td>Wildlife Habitat waters support wildlife habitats that may include, but are not limited to the preservation and enhancement of vegetation and prey species used by waterfowl and other wildlife.</td>
</tr>
<tr>
<td>RARE</td>
<td>Rare, Threatened or Endangered Species (RARE) waters support habitats necessary for the survival and successful maintenance of plant or animal species designated under state or federal law as rare, threatened or endangered.</td>
</tr>
<tr>
<td>MUN</td>
<td>Municipal and Domestic Supply waters are used for community, military, municipal or individual water supply systems. These uses may include, but are not limited to drinking water supply.</td>
</tr>
<tr>
<td>AGR</td>
<td>Agricultural Supply waters are used for farming, horticulture or ranching. These uses may include, but are not limited to irrigation, stock watering, and support of vegetation for range grazing.</td>
</tr>
<tr>
<td>IND</td>
<td>Industrial Service Supply waters are used for industrial activities that do not depend primarily on water quality. These uses may include, but are not limited to mining, cooling water supply, hydraulic conveyance, gravel washing, fire protection and oil well depressurization.</td>
</tr>
<tr>
<td>PROC</td>
<td>Industrial Process Supply waters are used for industrial activities that depend primarily on water quality. These uses may include, but are not limited to, process water supply and all uses of water related to product manufacture or food preparation.</td>
</tr>
<tr>
<td>NAV</td>
<td>Navigation waters are used for shipping, travel, or other transportation by private, commercial or military vessels.</td>
</tr>
<tr>
<td>POW</td>
<td>Hydropower Generation waters are used for hydroelectric power generation.</td>
</tr>
<tr>
<td>COMM</td>
<td>Commercial and Sport fishing waters are used for commercial or recreational collection of fish or other organisms</td>
</tr>
<tr>
<td>AGR</td>
<td>Agricultural Supply waters are used for farming, horticulture or ranching. These uses may include, but are not limited to irrigation, stock watering, and support of vegetation for range grazing.</td>
</tr>
<tr>
<td>SPWN</td>
<td>Waters that support high quality aquatic habitats necessary for reproduction and early development of fish and wildlife.</td>
</tr>
<tr>
<td>MAR</td>
<td>Waters that support marine ecosystems, preservation and enhancement of marine habitats, vegetation, fish and shellfish.</td>
</tr>
<tr>
<td>SHEL</td>
<td>Waters that support habitats necessary for shellfish, clams, oysters, limpets, abalone, shrimp, crab, lobster collected for human consumption.</td>
</tr>
<tr>
<td>EST</td>
<td>Waters that support estuarine ecosystems.</td>
</tr>
</tbody>
</table>
As shown in Table 14, the Basin Plan identifies beneficial uses for San Diego Creek, Upper Newport Bay and the Orange County Groundwater Water Basin.

### Table 14: Study Area Water Body Beneficial Uses

<table>
<thead>
<tr>
<th>Beneficial Use</th>
<th>San Diego Creek</th>
<th>Upper Newport Bay</th>
<th>Orange County Groundwater Basin</th>
</tr>
</thead>
<tbody>
<tr>
<td>Municipal</td>
<td>NL</td>
<td>NL</td>
<td>X</td>
</tr>
<tr>
<td>Agriculture</td>
<td>NL</td>
<td>NL</td>
<td>X</td>
</tr>
<tr>
<td>Industrial</td>
<td>NL</td>
<td>NL</td>
<td>X</td>
</tr>
<tr>
<td>Industrial Processes</td>
<td>NL</td>
<td>NL</td>
<td>X</td>
</tr>
<tr>
<td>Recreation 1</td>
<td>X</td>
<td>X</td>
<td>NL</td>
</tr>
<tr>
<td>Recreation 2</td>
<td>X</td>
<td>X</td>
<td>NL</td>
</tr>
<tr>
<td>Commercial</td>
<td>NL</td>
<td>X</td>
<td>NL</td>
</tr>
<tr>
<td>Biological Habitats</td>
<td>NL</td>
<td>X</td>
<td>NL</td>
</tr>
<tr>
<td>Warm Waters</td>
<td>X</td>
<td>NL</td>
<td>NL</td>
</tr>
<tr>
<td>Wild Waters</td>
<td>X</td>
<td>X</td>
<td>NL</td>
</tr>
<tr>
<td>Rare Waters</td>
<td>NL</td>
<td>X</td>
<td>NL</td>
</tr>
<tr>
<td>SPAWN</td>
<td>NL</td>
<td>X</td>
<td>NL</td>
</tr>
<tr>
<td>MAR</td>
<td>NL</td>
<td>X</td>
<td>NL</td>
</tr>
<tr>
<td>SHEL</td>
<td>NL</td>
<td>X</td>
<td>NL</td>
</tr>
<tr>
<td>EST</td>
<td>NL</td>
<td>X</td>
<td>NL</td>
</tr>
</tbody>
</table>

NL= Not Listed, X= Present or Potential Use, I= Intermittent Beneficial Use

### Water Quality Objectives

The RWQCB establishes water quality objectives in the Basin Plan to ensure the protection of beneficial uses. The water quality objectives for San Diego Creek, Upper Newport Bay and the Orange County Groundwater Water Basin are shown in Table 15.

### Table 15: Water Quality Objectives

<table>
<thead>
<tr>
<th>Reach</th>
<th>TDS</th>
<th>HARD</th>
<th>Na</th>
<th>CI</th>
<th>TIN</th>
<th>SO4</th>
<th>COD</th>
</tr>
</thead>
<tbody>
<tr>
<td>San Diego Creek</td>
<td>1500</td>
<td>NL</td>
<td>NL</td>
<td>NL</td>
<td>NL</td>
<td>NL</td>
<td>NL</td>
</tr>
<tr>
<td>Upper Newport Bay</td>
<td>600</td>
<td>NL</td>
<td>NL</td>
<td>NL</td>
<td>NL</td>
<td>NL</td>
<td>NL</td>
</tr>
<tr>
<td>Orange County Groundwater Basin</td>
<td>580</td>
<td>NL</td>
<td>NL</td>
<td>3.4</td>
<td>NL</td>
<td>NL</td>
<td>NL</td>
</tr>
</tbody>
</table>

NL= Not Listed, (1) Five year moving Average Concentrations in Units of Milligrams Per Liter TDS= Total Dissolved Solids, HARD=Hardness, Na= Sodium, TIN= Total Inorganic Nitrogen, CI=Chloride, SO4=Sulfate, COD=Chemical Oxygen Demand
Project Impacts

A. Would the project violate Regional Water Quality Control Board Water Quality standards or waste discharge standards?

**Less than Significant with Mitigation:** As shown in Table 14 and Table 15, the Basin Plan identifies Beneficial Uses and Water Quality Objectives for San Diego Creek, Upper Newport Bay and the Orange County Groundwater Basin. Additionally, as shown in Table 12, Delhi Channel, San Diego Creek and Upper Newport Bay have been identified as 303 (d) Impaired Water Bodies. The following analysis evaluates if the Proposed Project would conflict with beneficial uses, and water quality objectives established in the Santa Ana Region Basin Plan and if the Proposed Project would further impair any listed 303 (d) Impaired Water Body.

**Beneficial Uses**

**San Diego Creek, Upper Newport Bay**

All of the proposed monitoring wells would eventually drain into Upper Newport Bay. Prior to emptying in Upper Newport Bay, monitoring wells, SAM-9, SAM-10, SAM-11, and SAM-13 would drain into San Diego Creek. During well construction there would be the potential that degraded surface water runoff could flow into local storm drain systems and be conveyed into San Diego Creek and Upper Newport Bay. Depending on the constituents in the surface water, the water quality for beneficial uses could be reduced. During construction and operation of the Proposed Project, Best Management Practices would be implemented to minimize degraded surface water runoff impacts. With the implementation of Mitigation Measure HWQ-1 potential construction related storm water impacts would be less than significant.

The long term operation of the monitoring wells would periodically involve water sampling and maintenance activities. During water quality sampling and maintenance activities the monitoring wells would have to be pumped. There is the potential that the effluent could contain constituents that could reduce the water quality for beneficial uses. To avoid potential beneficial use conflicts, the groundwater effluent generated during sampling and maintenance activities would be placed in a container and disposed offsite at an appropriate facility. With the implementation of Mitigation Measure HWQ-2 potential conflicts with beneficial uses would be avoided.

**Orange County Groundwater Basin**

The purpose of the Proposed Project is to evaluate the extent and nature of groundwater contamination within the South Basin area of the Orange County Groundwater Basin to help develop a remedial action plan to alleviate the contamination from the groundwater basin to allow the groundwater to be used for beneficial uses identified in the Basin Plan.
Water Quality Objectives

San Diego Creek, Upper Newport Bay

The Santa Ana Region Basin Plan identifies numerical water quality objectives for total dissolved solids (TDS) for San Diego Creek and Upper Newport Bay. The construction activities for the Proposed Project would have the potential to result in localized erosion, sediment transport and degraded surface water runoff impacts that could be discharged into San Diego Creek and Upper Newport Bay. The construction-related storm water runoff could contain elevated levels of TDS. During construction the Proposed Project would implement Best Management Practices to maintain water quality. These measures will include; minimizing water and wind erosion, establishing and implementing construction equipment delivery and storage procedures, vehicle and equipment maintenance procedures, stockpiling site requirements and solid waste management procedures. With the implementation of Mitigation Measure HWQ-1 potential construction related storm water impacts would be less than significant.

As indicated previously, the long term operation would periodically involve the discharging of well water. To avoid potential beneficial use conflicts, the groundwater effluent generated during sampling and maintenance activities would be placed in a container and disposed offsite in an appropriate facility. With the implementation of Mitigation Measure HWQ-1 and HWQ-2 potential conflicts with beneficial uses would be avoided.

Orange County Groundwater Basin

The Basin Plan establishes water quality objective of 580 mg/L for TDS for the Orange County Groundwater Basin. The construction and operation of the proposed monitoring wells would not introduce elevated levels of TDS into the groundwater basin that would exceed established water quality objectives. Therefore, the proposed project would not be in conflict with water quality objectives established for the Orange County Groundwater Basin. No mitigation measures required.

Section 303 (d) Impaired Water Bodies

The RWQCB lists Delhi Channel, Upper Newport Bay and San Diego Creek has 303 (d) impaired water bodies.

Delhi Channel

The drainage area for Monitoring Well SAM-7 would include Delhi Channel. Delhi Channel has been listed as an impaired water body for indicator bacteria. It is very unlikely that the construction of the monitoring well would introduce elevated levels of indicator bacteria in Delhi Channel. During the operation of the monitoring well effluent generated from water sampling and maintenance activities would be placed in a
container and disposed offsite. With the implementation of Mitigation Measure HWQ-1 and HWQ-2 potential adverse water quality impacts to Delhi Channel would be less than significant.

**San Diego Creek**

The drainage area for Monitoring Wells SAM-8, SAM-9, SAM-10, SAM-11, and SAM-13 would include San Diego Creek. San Diego Creek has been listed as an impaired water body for fecal coliform, nutrients, pesticides, sediment, selenium, and toxaphene. It would very unlikely that the construction of the monitoring wells would introduce elevated levels of fecal coliform, nutrients, pesticides, selenium, or toxaphene into San Diego Creek. During construction of the monitoring wells, Best Management Practices would be implemented to control sediment. During the operation of the monitoring wells effluent generated from water sampling and maintenance activities would be placed in a container and disposed of offsite. With the implementation of Mitigation Measure HWQ-1 and HWQ-2 potential adverse water quality impacts to San Diego Creek would be less than significant.

**Upper Newport Bay**

All of the proposed monitoring wells would eventually drain into Upper Newport Bay. Upper Newport Bay has been listed as an impaired water body for chlordane, copper, DDT, indicator bacteria, metals, nutrients, PCBs, pesticides, sediment toxicity and sediment. It would very unlikely that the construction of the monitoring wells would introduce elevated levels of chlordane, copper, DDT, indicator bacteria, metals, nutrients, PCBs, and pesticides. During construction of the monitoring wells Best Management Practices would be implemented to control sediment. During the operation of the monitoring wells Best Management Practices would be implemented to control sediment. During the operation of the monitoring well effluent generated from water sampling and maintenance activities would be placed in a container and disposed of offsite. With the implementation of Mitigation Measure HWQ-1 and HWQ-2 potential adverse water quality impacts to Upper Newport Bay would be less than significant.

**Mitigation Measures**

**HWQ-1:** During construction operations Best Management Practices will be used to minimize surface water runoff impacts. Such measures could include; sandbagging, manufactured swales, diversion velocity dissipaters, de-silting basins, and detention/retention ponds.

**HWQ-2:** Groundwater effluent generated during sampling and maintenance activities will be containerized and transported offsite to an appropriate disposal facility.

**B. Would the project substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level?**
City of Santa Ana
Monitoring Well SAM-7

City of Irvine
Monitoring Well SAM-8
Monitoring Well SAM-9
Monitoring Well SAM-11
Monitoring Well SAM-10
Monitoring Well SAM-13

No Impact: The purpose of the Proposed Project is to evaluate the extent and nature of groundwater contamination within the South Basin area of the Orange County Groundwater Basin to help develop remedial action plan that would remove contaminates from the groundwater basin. The implementation of the Proposed Project would help to increase ground water supplies for the OCWD service area, which includes both the City of Santa Ana and the City of Irvine. No mitigation measures required.

C. Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on or off site?

City of Santa Ana
Monitoring Well SAM-7

City of Irvine
Monitoring Well SAM-8
Monitoring Well SAM-9
Monitoring Well SAM-11
Monitoring Well SAM-10
Monitoring Well SAM-13

Less than Sign Impact: All construction activities would be confined to the well site and would not alter any existing drainage patterns. The drilling operations associated with the construction of the proposed monitoring wells would occur on paved roadway surfaces. No soils would be exposed that could be subject to water and/or wind erosion. The proposed project would be constructed in compliance with City of Irvine and City of Santa Ana Grading Ordinance. Additionally, during construction operations Best Management Practices would be implemented to minimize the potential for surface...
runoff to convey sediment to local drainage systems. With the implementation of Mitigation Measure HWQ-1 potential siltation impacts would be less than significant.

**Mitigation Measure**

Mitigation Measure HWQ-1 required.

D. Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or offsite?

**City of Santa Ana**

Monitoring Well SAM-7

**City of Irvine**

Monitoring Well SAM-8

Monitoring Well SAM-9

Monitoring Well SAM-11

Monitoring Well SAM-10

Monitoring Well SAM-13

**Less than Significant Impact:** The construction of the proposed monitoring wells would occur on existing roadways and would not increase the amount of impervious surfaces. Existing rates of surface water runoff and flood risks would not increase over the current condition.

E. Would the project create or contribute runoff which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?

**Construction Surface Water Management**

**City of Santa Ana**

Monitoring Well SAM-7

**City of Irvine**

Monitoring Well SAM-8

Monitoring Well SAM-9

Monitoring Well SAM-10

Monitoring Well SAM-11

Monitoring Well SAM-13
**Less than Significant with Mitigation:** The Proposed Project would have the potential to generate degraded construction related surface water runoff and long term surface water runoff impacts.

*Construction Storm Water Runoff*

**City of Santa Ana**

Monitoring Well SAM-7

**City of Irvine**

Monitoring Well SAM-8

Monitoring Well SAM-9

Monitoring Well SAM-11

Monitoring Well SAM-13

Onsite construction activities associated with the Proposed Project could generate degraded surface water runoff from the project site into local drainage facilities. The proposed project would be constructed in compliance with City of Irvine and City of Santa Ana Grading Ordinance. To prevent degraded storm water runoff pollutants from entering into existing drainage systems, Best Management Practices would be implemented during construction operations to control the surface water runoff and to minimize the potential for it to be conveyed into onsite or offsite drainage systems. With the implementation of Mitigation Measure HWQ-1 potential degraded surface water runoff impacts would be reduced to a less than significant level.

*Long Term Surface Water Management*

**City of Santa Ana**

Monitoring Well SAM-7

**Less than Significant Impact:** Proposed Monitoring Well SAM-7 is located within the City of Santa Ana and would be required to comply with the County of Orange 4th term Municipal NPDES Permit, as implemented by the City of Santa Ana. At each well site a maximum of 800 square feet of existing roadways surfaces would be replaced. The amount of replacement impervious surfaces would not meet the criteria for a Priority Project under the County of Orange 4th term Municipal NPDES Permit. Because the project would not involve any discretionary actions from the City of Santa Ana, the Proposed Project would not require preparation of Non-Priority Project Water Quality Plan. Long term surface water runoff impacts would be less than significant. No mitigation measures required.
City of Irvine
Monitoring Well SAM-8
Monitoring Well SAM-9
Monitoring Well SAM-10
Monitoring Well SAM-11
Monitoring Well SAM-13

Less than Significant Impact: Proposed Monitoring Wells SAM-8, SAM-9, SAM-10, SAM-11 and SAM-13 are located within the City of Irvine and would be required to comply with the County of Orange 4th term Municipal NPDES Permit, as implemented by the City of Irvine. At each well site a maximum of 800 square feet of existing roadways surfaces would be replaced. The amount of replacement impervious surfaces would not meet the criteria for a Priority Project under the County of Orange 4th term Municipal NPDES Permit. Because the project would not involve any discretionary actions from the City of Irvine, the Project would not require preparation of Non-Priority Project Water Quality Plan. Long term surface water runoff impacts would be less than significant. No mitigation measures required.

Mitigation Measure
Mitigation Measure HWQ-1 required.

F. Would the project otherwise degrade water quality?

City of Santa Ana
Monitoring Well SAM-7

City of Irvine
Monitoring Well SAM-8
Monitoring Well SAM-9
Monitoring Well SAM-11
Monitoring Well SAM-10
Monitoring Well SAM-13

Less than Significant Impact: The purpose of the Proposed Project is to evaluate the extent and nature of groundwater contamination within the South Basin area of the Orange County Groundwater Basin to help develop remedial action plan that would remove contaminates from the groundwater basin. Mitigation measures HWQ-1 and HWQ-2 have been incorporated into the Proposed Project to maintain water quality during construction and operation of the project.
G. Would the project place housing within a 100-year floodplain, as mapped on a federal Flood Hazard Boundary or Flood insurance Rate map or other flood hazard delineation map?

*City of Santa Ana*
Monitoring Well SAM-7

*City of Irvine*
Monitoring Well SAM-8
Monitoring Well SAM-9
Monitoring Well SAM-11
Monitoring Well SAM-10
Monitoring Well SAM-13

**No Impact:** According to the City of Santa Ana General Plan and City of Irvine General Plan the proposed well sites are not within a 100-year floodplain. No mitigation measures required.

H. Would the project place within a 100-year floodplain structures which impede or redirect flows?

*City of Santa Ana*
Monitoring Well SAM-7

*City of Irvine*
Monitoring Well SAM-8
Monitoring Well SAM-9
Monitoring Well SAM-10
Monitoring Well SAM-11
Monitoring Well SAM-13

**No Impact:** The proposed well sites are not within a 100-year floodplain. Additionally, the proposed monitoring wells would be constructed at grade and would not redirect or impede any surface water flows. No mitigation measures required.

I. Would the project expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?

*City of Santa Ana*
Monitoring Well SAM-7
City of Irvine
Monitoring Well SAM-8
Monitoring Well SAM-9
Monitoring Well SAM-10
Monitoring Well SAM-11
Monitoring Well SAM-13

No Impact: The Proposed Project involves the construction of below ground monitoring wells and would not expose people or structures to flood risks. No mitigation measures required.

J. Could the project site be inundated by seiche, tsunami, or mudflow?

City of Santa Ana
Monitoring Well SAM-7

City of Irvine
Monitoring Well SAM-8
Monitoring Well SAM-9
Monitoring Well SAM-10
Monitoring Well SAM-11
Monitoring Well SAM-13

No Impact: The City of Santa Ana General Plan and the City of Irvine General Plan both indicate that the proposed well sites would not be located within a tsunami run up area and would not be within the vicinity of any impounded water that could be subject to potential seiche impacts. Additionally, there are no slopes within the vicinity of the well sites that would pose mudflow risks. No mitigation measures required.

4.10 Land Use/Planning
A. Would the project physically divide an established community?

City of Santa Ana
Monitoring Well SAM-7

City of Irvine
Monitoring Well SAM-8
Monitoring Well SAM-9
Monitoring Well SAM-10
Monitoring Well SAM-11
Monitoring Well SAM-13

Less than Significant Impact: The proposed monitoring wells would be constructed and operated on public property within the City of Irvine and the City of Santa Ana. OCWD has coordinated with both the City of Santa Ana and the City of Irvine on the proposed well sites and have determined that the long term operation of the monitoring wells would not result in adverse land use compatibility impacts. The construction operations for the Proposed Project would result in short term construction related impacts. The impacts would be for a short period of time and mitigation measures would be implemented to reduce construction related impacts to a less than significant level.

B. Would the project be in conflict with any applicable land use plan, policy or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect?

City of Santa Ana

Monitoring Well SAM-7

No Impact: The City of Santa Ana Municipal Cope Chapter 39, Article IV identifies the permitting requirements for wells proposed in the City of Santa Ana. The Municipal Code requires coordination with the County of Orange Health Care Agency and compliance with State Department of Water Resources well siting requirements. Coordination with the County of Orange Health Care Agency and compliance with State Department of Water Resources well siting requirements would avoid potential land use conflicts. No mitigation measures required.

City of Irvine

Monitoring Well SAM-8
Monitoring Well SAM-9
Monitoring Well SAM-10
Monitoring Well SAM-11
Monitoring Well SAM-13

No Impact: The City of Irvine Municipal Code in Title 6, Division 4, Chapter 2, and Article B identifies the permitting requirements for wells proposed in the City of Irvine. The Municipal Code requires coordination with the County of Orange Health Care Agency and compliance with State Department of Water Resources well siting requirements. Coordination with the County of Orange Health Care Agency and compliance with State Department of Water Resources well siting requirements would avoid potential land use conflicts. No mitigation measures required.
C. Would the project be in conflict with any applicable habitat conservation plan or natural community conservation plan?

*City of Santa Ana*
Monitoring Well SAM-7

*City of Irvine*
Monitoring Well SAM-8
Monitoring Well SAM-9
Monitoring Well SAM-10
Monitoring Well SAM-11
Monitoring Well SAM-13

**No Impact:** The proposed well sites are not included within an approved habitat conservation plan or natural community conservation plan. No mitigation measures required.

4.11 Mineral Resources

A. Would the project result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use?

*City of Santa Ana*
Monitoring Well SAM-7

*City of Irvine*
Monitoring Well SAM-8
Monitoring Well SAM-9
Monitoring Well SAM-10
Monitoring Well SAM-11
Monitoring Well SAM-13

**No Impact:** According to the City of Santa Ana and City of Irvine General Plans the lands where the proposed monitoring wells would be constructed are not known to contain locally or regionally important mineral deposits. No mitigation measures required.

4.12 Noise

**Background**
A decibel (dB) is a unit of measurement that indicates the relative intensity of a sound. The zero point on the dB scale is based on the lowest sound level that a healthy, unimpaired human ear can detect. Changes of 3 dB or fewer are only perceptible in laboratory environments. An increase of 10 dB represents a 10-fold increase in acoustic energy, while 20 dB is 100 times more intense, and 30 dB is 1,000 times more intense. Each 10 dB increase in sound level is perceived as approximately a doubling of loudness.

**Regulatory Programs**

**Federal Regulations**

The Occupational Safety and Health Administration (OSHA) agency limits noise exposure of workers to 90 dB L_{eq} or less over 8 continuous hours, or 105 dB L_{eq} or less over 1 continuous hour.

**State Office of Noise Control Standards**

The California Office of Noise Control has set long term land use compatibility noise standards for different types of land uses and has encouraged local jurisdictions to adopt them. The Proposed Project would not result in long term noise impacts. Therefore, the State Office of Noise Control long term noise standards would not be applicable.

**Local Regulations**

The City of Santa Ana and the City of Irvine establishes the following exterior and interior noise standards, exemptions and special provisions for the regulation of noise.

**City of Santa Ana**

**Table 16: City of Santa Ana Exterior Noise Level Standards**

<table>
<thead>
<tr>
<th>Land Use</th>
<th>7:00 a.m. to 10:00 p.m.</th>
<th>10:00 p.m. to 7:00 a.m.</th>
</tr>
</thead>
<tbody>
<tr>
<td>All land Uses</td>
<td>55 dBA</td>
<td>50 dBA</td>
</tr>
</tbody>
</table>

**Table 17: City of Santa Ana Interior Noise Level Standards**

<table>
<thead>
<tr>
<th>Land Use</th>
<th>7:00 a.m. to 10:00 p.m.</th>
<th>10:00 p.m. to 7:00 a.m.</th>
</tr>
</thead>
<tbody>
<tr>
<td>All land Uses</td>
<td>55 dBA</td>
<td>45 dBA</td>
</tr>
</tbody>
</table>

**Exemption to Noise Ordinance**

The City of Santa Ordinance identifies several activities that would be exempted from City’s exterior and interior noise standards. The following applicable activities are exempt from the above noise standards.
- Noise sources associated with construction, repair, remodeling, demolition or grading of any real property between 7:00 a.m. and 6:30 p.m. on weekdays and between 8:00 am and 6:00 pm on Saturday.

**Schools, Hospitals and Churches Special Provisions**

It shall be unlawful for any person to create any noise which causes the noise level at any school, hospital or church while the same is in use to exceed the exterior noise limits prescribed for the assigned noise zone in which the school, hospital or church is located, or which noise level unreasonably interferes with the use of such institutions or which unreasonably disturbs patients in the hospital, provided conspicuous signs are displayed in three separate locations within one-tenth of a mile of the institution indicating the presence of a school, church or hospital.

**City of Irvine**

**Table 18: City of Irvine Exterior Noise Level Standards**

<table>
<thead>
<tr>
<th>Land Use</th>
<th>7:00 a.m. to 10:00 p.m.</th>
<th>10:00 p.m. to 7:00 a.m.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential, Schools, Churches, Hospitals, Libraries</td>
<td>55 dBA</td>
<td>50 dBA</td>
</tr>
<tr>
<td>Professional Office</td>
<td>55 dBA</td>
<td>55 dBA</td>
</tr>
<tr>
<td>Commercial</td>
<td>60 dBA</td>
<td>60 dBA</td>
</tr>
<tr>
<td>Industrial</td>
<td>70 dBA</td>
<td>70 dBA</td>
</tr>
</tbody>
</table>

**Table 19: City of Irvine Interior Noise Level Standards**

<table>
<thead>
<tr>
<th>Land Use</th>
<th>7:00 a.m. to 10:00 p.m.</th>
<th>10:00 p.m. to 7:00 a.m.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential, Schools, Churches, Hospitals, Libraries</td>
<td>55 dBA</td>
<td>50 dBA</td>
</tr>
<tr>
<td>Professional Office I</td>
<td>55 dBA</td>
<td>60 dBA</td>
</tr>
<tr>
<td>Commercial</td>
<td>55 dBA</td>
<td>60 dBA</td>
</tr>
<tr>
<td>Industrial</td>
<td>55 dBA</td>
<td>60 dBA</td>
</tr>
</tbody>
</table>

**Exemptions to Noise Ordinance Standards**

The City of Irvine Noise Ordinance identifies several activities that would be exempted from City’s exterior and interior noise standards. The following applicable activities would be exempted from the above noise standards.

- Construction activities that occur between the hours of 7:00 a.m.–7:00 p.m., Monday through Friday, and 9:00 a.m.–6:00 p.m. on Saturdays are exempt from
noise restrictions. No construction activities shall be permitted outside of these hours or on Sundays and federal holidays unless a temporary waiver is granted by the Chief Building Official.

- Maintenance of real property operations may exceed the noise standards between 7:00 a.m. and 7:00 p.m. on any day except Sundays, or between 9:00 a.m. and 6:00 p.m. on Sundays or a federal holiday.

Project Impacts

A. Would the project expose persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

This impact discussion analyzes the potential for project construction noise and operational noise to cause an exposure of persons to or generation of noise levels in excess of City of Santa Ana and City of Irvine noise standards. The noise levels in the study area would be influenced by well construction activities and from on-going well maintenance activities.

Construction Equipment Noise Levels

In order to determine the anticipated noise impacts created from well construction equipment, noise measurements were taken of various pieces of equipment during construction of OCWD’s Monitoring Well SAR-11. The results of the measured reference noise levels are shown below in Table 20.

<table>
<thead>
<tr>
<th>Equipment</th>
<th>Actual Measured $L_{\text{omax}}$ @ 50 feet$^4$ (dBA, slow)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auger Drill Rig</td>
<td>77</td>
</tr>
<tr>
<td>Backhoe</td>
<td>78</td>
</tr>
<tr>
<td>Compressor (air)</td>
<td>77</td>
</tr>
<tr>
<td>Concrete Mixer Truck</td>
<td>79</td>
</tr>
<tr>
<td>Concrete Pump</td>
<td>81</td>
</tr>
<tr>
<td>Crane</td>
<td>81</td>
</tr>
<tr>
<td>Drill Rig Truck</td>
<td>79</td>
</tr>
<tr>
<td>Dozer</td>
<td>82</td>
</tr>
<tr>
<td>Dump Truck</td>
<td>76</td>
</tr>
<tr>
<td>Excavator</td>
<td>81</td>
</tr>
<tr>
<td>Flat Bed Truck</td>
<td>74</td>
</tr>
<tr>
<td>Front End Loader</td>
<td>79</td>
</tr>
<tr>
<td>Generator</td>
<td>81</td>
</tr>
<tr>
<td>Grader</td>
<td>N/A</td>
</tr>
<tr>
<td>Pumps</td>
<td>81</td>
</tr>
<tr>
<td>Welder/Torch</td>
<td>74</td>
</tr>
</tbody>
</table>
The nosiest piece of equipment that would be involved with the construction and maintenance activities for the Proposed Project would be a crane. Table 20 shows that the crane would generate a noise level of 81 dBA. This level of noise would not exceed the OSHA noise standard of 90 dB over an eight hour period.

**City of Santa Ana**

*Monitoring Well SAM-7*

**Less than Significant Impact:** The City of Santa Ana Noise Ordinance establishes an indoor and outdoor noise standard of 55 dBA for the well site locations. Based on the noise generated from the crane up to 1,200 feet from the well site would be exposed to noise levels above the 55 dBA noise standard.

Monitoring Well SAM-7 would be situated within mixed use development composed of office, commercial and residential land uses. Within the 1,200 foot noise impact area there are no schools or hospitals. All of the construction and maintenance activities at Monitoring Well SAM-7 would occur during the day when construction activities would be exempted from the City of Santa Ana Noise Ordinance. Potential noise impacts would be less than significant. No mitigation measures required.

**City of Irvine**

*Monitoring Well SAM-8*

*Monitoring Well SAM-9*

*Monitoring Well SAM-10*

*Monitoring Well SAM-11*

*Monitoring Well SAM-13*

**Less than Significant Impact:** The proposed monitoring wells in the City of Irvine would be located in areas that contain industrial and professional office land uses. For purposes of analysis the noise standard for professional office land uses at 55 dBA was used as worst case to measure compliance with the City of Irvine Noise Ordinance. Within the 1,200 foot noise impact area from Monitoring Wells SAM-8, SAM-9, SAM-10, SAM-11and SAM-13 there are no sensitive receptors. All of the construction and maintenance activities occurring at Monitoring Wells SAM-8, SAM-9, SAM-10, SAM-11and SAM-13 would occur during the day when construction activities would be exempted from the City of Irvine Noise Ordinance. Potential noise impacts would be less than significant. No mitigation measures required.

**B. Would the project result in a permanent increase in ambient noise levels in the project vicinity above levels existing without the project?**
City Santa Ana
Monitoring Well SAM-7

City of Irvine
Monitoring Well SAM-8
Monitoring Well SAM-9
Monitoring Well SAM-10
Monitoring Well SAM-11
Monitoring Well SAM-13

Less than Significant Impact: The proposed monitoring wells would be underground and would be passive in operation and would not emit noise impacts. Potential noise impacts would be less than significant. No mitigation measures required.

C. Would the project result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

City Santa Ana
Monitoring Well SAM-7

City of Irvine
Monitoring Well SAM-8
Monitoring Well SAM-9
Monitoring Well SAM-10
Monitoring Well SAM-11
Monitoring Well SAM-13

Less than Significant Impact: The construction operations associated with the proposed monitoring wells would temporarily increase ambient noise levels within the project area. All of the construction activity would occur during day when the construction noise would be exempt under the City of Santa Ana Noise Ordinance and the City of Irvine Noise Ordinance. Potential noise impacts would be less than significant. No mitigation measures required.

D. For a project located within an airport land use plan or where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?
City Santa Ana

Monitoring Well SAM-7

Less than Significant Impact: The closest airport to the proposed monitoring wells would be John Wayne Airport. All of the proposed monitoring wells are located outside from the John Wayne Airport Noise Impact zones. Potential noise impacts would be less than significant. No mitigation measures required.

City of Irvine

Monitoring Well SAM-8
Monitoring Well SAM-9
Monitoring Well SAM-10
Monitoring Well SAM-11
Monitoring Well SAM-13

Less than Significant: The closest airport to the proposed monitoring wells would be John Wayne Airport. All of the proposed monitoring wells except for SAM-10 are located within the John Wayne Airport Noise Impact zones and would be subject to elevated noise levels. The Proposed Project does not involve the construction of any noise sensitive land uses that would be adversely impacted by the elevated noise levels.

E. For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

City Santa Ana

Monitoring Well SAM-7

City of Irvine

Monitoring Well SAM-8
Monitoring Well SAM-9
Monitoring Well SAM-10
Monitoring Well SAM-11
Monitoring Well SAM-13

No Impact: There is not a private air strip located within the study area. Therefore, the study area would be adversely impacted by aircraft noise from a private air strip.

F. Would the project cause exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels?
California Administrative Code 15000, Title 14 requires that all state and local agencies implement the California Environmental Quality Act (CEQA) Guidelines, which require an exposure analysis of persons to excessive ground-borne vibration impacts. Presently, the State of California and the City of Santa Ana and the City of Irvine do not have a threshold to measure vibration impacts. Caltrans has issued a Transportation and Construction Induced Vibration Guidance which establishes numeric thresholds for construction related and transportation related vibration impacts. The Guidance Manual determines that human response becomes distinctly perceptible at 0.04 inch per second for continuous sources and 0.25 inch per second for transient sources.

Construction activity can result in varying degrees of ground vibration, depending on the equipment used on the site. Operation of construction equipment causes ground vibrations that spread through the ground and diminish in strength with distance. Buildings in the vicinity of the construction site respond to these vibrations with varying results ranging from no perceptible effects at the low levels to slight damage at the highest levels. Table 21 gives approximate vibration levels for particular construction activities for a wide range of soil conditions.

### Table 21: Vibration Source Levels for Construction Equipment

<table>
<thead>
<tr>
<th>Equipment</th>
<th>Peak Particle Velocity (inches/second)</th>
<th>Approximate Vibration Level (L) at 25 feet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pile driver (impact)</td>
<td>1.518 (upper range) 0.644 (typical)</td>
<td>112 104</td>
</tr>
<tr>
<td>Pile driver (sonic)</td>
<td>0.734 upper range 0.170 typical</td>
<td>105 93</td>
</tr>
<tr>
<td>Clam shovel drop (slurry wall)</td>
<td>0.202</td>
<td>94</td>
</tr>
<tr>
<td>Hydromel (slurry wall)</td>
<td>0.008 in soil 0.017 in rock</td>
<td>66 75</td>
</tr>
<tr>
<td>Vibratory Roller</td>
<td>0.210</td>
<td>94</td>
</tr>
<tr>
<td>Hoe Ram</td>
<td>0.089</td>
<td>87</td>
</tr>
<tr>
<td>Large bulldozer</td>
<td>0.089</td>
<td>87</td>
</tr>
<tr>
<td>Caisson drill</td>
<td>0.089</td>
<td>87</td>
</tr>
<tr>
<td>Loaded trucks</td>
<td>0.076</td>
<td>86</td>
</tr>
<tr>
<td>Jackhammer</td>
<td>0.035</td>
<td>79</td>
</tr>
<tr>
<td>Small bulldozer</td>
<td>0.003</td>
<td>58</td>
</tr>
</tbody>
</table>

City Santa Ana
Monitoring Well SAM-7

City of Irvine
Monitoring Well SAM-8
Monitoring Well SAM-9
Monitoring Well SAM-10
Monitoring Well SAM-11
Monitoring Well SAM-13

Less than Significant Impact: A vibration impact would be considered significant if it involves any vibration impacts in excess of 0.25 inch per second peak particle velocity (PPV) for transient sources or in excess of 0.04 inch per second PPV for continuous sources at a nearby sensitive receptor. The monitoring wells would be housed in underground vaults and there would be no vibration impacts associated with the operation of the monitoring wells. Therefore, there would be no long term vibration impacts. The construction activities, water sampling activities and maintenance activities associated with each well are considered a transient source for vibration impacts. Of the equipment listed in Table 21, the caisson drill, which is similar to a drill rig, would be the piece of equipment that would have the highest vibration level at 0.089 inch per second PPV at 25 feet. Table 22 shows the closest structure to the proposed monitoring well sites and the estimated vibration impact. As shown in Table 22, the vibration level would be below the Caltrans .0250 inch per second threshold of perception for transient sources. Therefore, potential vibration impacts would be less than significant. No mitigation measures required.

Table 22: Vibration Impacts

<table>
<thead>
<tr>
<th>Monitoring Well</th>
<th>Distance to Nearest Sensitive Receptor (feet)</th>
<th>Vibration Levels at Nearest Sensitive Receptor (inches /second)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAM-7</td>
<td>50</td>
<td>.178</td>
</tr>
<tr>
<td>SAM-8</td>
<td>50</td>
<td>.178</td>
</tr>
<tr>
<td>SAM-9</td>
<td>120</td>
<td>.016</td>
</tr>
<tr>
<td>SAM-10</td>
<td>50</td>
<td>.178</td>
</tr>
<tr>
<td>SAM-11</td>
<td>120</td>
<td>.016</td>
</tr>
<tr>
<td>SAM-13</td>
<td>120</td>
<td>.016</td>
</tr>
</tbody>
</table>
4.13 Population/Housing

A. Would the project induce substantial population growth in an area, either directly or indirectly?

City Santa Ana
Monitoring Well SAM-7

City of Irvine
Monitoring Well SAM-8
Monitoring Well SAM-9
Monitoring Well SAM-10
Monitoring Well SAM-11
Monitoring Well SAM-13

No Impact: The Proposed Project would not extend new infrastructure into any undeveloped area and would not provide underground water supplies to any undeveloped areas. Implementation of the Proposed Project would not induce any substantial population growth into the study area. No mitigation measures required.

B. Would the project displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

City Santa Ana
Monitoring Well SAM-7

City of Irvine
Monitoring Well SAM-8
Monitoring Well SAM-9
Monitoring Well SAM-10
Monitoring Well SAM-11
Monitoring Well SAM-13

No Impact: The implementation of the Proposed Project would not displace any existing housing and therefore would not require the construction of any replacement housing. No mitigation measures are required.

C. Would the project displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?


**City Santa Ana**
Monitoring Well SAM-7

**City of Irvine**
Monitoring Well SAM-8
Monitoring Well SAM-9
Monitoring Well SAM-10
Monitoring Well SAM-11
Monitoring Well SAM-13

**No Impact:** The implementation of the Proposed Project would not displace any households and therefore would not require the construction of any replacement housing. No mitigation measures required.

### 4.14 Public Services

**A.** Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for fire protection police protection, schools, parks or other public facilities.

**City Santa Ana**
Monitoring Well SAM-7

**City of Irvine**
Monitoring Well SAM-8
Monitoring Well SAM-9
Monitoring Well SAM-10
Monitoring Well SAM-11
Monitoring Well SAM-13

**No Impact:** The Proposed Project would be operated and maintained by OCWD and would not increase the demand for public services over the current level of demand and would not require the construction of any new governmental facilities. No mitigation measures required.
4.15 Recreation

A. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

City Santa Ana
Monitoring Well SAM-7

City of Irvine
Monitoring Well SAM-8
Monitoring Well SAM-9
Monitoring Well SAM-10
Monitoring Well SAM-11
Monitoring Well SAM-13

No Impact. The implementation Proposed Project would not involve any activities that would increase the use of existing neighborhood parks or recreation facilities. No mitigation measures required.

B. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

City Santa Ana
Monitoring Well SAM-7

City of Irvine
Monitoring Well SAM-8
Monitoring Well SAM-9
Monitoring Well SAM-10
Monitoring Well SAM-11
Monitoring Well SAM-13

No Impact. The Proposed Project does not propose new recreation facilities or proposes to expand existing recreation facilities. No mitigation measures required.

4.16 Transportation/Traffic

A. Would the project be in conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit
and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrians and bicycle paths.

City Santa Ana

Monitoring Well SAM-7

City of Irvine

Monitoring Well SAM-8
Monitoring Well SAM-9
Monitoring Well SAM-10
Monitoring Well SAM-11
Monitoring Well SAM-13

Less than Significant Impact with Mitigation: The construction operations for the monitoring wells would involve the mobilization and demobilization of construction equipment which if occurring during peak traffic periods could result in short-term traffic congestion impacts along some roadway segments and intersections within the study area circulation system. To avoid potential short-term traffic congestion impacts, the mobilization and demobilization activities would occur during non-peak traffic periods.

OCWD periodically would visit each well site and collect water samples. Additionally, every three to five years OCWD would conduct maintenance activities to redevelop the wells. The operation of the Proposed Project would generate a minimal amount of traffic trips and would not reduce the level of service of any project area roadway segment or intersection. To avoid potential short-term traffic congestion impacts, water sampling activities and well redevelopment activities would occur during non-peak traffic periods. With the implementation of Mitigation Measure T-1 potential short-term traffic impacts would be less than significant.

Mitigation Measure

T-1: Construction equipment mobilization and demobilization and water sampling activities and well redevelopment activities will occur outside of peak traffic periods.

B. Would the project be in conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards and travel demand measures, or other standards established by County congestion management agency for designated roads and highways.
City Santa Ana
Monitoring Well SAM-7  

City of Irvine
Monitoring Well SAM-8  
Monitoring Well SAM-9  
Monitoring Well SAM-10  
Monitoring Well SAM-11  
Monitoring Well SAM-13

Less than Significant Impact: The Orange County Transportation Agency is responsible for the implementation of the County Congestion Management Program (CMP). The CMP is designed to reduce traffic congestion and to provide a mechanism for the coordination of land use and transportation decisions. The CMP identifies deficit highway and intersections in the County of Orange Circulation System and identifies planned performance standards. When a project generates more than 100 peak hour traffic trips along a CMP highway or 51 or more vehicle trips through a CMP intersection, the project is required to prepare a traffic impact study to evaluate the impacts on the CMP highway and intersection. If the amount of traffic trips generated by the project does not require the preparation of a traffic impact study, the traffic would be considered to have a de minimis impact on the CMP circulation system.

There would be the potential that access to the proposed well sites could require travel along CMP highways and intersections. However, the Proposed Project would not generate 100 peak hour trips during construction and operation and would also not generate 51 trips through a CMP intersection. Therefore, the Proposed Project would not require preparation of a traffic impact study and would have a deminimis impact on the CMP circulation system. No mitigation measures required.

C. Would the project result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?

City Santa Ana
Monitoring Well SAM-7  

City of Irvine
Monitoring Well SAM-8  
Monitoring Well SAM-9  
Monitoring Well SAM-10
Monitoring Well SAM-11
Monitoring Well SAM-13

No Impact: The closest airport facility to the project area would be John Wayne Airport. The AELUP for the airport indicates that the proposed monitoring well sites are outside of the AELUP Height Restriction Zone. Additionally, the proposed monitoring wells would be underground and would not encroach into any navigable air space and would not cause a change air traffic patterns that would increase aviation safety risks. No mitigation measures required.

D. Would the project increase hazards to a design feature or incompatible uses or equipment?

City Santa Ana
Monitoring Well SAM-7

City of Irvine
Monitoring Well SAM-8
Monitoring Well SAM-9
Monitoring Well SAM-10
Monitoring Well SAM-11
Monitoring Well SAM-13

Less than Significant Impact with Mitigation: The long term operation of the Proposed Project would generate minimal amount of traffic trips. The construction of the monitoring wells would require the mobilization and demobilization of construction equipment and the operation of heavy construction equipment within the study area. Based on an as needed basis, traffic control measure such as flagman to direct the equipment into the well sites and to keep pedestrians away from the work area would be employed. With the implementation of Mitigation Measure T-2 potential traffic hazards would be reduced to a less than significant level.

Mitigation Measures

T-2: Prior to mobilization and demobilization of construction equipment, OCWD will coordinate with City of Irvine or City of Santa Ana on the need for temporary traffic control measures.

E. Would the project result in inadequate emergency access?

City Santa Ana
Monitoring Well SAM-7
City of Irvine
Monitoring Well SAM-8
Monitoring Well SAM-9
Monitoring Well SAM-10
Monitoring Well SAM-11
Monitoring Well SAM-13

Less than Significant Impact: The construction and operation of the Proposed Project would not require the closure of any streets that would impede emergency access. During construction activities adequate emergency access would be maintained at all times. No mitigation measures required.

F. Would the project be in conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities or otherwise decrease the performance or safety of such facilities?

City Santa Ana
Monitoring Well SAM-7

City of Irvine
Monitoring Well SAM-8
Monitoring Well SAM-9
Monitoring Well SAM-10
Monitoring Well SAM-11
Monitoring Well SAM-13

Less than Significant Impact with Mitigation: The construction and operation of the Proposed Project would not require closure of public transportation, bicycle or pedestrian circulation systems. The mobilization and demobilization of heavy construction equipment and construction activities at the well sites could result in the temporary closure and detouring of pedestrian sidewalks and/or bike lanes near the work area for safety reasons. The closure would be temporary and an alternative pedestrian access would be provided. With the implementation of Mitigation Measure T-2 potential conflicts with mass transit, pedestrian and bicycle facilities would be reduced to a less than significant level.

Mitigation Measure
Mitigation Measure T-2 required.
4.17 Utilities/Service Systems

A. Would the project exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

City Santa Ana
Monitoring Well SAM-7

City of Irvine
Monitoring Well SAM-8
Monitoring Well SAM-9
Monitoring Well SAM-10
Monitoring Well SAM-11
Monitoring Well SAM-13

No Impact. The construction and operation of the Proposed Project would not generate any wastewater flows. Therefore, implementation of the Proposed Project would not exceed any treatment requirements established by the RWQCB. No mitigation measures required.

B. Would the project require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

City Santa Ana
Monitoring Well SAM-7

City of Irvine
Monitoring Well SAM-8
Monitoring Well SAM-9
Monitoring Well SAM-10
Monitoring Well SAM-11
Monitoring Well SAM-13

Less than Significant Impact with Mitigation: The Proposed Project involves the construction of six new monitoring wells. As identified in the initial study, mitigation measures have been incorporated into the project to reduce potentially significant impacts to the environment to a less than significant level.
C. Would the project require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

*City Santa Ana*

Monitoring Well SAM-7

*City of Irvine*

Monitoring Well SAM-8
Monitoring Well SAM-9
Monitoring Well SAM-10
Monitoring Well SAM-11
Monitoring Well SAM-13

**No Impact:** The Proposed Project would not involve construction of new storm water drainage facilities or the expansion of existing storm water drainage facilities. No mitigation measures required.

D. Are sufficient water supplies available to serve the project from existing entitlements and resources or new or expanded entitlements needed?

*City Santa Ana*

Monitoring Well SAM-7

*City of Irvine*

Monitoring Well SAM-8
Monitoring Well SAM-9
Monitoring Well SAM-10
Monitoring Well SAM-11
Monitoring Well SAM-13

**No Impact.** The purpose of the Proposed Project is to evaluate the extent and nature of groundwater contamination within the South Basin area of the Orange County Groundwater Basin to help develop remedial action plan that would remove contaminates from the groundwater basin. The operation of the Proposed Project would not require ongoing water supplies or service. No mitigation measures required.

E. Would the project result in the determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to
serve the project’s projected demand in addition to the providers existing commitments.

**City Santa Ana**
Monitoring Well SAM-7

**City of Irvine**
Monitoring Well SAM-8
Monitoring Well SAM-9
Monitoring Well SAM-10
Monitoring Well SAM-11
Monitoring Well SAM-13

**No Impact:** The Proposed Project does not include any plans to construct wastewater treatment facilities. Therefore, the implementation of the Proposed Project would not have any impact on the capacity of wastewater treatment providers to the area. No mitigation measures required.

**F. Is the project served by a landfill with sufficient permitted capacity to accommodate the project solid waste disposal need?**

**City Santa Ana**
Monitoring Well SAM-7

**City of Irvine**
Monitoring Well SAM-8
Monitoring Well SAM-9
Monitoring Well SAM-10
Monitoring Well SAM-11
Monitoring Well SAM-13

**Less than Significant Impact:** The operation of the Proposed Project would not require ongoing solid waste disposal service. Construction operations for the project would generate minimal amounts of solid waste. The solid waste would be disposed of in the Brea Olinda Landfill which accepts up to 8,000 tons per day. The Proposed Project would implement Best Management Practices that would include solid waste management that would recycle appropriate materials. The amount of solid waste generated from proposed project would have a de minimis impact on the capacity of the Brea Olinda Landfill. No mitigation measures required.
G. Would the project comply with federal, state and local statutes and regulations related to solid waste?

*City Santa Ana*
Monitoring Well SAM-7

*City of Irvine*
Monitoring Well SAM-8
Monitoring Well SAM-9
Monitoring Well SAM-10
Monitoring Well SAM-11
Monitoring Well SAM-13

**Less than Significant Impact:** The Proposed Project would not involve any activities that would be in conflict with federal, state and local statutes and regulations related to solid waste. All waste generated from the construction and operation of the Proposed Project would be disposed of in accordance with local, state and federal laws. No mitigation measures required.

**Mandatory Findings of Significance**

A. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory.

**Less than Significant with Mitigation:** Implementation of the Proposed Project would not result in direct impacts to sensitive plans, wildlife or habitat. The Proposed Project would not result in any impacts to any known cultural resources and the potential to encounter unknown cultural resources would be very low. Mitigation Measures have been incorporated into the Proposed Project to avoid significant impacts to unknown cultural resources that might be present.

B. Does the project have impacts that are individually limited but cumulatively considerable?

**Less than Significant Impact with Mitigation:** The Proposed Project would comply with local and regional planning programs, applicable codes and ordinances, State and Federal laws and regulations and project specific mitigation measures. Compliance with these programs would reduce the Proposed Project’s incremental contributions to cumulative impacts to a less than significant level.
C. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

Less than Significant Impact with Mitigation: The Proposed Project would comply with local and regional planning programs, applicable codes, and ordinances, State and Federal laws and regulations and project specific mitigation measures to insure that long term operation activities and short term construction activities associated with the proposed project would not result in direct, or indirect adverse impacts to human beings.
SECTION 5.0 REFERENCES

Bowler, P.A. and M.E. Elvin, 2003The Vascular Plant Checklist for the University of California Natural Reserve System San Joaquin Marsh

California Department Fish and Game Natural Diversity Database, Accessed 2015

California Department of Transportation Scenic Highways Program Web Site Accessed, 2016


California Geologic Survey Seismic Hazard Zone Map Tustin, Orange Quadrangle, Accessed October 2016.


California Native Plant Society Inventory of Rare and Endangered Plants Database, Accessed 2016

City Irvine General Plan, Site Access 2016.


City of Santa Ana General Plan Site Access October 2016.


February 14, 2017

Mr. David Bolin  
Principal Hydrogeologist  
Orange County Water District  
18700 Ward Street  
Fountain Valley, California 92708

Subject: Database Management and Updates, Orange County Water District, South Basin Project

Dear David:

Following up on your request, aquilogic has prepared this estimated budget for management and updates to the database for the Orange County Water District’s (OCWDs) South Basin Project. Since 2015, aquilogic has kept the database current by entering groundwater monitoring data for 24 sites, as well as incorporating data from other site assessments at those sites. The database currently includes data from all reports that were available on Geotracker and Envirostor as of January 2017. It is anticipated that this 2017 scope of work will be completed by March 2018.

Based on our observation of the frequency of monitoring events at these sites, we estimate that we will need to enter data from approximately 58 monitoring reports at the 24 sites. However, due to the irregular groundwater sampling intervals and/or reporting of groundwater sampling results to regulatory agencies by the responsible parties, the actual number of groundwater monitoring datasets to be included in the database updates cannot be definitively predicted. We are also anticipating the inclusion of data from up to 10 supplemental site assessments. Included in our estimate are data hosting services for the EQuIS database through March 2018, as well as costs associated with access to the database via the internet by other consultants working for the OCWD.

The estimated budget presented below incorporates aquilogic’s updated fee schedule for 2017 (attached). The revised 2017 fee schedule reflects an approximate 5% change in rates as compared to the projects initial 2012 fee schedule included within Agreement No. 0827 dated April 18, 2012 and amended on July 24, 2013 (Amendment No. 1), March 4, 2015 (Amendment No. 2), and May 16, 2016 (Amendment No. 3).
As requested, a summary of estimated time (hours) for aquilogic staff to complete the scope of work described herein is presented below.

<table>
<thead>
<tr>
<th>Staff</th>
<th>Task 1 Database Update (Quarterly)</th>
<th>Task 2 Database Update (Assessment)</th>
<th>Task 3 Database Mgmt.</th>
<th>Task 4 EQuIS Hosting</th>
<th>Task 5 EQuIS External Access</th>
<th>Task 6 Project Coord. (Database)</th>
<th>Task 7 Other Proj. Coord. (non-Database)</th>
<th>Total Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anthony Brown</td>
<td>18</td>
<td>20</td>
<td>10</td>
<td>---</td>
<td>5</td>
<td>---</td>
<td>---</td>
<td>5</td>
</tr>
<tr>
<td>Brandon Eisen</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>5</td>
<td>---</td>
<td>5</td>
</tr>
<tr>
<td>Melody Kneale</td>
<td>196</td>
<td>90</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>286</td>
</tr>
<tr>
<td>Dina Martino</td>
<td>214</td>
<td>110</td>
<td>10</td>
<td>0</td>
<td>30</td>
<td>0</td>
<td>0</td>
<td>364</td>
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<tr>
<td>Total Hours</td>
<td>214</td>
<td>110</td>
<td>10</td>
<td>0</td>
<td>30</td>
<td>0</td>
<td>0</td>
<td>364</td>
</tr>
</tbody>
</table>
If any additional information is required regarding this estimate for South Basin database management and updates, please contact me at (714) 770-8040 or via email at brandon.eisen@aquilogic.com

Regards
aquilogic, Inc.

Brandon Eisen
Senior Hydrogeologist

cc: Roy Herndon, OCWD

encl.: 2017 Schedule of Fees for Preferred Clients
2017 SCHEDULE OF FEES FOR CONSULTING SERVICES FOR PREFERRED CLIENTS

1. Technical Services
Technical Services performed by personnel of aquilogic for hours actually spent on project activity, including office, field and travel time, will be charged as follows (in U.S. Dollars):

<table>
<thead>
<tr>
<th>Professional Personnel*</th>
<th>Support Personnel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corporate Executive</td>
<td>Administrative Manager</td>
</tr>
<tr>
<td>Principal</td>
<td>Project Accountant</td>
</tr>
<tr>
<td>Senior Manager</td>
<td>Project Assistant</td>
</tr>
<tr>
<td>Project Manager</td>
<td>Senior Designer</td>
</tr>
<tr>
<td>Senior Technical</td>
<td>Design Draftperson</td>
</tr>
<tr>
<td>Project Technical</td>
<td>Field Services Manager</td>
</tr>
<tr>
<td>Staff Technical</td>
<td>Field Technician</td>
</tr>
<tr>
<td>Intern</td>
<td>Laborer</td>
</tr>
</tbody>
</table>

*Includes all engineers, scientists and all other project professionals

Unless otherwise agreed to in writing, time will be billed in half hour increments.

All overtime (hourly or non-exempt support staff) will be billed at 1.25 times the above rates. Night, weekend or holiday work requested by the client (all staff) will be billed at 1.25 times the above rates. Specialist services (e.g. consulting boards, advisory panels or similar specialist consultation, declarations, deposition and trial preparation) will be billed at 1.5 times the above rates (with a four-hour minimum). Deposition and trial testimony will be billed at 2 times the above rates (with an eight hour minimum).

This fee schedule is effective for the calendar year indicated at the top of this page. Should work extend beyond the calendar year into a subsequent year, then the hourly fees reflected hereon shall escalate at 3% on January 1 of that subsequent year, and 3% on January 1 of any subsequent year thereafter, unless an entirely new fee schedule is negotiated for any subsequent year.

2. Subsistence and Expenses
Living and travel expenses incurred by personnel of aquilogic associated with a project will be charged at cost plus twelve percent (12%). A fixed per diem can be negotiated for specific projects. All airline travel exceeding five hours airport gate to gate (on the most direct route) will be in business class.

3. Materials, Subcontracts, and Equipment Rental
Direct material, equipment, outside services, and other expenses contracted or incurred by aquilogic on behalf of a project will be charged at cost plus twelve percent (12%). These disbursements include, but are not limited to: Field Equipment (e.g. field vehicles, etc.); subcontractor Services (e.g. laboratory analyses, etc.); materials and supplies (e.g. Sampling supplies, etc.); and other expenses (e.g. work permits, bonds, etc.). Postage, non-overnight shipping, telephone (office and cellular), office computing, facsimile, photocopying (excluding color), and miscellaneous office supplies will be billed as an administrative fee of four percent (4%) of project personnel billings.

4. Billings
Statements normally will be issued monthly, or at the completion of the project, and are payable upon receipt, unless otherwise agreed in writing by aquilogic. Interest, at the rate of one percent (1%) per month, not to exceed the maximum rate allowed by law, will be payable on any amounts not paid within thirty (30) days; payment thereafter to be applied first to accrued interest and then to the principal unpaid amount. Unless otherwise specified in other contract documents or project proposal, all work on a project will cease should any invoice remain unpaid 60 days after the invoice has been submitted to the client. Work will not recommence until the account has been made current; that is, all outstanding invoices (including accrued interest) have been paid.
5. Indemnity
Aquilogic shall indemnify, defend and hold Client harmless from and against all claims, liabilities, suits, loss, cost, expense and damages for injury to or death of persons or damage to or destruction of property arising in connection with and to the extent of Consultant’s negligence in the performance of the Services under this Agreement.

6. Warranty
Aquilogic warrants that the Services shall be performed in accordance with the standards customarily provided by an experienced and competent professional engineering organization performing the same or similar Services. Consultant shall re-perform at its own expense any of said Services which were not performed in accordance with this standard, provided that Consultant is notified in writing of the nonconformity within twelve (12) months after the performance of the deficient Services, and provided further that the cost to Consultant of such remedial Services shall not exceed the amount paid to Consultant under this Agreement. The foregoing are Consultant's entire responsibilities and Client's exclusive remedies for Services performed or to be performed hereunder, and no other warranties, guarantees, liabilities or obligations are to be implied.

7. Consequential Damages
In no event shall Aquilogic or its sub-consultants/sub-contractors or vendors of any tier be liable in contract, tort, strict liability, warranty, or otherwise for any special, indirect, incidental or consequential damages such as but not limited to loss of product, loss of use, non-operation or increased costs of operation of equipment or systems, loss of anticipated profits or revenue, costs of capital, or cost of purchased or replacement equipment or systems.

8. Limitation of Liability
In no event shall the total aggregate liability of Aquilogic exceed the amount paid by Client for the Services performed.

9. Disputes
Any disputes between the Parties which arise out of this Agreement which cannot be settled amicably by the Parties shall be submitted to and settled under the arbitration rules of the American Arbitration Association with proceedings in Los Angeles, California. Such disputes shall be governed in accordance with the laws of the state of California, U.S.A.

10. Confidentiality
Aquilogic and the Client agree to keep confidential all Information supplied by others and not to utilize, either directly or indirectly, any information for any purpose other than related to Services being performed, or to disclose it to anyone, including partners and affiliated companies, except on a "need to know" basis, without prior written consent from the party providing said confidential information. If required, Aquilogic and the Client shall execute a non-disclosure or confidentiality agreement (NDA) that further defines the provision, use and disclosure of confidential information.

11. Termination
Client may at any time, by fifteen (15) days written notice to Aquilogic, terminate all or any part of the unperformed Services under this Agreement. In such event, Aquilogic shall be compensated for Services performed to the effective date of termination, plus the reasonable costs of demobilization and settlement of subcontracts, purchase orders, and other commitments incurred by Aquilogic for performance of the Services.

12. Entire Agreement
In the absence of any other executed agreement, this schedule of fees and accompanying proposal constitute the entire agreement between the Client and Aquilogic for the Services to be performed. No modification shall be effective unless it is in writing and executed by both Parties. This Agreement supersedes any and all other agreements between the Parties, whether written or oral, with respect to the subject matter hereof.
AGENDA ITEM SUBMITTAL

Meeting Date: March 8, 2017  
Budgeted: N/A  
Budget Amount: $49.7 Million  
To: Water Issues Committee  
Board of Directors  
Cost Estimate: $49.7 Million  
Funding Source: Water Budget  
Program/Line Item No: N/A  
From: Mike Markus  
General Counsel Approval: N/A  
Engineers/Feasibility Report: N/A  
Staff Contact: J. Kennedy / R. Fick  
CEQA Compliance: N/A

Subject: PROPOSED FISCAL YEAR 2017-18 WATER PURCHASE BUDGET

SUMMARY

The proposed FY 2017-18 water budget totals $49.7 million which provides for the purchase of 67,000 acre-feet of water. The largest expense is for 65,000 acre-feet of Metropolitan Water District (MWD) untreated full service water. Section 6 from the draft FY 2017-18 budget document provided to the Board on March 1, 2017 is attached and provides the water budget details. Staff will review the budget with the Committee.

Attachment(s):
- Section 6 of the Draft FY 2017-2018 Budget
- Presentation

RECOMMENDATION

Agendize for March 15 Board meeting: Provide comments and direction

DISCUSSION/ANALYSIS

The proposed FY 2017-18 water budget calls for the purchase of 65,000 acre-feet of MWD untreated full service water to help support the recommended 75% Basin Production Percentage (BPP). The MWD volumetric rate for this water is currently $666/acre-foot for calendar year 2017 and will increase to $695/acre-foot on January 1, 2018. In addition to the volumetric rate approximately an additional $80 per acre-foot can be added to the cost of MWD water due to the separate readiness-to-serve and capacity charges.

By annually purchasing untreated imported water from MWD, recharging it into the groundwater basin, and allowing an equivalent amount of additional groundwater pumping, the Groundwater Producers avoid paying for treated MWD full service water which currently cost $979/acre-foot. The MWD treatment surcharge is currently $313/acre-foot. The Producers do incur about $97/acre-foot in variable cost for water pumped out of the ground. However there is a significant overall savings to the service territory which is estimated at $216/acre-foot ($313/acre-foot – $97/acre-foot). The District operates in a manner to maximize MWD untreated full service water purchases
Accumulated Overdraft

The Basin’s accumulated overdraft began this fiscal year at 379,000 acre-feet and is expected to decrease to approximately 320,000 acre-feet by June 30, 2017 as shown below.

Groundwater Basin Accumulated Overdraft

![Graph showing accumulated overdraft from FY2017-18 to 6/30/17]

<table>
<thead>
<tr>
<th>Source</th>
<th>Amount (af)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Captured Santa Ana River Baseflows</td>
<td>62,000</td>
</tr>
<tr>
<td>Captured Santa Ana River Stormflows</td>
<td>41,000</td>
</tr>
<tr>
<td>Natural Incidental Recharge</td>
<td>52,000</td>
</tr>
<tr>
<td>MWD Untreated Full Service Water</td>
<td>65,000</td>
</tr>
<tr>
<td>GWR System</td>
<td>103,000</td>
</tr>
<tr>
<td>Alamitos Seawater Barrier</td>
<td>2,000</td>
</tr>
</tbody>
</table>

**FY2017-18 Water Balance**

The proposed FY2017-18 water budget would reduce the accumulated overdraft by about 22,000 acre-feet assuming a slightly dry hydrology, 65,000 acre-feet of MWD water is received and recharged, and a BPP of 75%. If the District experiences another dry year (SAR Storm Flows and Natural Incidental Recharge are a combined approximately 50,000 acre-feet less than budgeted), the accumulated overdraft would increase by about 28,000 acre-feet by June 30, 2018.

The following table summarizes expected sources of water to recharge the groundwater basin under slightly dry conditions.
### Additional Water Purchases

Staff has been meeting with MWD and MWDOC to potentially purchase in the area of an additional 30,000 acre-feet of untreated full service water. The exact terms of this additional possible purchase is currently being developed with MWD. The District would need to delay and defer scheduled capital projects and maintenance activities at the recharge facilities in the city of Anaheim this summer to take the water. Additionally if the area experiences another relatively wet winter during FY17-18 it is likely the District would not be able to physically recharge 95,000 acre-feet of water. The cost of this additional water would be approximately $20 million and funding would need to be identified. Staff expects to present an option to purchase additional water to the Board for consideration within the next two to three weeks.

### Projected June 30, 2018 Accumulated Overdraft

If an additional 30,000 acre-feet of MWD water can be purchased and recharged in FY2017-18, in addition to the recommended 65,000 acre-feet of water, and with average hydrology, the accumulated overdraft can be expected to decline to somewhere near 270,000 acre-feet by June 30, 2018.

The District’s five year Replenishment Assessment and Basin Production Percentage projections that were provided to the Board in July 2016 allocated funding to refill the groundwater basin by 10,000 to 20,000 acre-feet annually assuming average hydrology.

If the Board desires to refill the groundwater basin quicker, an in-lieu program could be developed. The current net cost of in-lieu water is $882/acre-feet (MWD treated rate of $979/acre-foot minus the Producers avoided pumping cost of $97/af). Therefore every 10,000 acre-feet of in-lieu water purchased to refill the groundwater basin would cost $8.82 million and the Replenishment Assessment would need to be increased by approximately $29/acre-foot to fund the expense.

### PRIOR RELEVANT BOARD ACTION(S) Annual
### Fiscal Year 2017-18 Budget for Water Purchase
(July 1, 2017 to June 30, 2018)

<table>
<thead>
<tr>
<th>Item #</th>
<th>Item Description</th>
<th>Volume (AF)</th>
<th>2017-18 Unit Cost $/af (1)</th>
<th>MWDOC Surcharge $/af</th>
<th>Total Cost Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Alamitos Barrier Injection water from Long Beach Water Dept (2)</td>
<td>2,000</td>
<td>$1,112</td>
<td>n/a</td>
<td>$2,224,000</td>
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<tr>
<td>2</td>
<td>Untreated Non-interruptible MWD water (3)</td>
<td>65,000</td>
<td>$680.5</td>
<td>n/a</td>
<td>$44,232,500</td>
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<tr>
<td></td>
<td><strong>Sub-total</strong></td>
<td><strong>67,000</strong></td>
<td></td>
<td></td>
<td><strong>$46,456,500</strong></td>
</tr>
<tr>
<td>3</td>
<td>MWDOC Surcharge</td>
<td></td>
<td></td>
<td></td>
<td>$400,000</td>
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<tr>
<td>4</td>
<td>MWD/MWDOC Capacity Charge (4)</td>
<td></td>
<td></td>
<td></td>
<td>$900,000</td>
</tr>
<tr>
<td>5</td>
<td>Readiness-to-serve charge is based upon an 4-year average of previous OC-44</td>
<td></td>
<td></td>
<td></td>
<td>$1,920,000</td>
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<tr>
<td></td>
<td>connection supplies (5)</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>67,000</strong></td>
<td></td>
<td></td>
<td><strong>$49,676,500</strong></td>
</tr>
</tbody>
</table>

**NOTES**

(1) Average of 2017 and 2018 rates
(2) Treated Non-interruptible rate to increase from $979/af to $1015/af: Average is $997/af
   Unit cost includes $5/af City of Long Beach fee plus $110/af RTS and Capacity Charge paid by Long Beach to MWD
(3) Untreated non-interruptible rate to increase from $666/af to $695/af: Average is $680.5/af
(4) MWD/MWDOC Capacity Charge is billed monthly by MWDOC as a flat fee
(5) Readiness-to-serve (RTS) charge is calculated and provided by MWDOC
Review of FY17-18 Proposed Water Purchase Budget

Water Issues Committee
March 8, 2017
## FY 2017-18 Budget Schedule

<table>
<thead>
<tr>
<th>Date</th>
<th>Meeting</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>December 15, 2019</td>
<td>Admin/Finance Cte</td>
<td>Budget preparation overview and kick-off</td>
</tr>
<tr>
<td>January 12, 2017</td>
<td>Admin/Finance Cte</td>
<td>Provide preliminary BPP and RA estimates</td>
</tr>
<tr>
<td>March 1, 2017</td>
<td>Board</td>
<td>Present Draft Budget</td>
</tr>
<tr>
<td>March 8, 2017</td>
<td>Water Issues Cte</td>
<td>Review Water Budget</td>
</tr>
<tr>
<td>March 9, 2017</td>
<td>Admin/Finance Cte</td>
<td>Review R&amp;R Budget</td>
</tr>
<tr>
<td>March 9, 2017</td>
<td>Producers</td>
<td>Present Draft Budget</td>
</tr>
<tr>
<td>April 12, 2017</td>
<td>Water Issues Cte</td>
<td>Review CIP Budget</td>
</tr>
<tr>
<td>April 13, 2017</td>
<td>Admin/Finance Cte</td>
<td>Review General Fund Budget</td>
</tr>
<tr>
<td>April 20, 2016</td>
<td>Board</td>
<td>Public Hearing to set RA &amp; BPP</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Consideration to approve budget</td>
</tr>
</tbody>
</table>
Budget Components
Total Budget - $204.4 million
Increase budget for MWD Untreated Full Service water from 50,000 af to 65,000 af in current budget

Total cost - $49.7 M

Any unspent budget would go to Water Reserve
# Proposed FY 2017-18 Water Budget Expenses

<table>
<thead>
<tr>
<th>Water Source</th>
<th>Amount (af)</th>
<th>Unit Cost</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alamitos Barrier</td>
<td>2,000</td>
<td>$1,112/af</td>
<td>$2,224,000</td>
</tr>
<tr>
<td>MWD untreated full service</td>
<td>65,000</td>
<td>$680.5/af</td>
<td>$44,232,500</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td><strong>67,000</strong></td>
<td></td>
<td><strong>$46,456,500</strong></td>
</tr>
<tr>
<td>MWD readiness to serve charge</td>
<td></td>
<td></td>
<td>$1,920,000</td>
</tr>
<tr>
<td>MWDOC Charge</td>
<td></td>
<td></td>
<td>$400,000</td>
</tr>
<tr>
<td>MWD Capacity Charge</td>
<td></td>
<td></td>
<td>$900,000</td>
</tr>
<tr>
<td><strong>Total Expenses</strong></td>
<td></td>
<td></td>
<td><strong>$49,676,500</strong></td>
</tr>
<tr>
<td>Water Source</td>
<td>Average Hydrology (afy)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>----------------------</td>
<td>------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SAR Baseflow</td>
<td>62,500</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SAR Stormflows</td>
<td>41,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Incidental Recharge</td>
<td>52,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GWR System</td>
<td>103,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MWD Supplies</td>
<td>65,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>2,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total Water Into Basin</strong></td>
<td><strong>325,500</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Expected Pumping @ 75%</strong></td>
<td><strong>303,000</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Subtotal Basin Gain/Loss (rounded)</strong></td>
<td><strong>22,000</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Water Budget Continue

- Currently discussing with MWD & MWDOC the potential to purchase additional water above 65,000 afy
- Developing the terms of the additional purchases
- In the neighborhood of additional 30,000 af of water or about $20 million
OCWD Groundwater Basin Accumulated Overdraft

<table>
<thead>
<tr>
<th>Date</th>
<th>Overdraft (af)</th>
</tr>
</thead>
<tbody>
<tr>
<td>6/30/16</td>
<td>379,000</td>
</tr>
<tr>
<td>6/30/17</td>
<td>~320,000</td>
</tr>
<tr>
<td>6/30/18</td>
<td>~270,000</td>
</tr>
<tr>
<td></td>
<td>~145,000</td>
</tr>
</tbody>
</table>
Purchasing Additional Water in FY17-18

- Has to be by In-lieu method – no OCWD recharge capacity remaining
- More expensive water - $979/af vs $666/af
- Capacity to take ~ 10,000 af/month
- OCWD staff offer to MWD – take In-lieu water at untreated rate
Purchasing Additional In-Lieu Water in FY17-18

- Water Cost of $979/af - $97/af = $882/af
- 145,000 af of water = $128 million
- Could take water over a few years to ease financial hit or finance purchases using commercial paper program
Replenishment Assessment Projection - $/af

Projected RA with a 3 year In-lieu Basin Refill Plan

- July 2016 Projected RA
- MWD Rate (includes $65 for RTS)
Recommendations

• Received Committee comments
• Discuss with Groundwater Producers
End of Presentation
Savings by OCWD Purchasing Untreated Full Service MWD Water

<table>
<thead>
<tr>
<th>Category</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Untreated MWD Water Recharged</td>
<td>$666</td>
</tr>
<tr>
<td>Avoided Treated MWD Water</td>
<td>$979</td>
</tr>
</tbody>
</table>

$/af

- Savings to Region
- Variable Well Operating Cost
- Cost of Treated MWD Water
- Cost of Untreated MWD Water
<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Water Demands</td>
<td>395,000</td>
</tr>
<tr>
<td>Reclamation (Title 22)</td>
<td>20,000</td>
</tr>
<tr>
<td>Net Total Water Demands</td>
<td>375,000</td>
</tr>
<tr>
<td>$75% \times 378,000$</td>
<td>281,000</td>
</tr>
<tr>
<td>WQ projects pumping above BPP</td>
<td>22,000</td>
</tr>
<tr>
<td>Total Estimated Pumping @ 75%</td>
<td>303,000</td>
</tr>
</tbody>
</table>
## Water Quality BEA Exemption Production

<table>
<thead>
<tr>
<th>Producer</th>
<th>Project Amount (afy)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MCWD</td>
<td>6,000</td>
</tr>
<tr>
<td>IRWD IDS</td>
<td>8,000</td>
</tr>
<tr>
<td>IRWD Wells 21 &amp; 22</td>
<td>7,000</td>
</tr>
<tr>
<td>Tustin</td>
<td>1,000</td>
</tr>
<tr>
<td>Total Estimated Pumping</td>
<td>22,000</td>
</tr>
</tbody>
</table>
# MWD Volumetric Rate Components

<table>
<thead>
<tr>
<th>Rate Components</th>
<th>1/1/2017</th>
<th>1/1/2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tier 1 Supply Rate</td>
<td>$201</td>
<td>$209</td>
</tr>
<tr>
<td>System Access Rate</td>
<td>$289</td>
<td>$299</td>
</tr>
<tr>
<td>Water Stewardship Rate</td>
<td>$52</td>
<td>$55</td>
</tr>
<tr>
<td>System Power Rate</td>
<td>$124</td>
<td>$132</td>
</tr>
<tr>
<td>Total Tier I untreated</td>
<td>$666</td>
<td>$695</td>
</tr>
<tr>
<td>Treatment Surcharge</td>
<td>$313</td>
<td>$320</td>
</tr>
<tr>
<td>Total Tier I</td>
<td>$979</td>
<td>$1,015</td>
</tr>
</tbody>
</table>