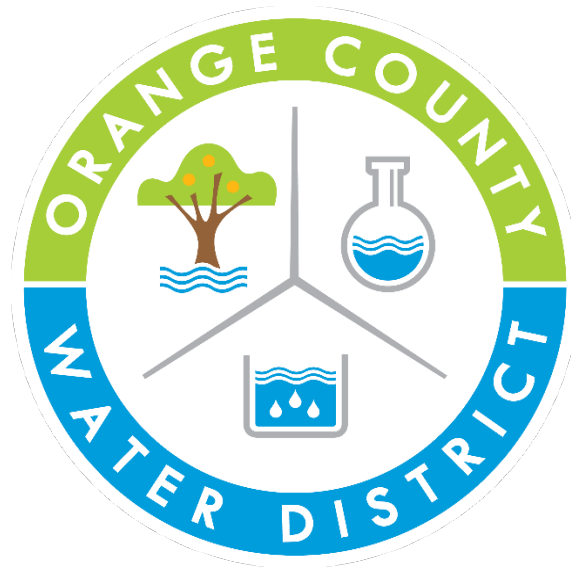


**ORANGE COUNTY WATER DISTRICT**

**REQUEST FOR PROPOSALS  
RFP-25-006**

**FOR  
Injection Well Redevelopment**

**ISSUED: Thursday, December 4, 2025**



**PROPOSALS DUE:**

**Monday, January 26, 2026 at 10:00AM PT**

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List of Exhibits:

- Exhibit A: Scope of Services and Cost Proposal Sheet
- Exhibit A-1: Scope of Services
- Exhibit A-2: Cost Proposal Sheet
- Exhibit B: Evaluation Criteria
- Exhibit C: Services Agreement
- Exhibit D: Contractor Safety Program
- Exhibit D-1: Contractor Environmental Health & Safety Handbook
- Exhibit D-2: Appendix B: Contractor Required Information Form
- Exhibit E: Sample Work Order Authorization
- Exhibit F: Location Map for Mandatory Pre-Proposal Meeting

List of Attachments:

- Attachment No.1: RFP Submittal Checklist



## OCWD RFP-25-006 - Injection Well Redevelopment

The Orange County Water District (“OCWD” or District) is seeking proposals from qualified and experienced firms (“Proposer” or “Contractor”) to provide well development services for three types of injection wells. OCWD intends to evaluate the proposals received and enter into a General Services Agreement (“Agreement”) with the qualified firm. The work is expected to commence on April 13, 2026. This Agreement will be for a minimum term of three (3) years for the period from April 13, 2026 to April 12, 2029 with an option to renew for an additional two (2) years. The Agreement will be monitored closely for acceptable services rendered throughout the Agreement term. OCWD will have the option to terminate the contract in whole or in part during the Agreement term, for any reason or no reason, without penalty, upon notice. The proposer will not be entitled to lost profits or any other compensation not earned prior to the time of termination.

This Request for Proposal (“RFP”) describes the required scope of services, the information that must be included in the proposal, and the proposal selection process. Proposers are encouraged to carefully review this RFP in its entirety prior to submitting their proposals. Failure to submit information in accordance with these requirements and procedures may be cause for disqualification.

### 1. INTRODUCTION

The OCWD is an internationally recognized leader in the water industry that was formed in 1933 by the California State Legislature which entrusted OCWD to guard and protect the region’s groundwater basin and limited water supply. OCWD’s mission is to provide a reliable supply of high-quality water that is sourced in an environmentally responsible manner to the more than 2.5 million residents and businesses within the 270 square mile service area of Orange County, California that OCWD serves. OCWD manages three of Southern California’s greatest water supplies, this includes protecting rights to the Santa Ana River, managing and replenishing the Orange County Groundwater Basin, and operating and maintaining the Groundwater Replenishment System (GWRS), the world’s largest advanced water purification system for potable water reuse. More information regarding the OCWD can be found at [www.ocwd.com](http://www.ocwd.com).

### 2. SOLICITATION SCHEDULE

The solicitation schedule is summarized in the table below. OCWD reserves the right to modify the schedule below at its discretion. Proper notification changes will be made to interested proposers.

RFP Issued	Thursday, December 4, 2025
Mandatory Pre-Proposal Meeting	Wednesday, January 7, 2026 at 7:30AM PT
Questions Due Date	Wednesday, January 14, 2026 by 12:00PM PT
Proposals Due	Monday, January 26, 2026 at 10:00AM PT
Agreement Award Date:	March 2026



## 2.1. MANDATORY PRE-PROPOSAL MEETING

The **Mandatory** Pre-Proposal Meeting will be held on Wednesday, January 7, 2026 at 7:30AM PT. The meeting will begin in person at the Santa Ana injection well site, proceed to two injection wells in Fountain Valley, and conclude at OCWD's Main Office located at **18700 Ward St, Fountain Valley, CA 92708**. Expect the meeting to last up to **4.5 hours**. Attendance is required for all firms intending to submit a proposal.

Use the link below for the Google pin to the meeting location:

[MBI Santa Ana Well Location](#)

See Exhibit F for a map of the meeting location.

Meeting participants will be required to sign in. A copy of the sign-in sheet will be posted on the OCWD website at, <https://www.ocwd.com/working-with-us/rfp-contracts/>, after the pre-proposal meeting. Proposals will not be accepted from firms that do not attend the mandatory pre-proposal meeting.

## 2.2. QUESTIONS CONCERNING REQUEST FOR PROPOSALS

All questions regarding the RFP must be submitted in writing before the deadline due date of **Wednesday, January 14, 2026 by 12:00PM PT**. All questions must be titled "**Question – RFP-25-006 Injection Well Redevelopment**". Responses to questions received from prospective proposers will be formally documented in a Question and Answer (Q&A) table that will be posted on the OCWD website: <https://www.ocwd.com/working-with-us/rfp-contracts/>. The Q&A table will be updated regularly as questions are received from prospective proposers. Questions received after the questions due date will not be considered.

Attention: Marcus Villalobos, Buyer  
Email: [procurement@ocwd.com](mailto:procurement@ocwd.com)

## 2.3. DEADLINE FOR PROPOSALS

Three (3) hard copies and one (1) electronic flash drive copy of the proposal must be received in a sealed envelope by OCWD no later than **Monday, January 26, 2026 at 10:00AM PT** or such later time that OCWD may announce by an addendum at any time prior to the proposal deadline. The envelope shall be plainly marked on the exterior "**Proposal for RFP-25-006 Injection Well Redevelopment**" and with the name, company name, and address of the proposer.

Proposals must be mailed or delivered in person or via courier services at the District office listed below. To deliver submittal packages in person or via courier, please notify the guard at the main gate for proposal drop off. Sealed envelopes will be timestamped upon receipt at the receptionist desk.

## Orange County Water District

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Orange County Water District  
Injection Well Redevelopment  
RFP-25-006  
Thursday, December 4, 2025



## OCWD RFP-25-006 - Injection Well Redevelopment

Administration Office Building  
Attention: Marcus Villalobos, Buyer  
Address: 18700 Ward Street  
Fountain Valley, CA 92708

It is the Proposer's responsibility to ensure that proposals are received prior to the submittal deadline. Proposal packages should also include all signed Acknowledgment of Addendum forms that may be issued by OCWD as part of this RFP process, as further described below. Proposals received after the deadline will not be considered under any circumstances. FAXED OR E-MAILED SUBMISSIONS WILL NOT BE ACCEPTED. The OCWD will not be responsible for the proper identification and handling of any proposals submitted incorrectly. Only responses properly submitted to OCWD will be considered. OCWD reserves the right to reject any and/or all responses received. There will be no formal opening of the proposals.

### 2.4. PRE-SUBMITTAL ACTIVITIES

The District reserves the right to revise the RFP prior to the date the Proposals are due. Addendums to the RFP shall be posted on the OCWD website: <https://www.ocwd.com/working-with-us/rfp-contracts/> for all interested Proposers. The District reserves the right to extend the date by which the Proposals are due.

### 3. PROJECT BACKGROUND AND DESCRIPTION

The Orange County Water District (OCWD) utilizes three different types of injection wells to control seawater intrusion and recharge the Principal Aquifer in Orange County, California. These wells inject recycled wastewater from the Groundwater Water Replenishment System. All three types of injection wells lose injection capacity with time due to the accumulation of particles along the well screen and filter pack envelope. OCWD has prepared this RFP to select a qualified contractor to provide well redevelopment services for these three types of injection wells. This RFP includes three scopes of services, addressing each type of injection well.

### 4. SCOPE OF SERVICES

See **Exhibit A**.

See Exhibit A, attached at the end of this RFP for the three scopes of services and performance standards for the injection well redevelopment.

#### 4.1. WORK ORDER AUTHORIZATIONS

For each project task that arises, a work order request will be solicited by the District representative indicating the project task. Each project task will be initiated by a District work order authorization which shall be itemized to include the selected firm's proposal of services, any or all labor rate(s), service(s), material(s), equipment(s), in accordance with rates that are provided in **Exhibit A-2, Cost Proposal Sheet**.



## 5. GENERAL INFORMATION

The District expects the selected firm to provide quality service in accordance with industry standards. The firm must demonstrate experience with the type of anticipated work and must have the ability to perform all services in a timely manner upon the request(s) from the District or the District's authorized representative. All work shall comply with the requirements of federal, state, and local laws, and District requirements. The proposing firm must be reputable and capable of furnishing the required materials, equipment, machinery, supplies, tools, apparatus, incidentals, labor and supervision necessary to provide services for the injection well redevelopment for the three scopes of services as defined in this RFP document.>

Acceptable performance standards include, but are not limited to, dependability, contractor safety, demonstrated experience with anticipated work with the ability to perform all anticipated services in a timely manner upon receipt of request, expertise on the redevelopment of injection wells.

### 5.1. MINIMUM QUALIFICATIONS

The selected firm is required to have at minimum the following qualifications:

#### Phase I – Legacy Wells – Scope of Work

- **Lead Operator** – The “lead” operator must have a minimum of 5 years airlifting experience in the form of reverse circulation drilling or well development (redevelopment). The “lead” operator must have a minimum of 2 years experience airlifting with flow rates greater than 500 gpm. The “lead” operator shall direct site operations as pertains to rig and work described herein and as directed by OCWD.
- **Operator Assistant** – Assist “lead” operator and OCWD field geologist as directed by operator and OCWD field geologist. Assistant to have minimum 2 years experience working with development rig.
- **Project Manager** – Minimum five (5) years’ experience supervising well development activities. Responsibilities include: project coordination, scheduling, billing, attending meetings and responsible for ensuring overall success of project.

#### Phase II – Modern Wells – Scope of Work

- **Lead Operator** – The “lead” operator must have a minimum of 5 years high-volume airlifting experience in the form of reverse circulation drilling or well



## OCWD RFP-25-006 - Injection Well Redevelopment

development achieving flow rates of at least 300 gpm. The “lead” operator must have a minimum of 5 years well development/ redevelopment experience by using the dual swab airlifting method. The “lead” operator shall have a minimum 5 years’ experience removing and installing water well pumps utilizing 8-inch diameter column pipe. The “lead” operator shall direct site operations as pertains to rig and work described herein and as directed by OCWD.

- **Operator Assistant** – Assist “lead” operator and OCWD field geologist as directed by operator and OCWD field geologist. Assistant to have minimum 2 years experience working with development rig.
- **Project Manager** – Minimum five (5) years’ experience supervising well development activities. Responsibilities include: project coordination, scheduling, billing, attending meetings and responsible for ensuring overall success of project.

### Phase III – Mid Basin Injection Wells – Scope of Work

- **Lead Operator** – The “lead” operator must have a minimum of 5 years high-volume airlifting experience in the form of reverse circulation drilling or well development achieving flow rates of at least 300 gpm. The “lead” operator must have a minimum of 5 years’ well development/ redevelopment experience by using the dual swab airlifting method. The “lead” operator shall have a minimum 5 years’ experience removing and installing water well pumps utilizing 12-inch diameter column pipe. The “lead” operator shall direct site operations as pertains to rig and work described herein and as directed by OCWD.
- **Operator Assistant** – Assist “lead” operator and OCWD field geologist as directed by operator and OCWD field geologist. Assistant to have minimum 2 years experience working with development rig.
- **Project Manager** – Minimum five (5) years’ experience supervising well development activities. Responsibilities include: project coordination, scheduling, billing, attending meetings and responsible for ensuring overall success of project.

### 5.2. CONTRACTOR SAFETY

OCWD is committed to the safety of all its employees, contractors, and visitors. All contractors and subcontractors must adhere to applicable Federal, State, and Regional



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Environmental, Health and Safety (EHS) requirements, as well as OCWD EHS policies and procedures. As part of OCWD's Contractor Safety Program, the proposer shall review and sign the required documents provided in **Exhibit D**, which describes OCWD's Contractor Safety Program Requirements (**Exhibit D-1**) and Appendix forms (**Exhibit D-2**) that are required to be filled out by the Contractor at time of the proposal deadline and throughout the duration of the Agreement. OCWD's Risk and Safety Department will coordinate with the awarded contractor on safety training regarding OCWD's Contractor Safety Program.

### 5.3. PREVAILING WAGE

The California Labor Code, including but not limited to Sections 1720 et seq. and 1770 et seq. thereof, and interpreting case law and regulations (the "Prevailing Wage Laws") require the payment of prevailing wages for "public works" projects, including "[w]ork done for irrigation, utility, reclamation, and improvement districts, and other districts of this type" where the total compensation exceeds \$1000. The District has determined that some or all of the scope of work requires the payment of prevailing wages under the Prevailing Wage Laws.

Responding proposers must expressly agree to be responsible for compliance with all Prevailing Wage Laws applicable to the work performed.

The firms to whom an Agreement is awarded hereunder shall comply with all Prevailing Wage Laws, including the payment of prevailing wages to persons performing public works for OCWD. A copy of these prevailing wage rates is on file with the Department of Industrial Relations and can be found online with the State of California at <http://www.dir.ca.gov/dlsr/pwd>. A copy of such prevailing wage rates shall be posted on the jobsite by selected firms.

In accordance with Sections 1773 and 1773.2 of the California Labor Code, the District has found and determined the general prevailing rates of wages in the locality in which the public work is to be performed are those determined by the Director of Industrial Relations and available at <https://www.dir.ca.gov/OPRL/DPreWageDetermination.htm>. Copies of the prevailing rates of wages are maintained with the District's principal office and are available to any interested party on request. The selected firm shall post a copy of the prevailing rate of per diem wages at each job site.

The description provided herein only summarizes the Prevailing Wage Laws applicable to the work, and proposers are independently responsible for reviewing and assuring compliance with the same.

### 5.4. DIR CONTRACTOR REGISTRATION

Firms submitting proposals to this RFP must be registered with the Department of Industrial Relations prior to submitting a proposal pursuant to the requirements of



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Sections 1725.5 and 1771.1 of the California Labor Code. Contractor registration information can be found at <http://www.dir.ca.gov/Public-Works/PublicWorks.html>. Contracts entered into with any firm in violation of Section 1771.1(a), shall be subject to cancellation by the District at the sole discretion of the District consistent with Section 1771.1(f). Pursuant to California Labor Code Section 1771.4, proposers are alerted that the project is subject to compliance monitoring and enforcement by the Department of Industrial Relations.

### **6. ELEMENTS OF PROPOSAL**

To provide a degree of consistency in the review of the written proposals, firms are required to include the following content in their proposals. The information required below will be used to evaluate each proposal based on the evaluation criteria outlined in this RFP. Proposals may be deemed nonresponsive if they do not respond to all areas specified below.

Proposals shall be prepared simply and economically, providing a straightforward and concise description of how the proposal has satisfied all the requirements of this RFP. Emphasis shall be on completeness and clarity of content with sufficient detail to allow for accurate evaluation and comparative analysis. Excessive or irrelevant materials will not be favorably received.

The following subsections describe the contents required in the proposal. The proposal shall be of such scope and depth to sufficiently describe and demonstrate the proposer's understanding of and approach to the projects.

Please include the following in your proposal:

#### **6.1 Title Page**

The proposer should identify the RFP title, name and title of the firm's contact person, address, telephone number, fax number, email address, and date of proposal submission.

#### **6.2 Cover Letter**

A principal of the firm authorized to commit the firm to the requirements of the RFP must sign the cover letter. The letter should identify a contact person (name, e-mail address, and phone number) for future communication during the selection process. And shall also discuss the Proposer's commitment to providing high quality services, describe the firm's understanding and approach to the services, and its ability to perform the requirements of this RFP. Include a brief background of the firm including history, types of services provided, number of employees, number of offices and locations with staff size and disciplines, and any other relevant information that may be useful in determining the firm's qualifications to provide the services described in this RFP.



### 6.3 Table of Contents

The table of contents should include a clear and complete identification by section and page number of the submitted materials.

### 6.4 Contractor License and DIR Contractor Registration, Prevailing Wage Laws Compliance

Contractors submitting Proposals on this project must be registered with the Department of Industrial Relations pursuant to the requirements of Sections 1725.5 and 1771.1 of the California Labor Code prior to submitting a proposal. The proposer must provide their DIR reference number and expiration date and a copy of its contractor license issued by the State of California that is **Class A**.

Proposers shall include an express statement asserting that the proposal was prepared taking into account all applicable Prevailing Wage Laws and that the proposer agrees to comply with all such laws applicable to the work.

### 6.5 Experience and record of past performance.

Provide a minimum of three (3) references from other municipal, city, or county governmental agencies for which the company has recently or is currently providing **services** that is equivalent or greater in scope as being required in this RFP. Indicate the scope of work, date, contract amount, and the name, email address, and telephone number of the client contact. Also provide a complete list of other public agencies in California utilizing your services over the past five (5) years. Ongoing projects currently being performed by the proposer also may be submitted for consideration. The District at its discretion may contact the references for additional information. Failure to provide accurate contact information may be cause for rejection of the proposal as being nonresponsive.

### 6.6 Price Proposal

Please complete the Cost Proposal Sheet that is attached in **Exhibit A-2** for the services that are required within this RFP. Rate(s) shall include any or all labor rate(s), service(s), material(s), equipment(s). It is expected that the indicated rates will remain in effect for the duration of the Agreement term unless otherwise specified and approved by OCWD.

### 6.7 Other Information

The proposal shall also include:

#### 6.7.1 Contractor Safety Program

The proposer is required to review, complete, sign and submit the following documents:

- Contractor Environmental Health and Safety Agreement form, attached at the end of **Exhibit D-1**



## OCWD RFP-25-006 - Injection Well Redevelopment

- Appendix B: Contractor Required Information Form, attached in **Exhibit D-2**, must be completed in its entirety, and signed and submitted with the proposal.

### 6.7.2 Safety Manual

Contractor must include in their proposal a copy of its safety manual that meets requirements for their injury and illness prevention program.

### 6.7.3 Quality Control Plan

Contractor must include in its proposal a Quality Control Plan that provides the contractor an effective and efficient means of identifying and correcting problems throughout the entire scope of work. The Quality Control Plan must include a site supervisor or arborist staff that is certified through the International Society of Arboriculture (ISA) for the entire length of the Agreement.

### 6.8 Statement of Insurance Compliance

Proposer shall provide a statement that it will meet the insurance requirements that are listed in the Services Agreement, attached hereto as **Exhibit C**. OCWD will request the insurance forms and associated documentation when OCWD provides notice that the Services Agreement is awarded.

### 6.9 OCWD Standard Agreement

Proposers shall provide a statement that the Proposer accepts OCWD's form of Services Agreement attached hereto as **Exhibit C**. Proposers responding to this RFP must be prepared to proceed with the Services Agreement in substantially the form provided, with minor non-substantive changes in OCWD's sole discretion. OCWD retains full discretion to rescind the proposed Services Agreement award to a Proposer who fails to comply with this requirement, and to exclude the Proposer from future procurement where applicable. The Services Agreement shall be executed by the Proposer within ten (10) calendar days of receipt of OCWD's Notice of Award to Proposer.

### 6.10 Billing

Proposers shall provide a statement that it will meet the minimum requirements specified here. At a minimum, the invoice for services shall include the Work Order Authorization Number, Purchase Order Number, Agreement Number, and the itemized summary of each authorized project task along with the names of persons, their job titles, the hours worked, and hourly billing rates. Attached to each invoice shall also include backup of the prevailing wage rate weekly certified payroll and documentation for any other direct costs in the form of receipts or vendor invoices, with the applicable costs identified for items such as plant purchases and material costs. Essential components of a proper "Weekly Certified Payroll" include all the information that is called for on the standard WH-347 report:



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- The Fringe Benefits Statement (signed)
- The Payroll Earnings/Timesheet pages
- The Certification Statement (signed)
- Non-Performance reports covering periods where no certified payroll was incurred.

OCWD will provide reporting requirements to the selected firm, and the selected firm shall prepare invoices that comply with the requirements. Failure to satisfy the reporting requirements may result in rejection, payment delay, or short pay of the invoices submitted to OCWD for payment.

### **6.11 Conflict of Interest**

Provide a statement that the proposer, individuals employed by the proposer, or firms employed by or associated with the proposer, do not have a conflict of interest with the Project. The proposer shall exercise reasonable efforts to prevent any actions or conditions that could result in a conflict of interest and shall include, but is not limited to, establishing precautions to prevent its employees or agents from making, receiving, providing in, or offering gifts, entertainment, payments, loans, or other considerations which could be deemed to appear to influence individuals to act contrary to the best interest of the District. If a potential conflict of interest is identified in any form, the Proposer shall inform the District immediately. Proposers are subject to disqualification on the basis of a conflict of interest as determined by OCWD. By submitting a proposal you are stating you do not have a conflict of interest with the Project.

### **6.12 Equal Employment Opportunity And Affirmative Action Requirements**

The proposers shall provide a Statement of Equal Employment Opportunity/Affirmative Action. The selected consultant/contractor and each subconsultant/subcontractor shall not discriminate in the employment of persons on the work because of race, religious creed, color, national origin, ancestry, physical handicap, medical condition, marital status, sexual preference or sex of such persons except as permitted by Section 12940 of the California Government Code. The selected contractor is expected to maintain policies similar to those of the District regarding equal employment opportunities and affirmative action as set forth in the District's Administrative Policies.

## **7. PROPOSAL SUBMISSION REQUIREMENTS**

### **7.1. Proposal Format**

The proposal shall be limited to no more than 25 single-pages in 8.5" width x 11" length size recycled or recyclable white bond paper, paginated, and bound. This does not include the title page, table of contents, cover letter, appendices, dividers, or résumés. Any oversized documents, such as charts or tables, must be folded to size and secured in the envelope.



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All files shall be bookmarked and in a text searchable PDF format (i.e., not scanned images) compatible with Adobe Acrobat Version 8.0 (at a minimum). The main directory of the flash drive shall contain the entire proposal as two separate PDF files for Part One and Part Two. All sections of the PDF file shall be bookmarked.

### 7.2. Proposal Preparation Costs

This solicitation does not commit the District to award any work nor to pay any costs incurred from the preparation of proposals. Firms responding to this RFP will be solely responsible for all costs and expenses incurred during the selection process.

## 8. SELECTION PROCESS

Selection of the Contractor will be based on the proposal contents, prior experience of the firm, performance on similar or related projects, and overall costs that best serve the District. Other factors that may be considered during the evaluations include the firm's reputation in the industry and any other aspects which could affect the proposer's performance under the awarded Agreement.

All responsive proposals will be evaluated by a selection committee formed by the District. The proposal shall be of such scope and depth to sufficiently describe and demonstrate the proposer's understanding, approach, and qualifications to successfully complete the scope of services described herein. Submittal of incomplete or vague responses to any section or subsection of this RFP may result in rejection of the proposal. Proposals will be evaluated, scored, and ranked based on the criteria specified in the table below. The evaluation criteria listed in the OCWD Proposal Evaluation Form (**Exhibit B**) will be used to evaluate each proposer.

Item No.	Criteria for Proposal Evaluations	Maximum Points
1	Experience and Qualifications of the Project Team	50
2	Record of Success on Recent Similar Project (includes the record of past performance in delivering such services)	25
3	Price Proposal	25
<b>TOTAL POINTS:</b>		<b>100</b>

The District reserves the right to award the contract to the firm who presents the proposal, which in the judgment of the District, best accomplishes the desired results based upon



## OCWD RFP-25-006 - Injection Well Redevelopment

this information, OCWD staff will recommend a firm to OCWD's Board of Directors for award of the contract. The selected firm must be able to begin work immediately upon award of the contract and must be able to maintain the required level of effort to meet the proposed schedule.

### **9. SPECIAL CONDITIONS**

#### **9.1. RESERVATIONS**

This RFP does not commit the District to award a contract, to defray any costs incurred in the preparation of a Proposal pursuant to this RFP or to procure or contract for work.

#### **9.2. PUBLIC RECORDS**

All Proposals submitted in response to this RFP become the property of the District and are public records and as such may be subject to public review.

#### **9.3. RIGHT TO CANCEL**

The District reserves the right to cancel, for any or no reason, in part or in its entirety, this RFP including but not limited to: selection schedule, submittal date, and submittal requirements. If the District cancels or revises the RFP, the District will notify all the proposers in writing via email.

#### **9.4. ADDITIONAL INFORMATION**

The District reserves the right to request additional information and/or clarifications from any or all Proposers.

#### **9.5. PUBLIC INFORMATION**

Release of Public Information selection announcements, contract awards, and all data provided by the District shall be protected from public disclosure. Proposers desiring to release information to the public must receive prior written approval from the District.



# EXHIBITS



# **EXHIBIT A**

## **SCOPE OF SERVICES AND COST PROPOSAL SHEET**



# **EXHIBIT A-1:**

# **SCOPE OF SERVICES**

## PHASE I – LEGACY WELLS

- A. Legacy Well Redevelopment Background - Orange County Water District (OCWD) Talbert injection wells were completed in 1973 as nested wells having between 1 and 4 casings per borehole (well site). Figure 1 shows the location of each well site. Figure 1 also indicates the location of wells proposed to be completed under this agreement. Well depths range between 95 and 405 feet below ground surface. Each casing was constructed of 6-inch diameter stainless steel blank casing and 6-inch diameter stainless steel louvered well perforations (louver size = 1/8-inch by 2-inch). The blank casing above the well perforations developed corrosion holes and have all been lined using 4-inch diameter schedule 40, flush-threaded, PVC liners. The bottom of each liner has been completed using a thin wall stainless steel “figure-K” packer which forms an abrupt 90° ledge with the 6-inch casing. All tools, hard pipe, and instruments installed into the wells will be flush threaded. To insure that couplings don’t “hang-up” at the base of the liner causing deformation of the liner, ***no coupled pipe will be allowed inside Legacy Wells.*** All pipe must be able to accommodate high pressure required to complete this scope of services. Any damage to the well or liner caused by the contractor shall be repaired or replaced using an OCWD approved method at the contractors expense. Any tools lost by contractor down-well shall be retrieved by the contractor at the contractor’s expense.

All wells are completed below ground surface in 10-foot deep vaults. All vaults are non-permit (C-5) confined spaces and should be noted as possibly in artesian condition. At any one time, no more than one rig and crew will be utilized on this project. A two man crew consisting of one operator and one helper has worked well in the past.

- B. Initial Mobilization - Contractor to mobilize all equipment, materials, tools and personnel to Fountain Valley, CA. Mobilization shall include the purchase of any required bonds, submission of Health and Safety Plan specifically written for the project as described, daily transportation or per diem for personnel assigned to project, equipment and operating supplies to the central equipment staging area and other necessary preparatory work at the site to begin to conduct redevelopment operations. Contractor shall purchase all encroachment permits, inspection fees or business licenses necessary and pay all state sales tax. Contractor will submit all material receipts to OCWD for reimbursement payment at cost plus 15% including applicable tax. Contractor shall provide an operational personal air monitoring device to be worn while working inside well vaults. The device shall monitor at a minimum, the following constituents: low oxygen levels, hydrogen sulfide gas, carbon monoxide gas and lower explosive limit. Contractor shall keep a log of the air monitoring levels observed during every entry. Contractor’s logs shall be submitted to OCWD.

Contractor will also be attending by-weekly work progress meetings. During these meetings Contractor and OCWD staff will review progress of work and proposed schedule for upcoming work. Invoices will be reviewed and discussed.

- C. Project Execution – Contractor shall provide all plumbing fittings, hoses necessary for discharge (4-inch diameter, length of 700 feet). All well redevelopment work conducted by the contractor shall be done in compliance with all permits, inspections and City ordinances (including noise and traffic control).

## NON-RIG OPERATION

### A. Daily Mobilization/Demobilization

1. Mobilization and Equipment Staging - Contractor may safely stage equipment at the off-Ellis Ave well site locations at the discretion of the City of Fountain Valley. At well sites requiring Ellis Avenue Lane Closures, contractor will need to mobilize all equipment to the well site each day and remove all equipment at the end of each working day. The length of time available to work at each well site is determined by the City of Fountain Valley traffic engineer and may vary between well sites. Contractor may stage equipment necessary to complete the scope of work at the OCWD Fountain Valley facility. Equipment includes pump rig that is capable of working within a single traffic lane of Ellis Avenue without exceeding the lane width, support vehicles, compressors, settlement tanks, hard pipe/eductor pipe, bottom hole sounder, gauges and any other equipment necessary to perform work as described herein. Contractor is responsible for receiving delivery of any equipment or supplies delivered for this project.

Many Legacy Well sites will require traffic lane and/or sidewalk closure for site access. All lane closures are to be set per the City. Contractor shall provide all necessary traffic control permits and equipment, set-up and take down lane closure equipment each day. Contractor shall ensure that all equipment required to redevelop Legacy wells fits inside one traffic lane. General working hours are dictated by the City of Fountain Valley, depending on nature and location of work, but work will take place approximately 8 working hours per day. No work will take place overnight. No work will be performed on weekends and OCWD designated holidays without prior written approval.

2. Payment - Payment for daily mobilization/ demobilization including all necessary traffic control shall be made at the non-rig man hour billing rate. Should the contractor elect to subcontract traffic control services, the Contractor will submit all material receipts to OCWD for reimbursement

payment at cost plus 15% including applicable tax. Mobilization shall include all work necessary to prepare a particular site for commencement of rehabilitation activities. Daily mobilization shall include compliance with all permits, inspections, city ordinances (noise and traffic control) and transportation of all necessary personnel, equipment and operating supplies to and from the site, and other necessary preparatory work at the site to begin to conduct redevelopment operations. Daily demobilization shall include removal of all necessary equipment such that normal traffic flow can be restored at the site at the time directed by the City.

B. Miscellaneous Labor (Non-Rig) Activities

1. Wellhead Access - Contractor will dismantle the injection wellhead manifold from each well point at the well site. Note to contractor: these wells are in vaults and the wells maybe under artesian conditions. Contractor will deliver the manifold assembly and the eductor pipe removed under rig operations to the temporary storage area and cover with a tarp. Provide and install temporary riser extension from the top of casing (6-inch flange) to near ground level. Contractor shall cover the electrical instrumentation in the well vault with plastic sheeting. Upon completion of well redevelopment, Contractor shall reinstall manifold piping and assist in any activities necessary to prepare the well for service. Care shall be taken when tightening plastic flanges as over-tightening may cause cracking. Contractor shall provide and employ sturdy temporary planking while working over open vault. Contractor will place timbers under rig hydraulic stabilizers to prevent indenting street surface.
2. Fabrications - Contractor when required will fabricate various specialized tools as deemed necessary to complete the scope of work. OCWD will notify Contractor when such fabrications are proposed or required. These fabrications are separate from any fabricating necessary to complete the work as described herein under "non-rig" or "rig" operations where general fabrication is required to complete those tasks as defined. Contractor shall purchase all necessary materials and parts and pay all state sales tax. Contractor will submit all material receipts to OCWD for reimbursement payment at cost plus 15% including applicable tax.
3. Static Water Level Measurements - At the beginning of each day as directed, Contractor shall measure the static water levels in each of the injection well casings. Contractor will measure the static water level using an electric sounder provided by OCWD. Water levels will be measured to the nearest 100<sup>th</sup> of a foot. All water level measurements will be made relative to ground surface using a reference point specified by the OCWD field geologist. All water levels shall be recorded on OCWD forms.

4. Gravel Feed Tube Maintenance - Before and after well redevelopment activities, Contractor shall measure the level of each gravel feed tube at the site. Levels will be measured using a bottom-hole sounder. If gravel levels are low, Contractor will replenish tubes to the surface using OCWD approved filter pack. All caps must be secured to be watertight.
5. Submittals - Prior to the initial mobilization, Contractor will submit the following for OCWD staff approval: a detailed account of tools to be used including all pipe, all airlines and all hoses, site lay-out, process methodology, fluid handling and crew experience. Include the type of work-over equipment to be used to pull and remove downhole tools. Previous contractors have had issues with the portable cranes fitting within the traffic lanes based on the vehicles foot print.

Contractor will be required to submit an accurate account of all rig and non-rig hours (straight time and overtime) daily. Overtime will be paid at the rate prescribed for the type of work which required that day's total hours to exceed 8 regular hours. Contractor will record these hours daily on a form for OCWD processing. These forms will be submitted to the OCWD field geologist daily for signature.

Upon request, and where applicable, Contractor shall furnish proof of calibration of instruments.

6. Miscellaneous - Contractor will conduct various miscellaneous non-rig operations. The activities include, but are not limited to, measuring and adding gravel to the gravel feed tubes and removing sediment from the bottom of the settlement tank. Debris at the bottom of the tank is to be cleaned out as necessary at the discretion of the OCWD geologist. A disposal area at the OCWD yard will be designated for the debris removed from the settlement tank(s). Following completion of redevelopment activities, Contractor shall clean-up well vaults and sumps to the satisfaction of OCWD staff.
- C. Payment - Payment for "non-rig" operations, excluding mobilization/demobilization/traffic control set-up, "rig operations", and daily usage of a high pressure/high volume air compressor also included in this scope of work, will be made at the unit price bid per hour under "straight" or "overtime" line items. The time required for activities will be recorded by the hour with 15-minute intervals as the smallest unit of recorded time. Overtime rates apply after a total of 8 hours have been worked in one day. Overtime will be paid at the rate prescribed for the type of work which required that day's total hours to exceed 8 regular hours. Contractor will record these hours daily on a form provided by OCWD. These forms will be submitted to the OCWD field geologist daily for signature. No payment will be made for delays resulting from (1) equipment stuck in the

hole; (2) equipment breakdown or routine maintenance done at the site; (3) failure to conduct the operations in a diligent and workmanlike manner by which the desired results could ordinarily be expected.

## RIG OPERATIONS

- A. General Specifications - The Contractor shall provide the hoist rig unit for the redevelopment of all Talbert Injection Barrier wells. The hoist rig shall include all necessary tools, pipe, sounders, accessories, fuel, materials and supplies necessary to conduct a safe and efficient well redevelopment operation. Contractor to provide a pump hoist or crane rated to lift the total combined weight of the heaviest pipe string at the required boom angle and distance. The hoist or crane rated lift capacity specifications must include a minimum 3:1 factor of safety per the equipment manufacturers specifications. Contractor shall also provide an air compressor with air-line(s), eductor pipe and appropriate fittings. Any air compressors shall be of ample size for maximum airlifting capabilities (minimum 140 pounds per square inch at 400 cubic feet per minute). Any air compressors shall have an effective external air-oil separator and equipped with a silencing muffler on the air-line dump valve.

Contractor shall also provide associated equipment including, but not limited to, air compressor hoses and associated fittings, all required fuel, necessary discharge hoses, settlement tanks, transfer pumps, and a discharge head. The Contractor shall fabricate a 4-inch diameter discharge head to accommodate maximum air-lift discharge flow. The Discharge head shall be fitted with a dump valve capable of discharging "downhole" air to the atmosphere equipped with the silencing air muffler. The Contractor shall provide pressure gages where needed, assume at least two gages will be needed with minimum features such as 0-160 psig range, liquid filled and dampener with 5 psi increments on the gauge face.

Talbert injection wells will be redeveloped using high volume purging and surging. During rig operations Contractor may be directed to collect water levels in surrounding well casings and record various observations for the OCWD field geologist. Contractor may be required to collect water samples and water quality field parameters as directed by the OCWD field geologist.

1. Wellhead Access - Contractor will pull up to 100 feet of 3-inch Sch. 40, F-480 flush threaded eductor pipe from each well point at the well site. This pipe is to be covered and staged neatly out of sunlight. Upon completion of well redevelopment, Contractor shall reinstall eductor pipes, headers and assist in any activities necessary to prepare the well for service.
- B. High Volume Purge - High volume purging of injection wells will be achieved using the air-lift method utilizing the well as the eductor. The air-line shall be constructed of flush-treaded 1.25-inches in diameter pipe. The bottom of the air-

line must have a 1.25 inch fitting (“turn-around-tool”) to direct the flow of all air upward. An air-line submergence of at least 60% (minimum) to 80% (maximum) is recommended for purge rates up to 250+ gpm using a 140psi/400 scfm (minimum) compressor. (Flush joint PVC has been used with past contractors with suitable results but some steel should be used near the discharge head to avoid fishing.) All return fluids shall be passed through an OCWD provided 4,000-gallon settlement tank. The settlement tank inlet contains a hydrocyclone. There is a 4-inch threaded nipple inlet with a male aluminum camlock fitting into the hydrocyclone. The tank is equipped with five baffles to capture suspended sediment. For draining purposes, the tank is outfitted with several 3-inch diameter butterfly valves equipped with 3-inch female camlock fittings. Contractor shall bring appropriate fittings to plumb appropriate hose(s) to the settlement tank.

Depending on the water quality, purge water will be either discharged to the nearest storm drain or sewer man-hole. The OCWD field geologist will determine where fluids are disposed. Delays in purging work (i.e. stand-by) resulting from transportation of fluids off site shall be paid at the “non-rig” operations hourly rate for each man-hour the rig is on stand-by. If no disruption in rig activities occurs then no additional payment will be made.

- C. Bottom-Hole Cleanout - If directed, Contractor shall remove fill material from the bottom of each well. Fill material shall be air-lifted. Air-lifting techniques shall include using a maximum 2.5-inch outer diameter flush-thread pipe eductor. The size of the air-line shall be ½-inch or 1 ¼-inch internal diameter. (Flush joint PVC has been used with past contractors with suitable results but some steel should be used near the discharge head to avoid fishing.) Upon completion, Contractor will measure and record the bottom of each well using a bottom hole sounder as direct by OCWD field staff.
- D. Payment - Payment for “rig” operations, excluding mobilization/ demobilization/ traffic control set-up, “non-rig operations”, and daily usage of a high pressure/high volume air compressor also included in this scope of work, will be made at the unit price bid per hour under “straight” or “overtime” line items. Overtime rates apply after a total of 8 hours have been worked in one day. Overtime will be paid at the rate prescribed for the type of work which required that day’s total hours to exceed 8 regular hours. Contractor will record these hours daily on a form for OCWD processing. These forms will be submitted to the OCWD field geologist daily for signature. The time required for activities will be recorded by the hour with 15-minute intervals as the smallest unit of recorded time. No payment will be made for delays resulting from (1) equipment stuck in the hole; (2) equipment breakdown or routine maintenance done at the site; (3) failure to conduct the operations in a diligent and workmanlike manner by which the desired results could ordinarily be expected.

## MISCELLANEOUS

A. OCWD Personnel and Equipment Provided for Project

1. Barrier Operator/Field Geologist – Supervise field operations, develop and adjust well rehabilitation program, provide field documentation, monitor and sample discharge per NPDES and County of Orange permits obtained by OCWD.
2. Multibed truck to move desilting bin (settlement tank).
3. Water level indicator (graduated in 100<sup>th</sup> of foot).
4. Water quality monitoring equipment.
5. Down-hole video survey equipment.
6. 4,000-gallon capacity settlement tank.

B. Contractor-Provided Personnel and Equipment for Project:

1. Lead Operator – The “lead” operator must have a minimum of 5 years airlifting experience in the form of reverse circulation drilling or well development (redevelopment). The “lead” operator must have a minimum of 2 years experience airlifting with flow rates greater than 500 gpm. The “lead” operator shall direct site operations as pertains to rig and work described herein and as directed by OCWD.
2. Operator Assistant – Assist “lead” operator and OCWD field geologist as directed by operator and OCWD field geologist. Assistant to have minimum 2 years experience working with development rig.
3. Project Manager – Minimum five (5) years’ experience supervising well development activities. Responsibilities include: project coordination, scheduling, billing, attending meetings and responsible for ensuring overall success of project.
4. All lane closure equipment per City of Fountain Valley Handbook, including city encroachment permit.
5. Well Development Rig.
6. Air compressors, various sizes specified herein.
7. Pipe, heavy duty hoses, fittings, possibly including 700+ feet of 4-inch diameter discharge hose.

8. Fluid transfer pumps (trash pumps) (each pump must be equipped with operational muffler that significantly reduces unit output noise and complies with City noise ordinances).
9. Fittings.
10. Bottom-hole sounder.
11. Fuel for all Contractor supplied equipment.
12. Air-line and air-lift discharge head equipped with silencing air muffler and whip check safety restraints for each joint of hose and the two ends.
13. Personal air monitoring device to be worn while working inside well vaults. The device shall monitor for low oxygen levels, hydrogen sulfide gas, carbon monoxide gas and lower explosive limit.
14. Blind flanges with 1/2" threaded outlet (for pressure gauges). Minimum of three (3) maybe required.
15. Minimum 500-gallon portable open top tank to transfer fluids from the well into an OCWD-provided settlement tank. The portable open top transfer tank must have secure influent and effluent hose connections.

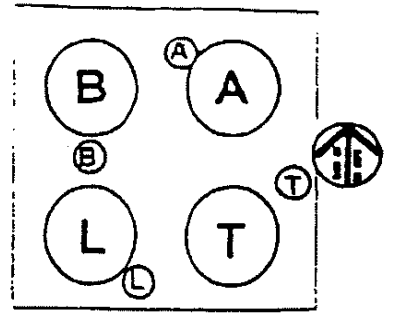


OCWD Legacy Injection Well As-Built Drawings

Well Identification  
 Date Started 10/5/72 Completed 10/14/72  
 Driller Beylik

State Well 05S/10W-32J00  
 Number  
 Station ID 3870

Wellhead Design



## Well Design I-1

**Blank Casing & Perforated Casing**  
**Depths**  
 Below Ground Surface  
 (in Feet)

Depth of 32-inch Dia. Conductor Casing 63

**Top Talbert Perfs 65**

Length Talbert Perfs 35

**Bottom Talbert Perfs 100**

**Top Alpha Perfs 150**

Length Alpha Perfs 50

**Bottom Alpha Perfs 200**

**Top Beta Perfs 235**

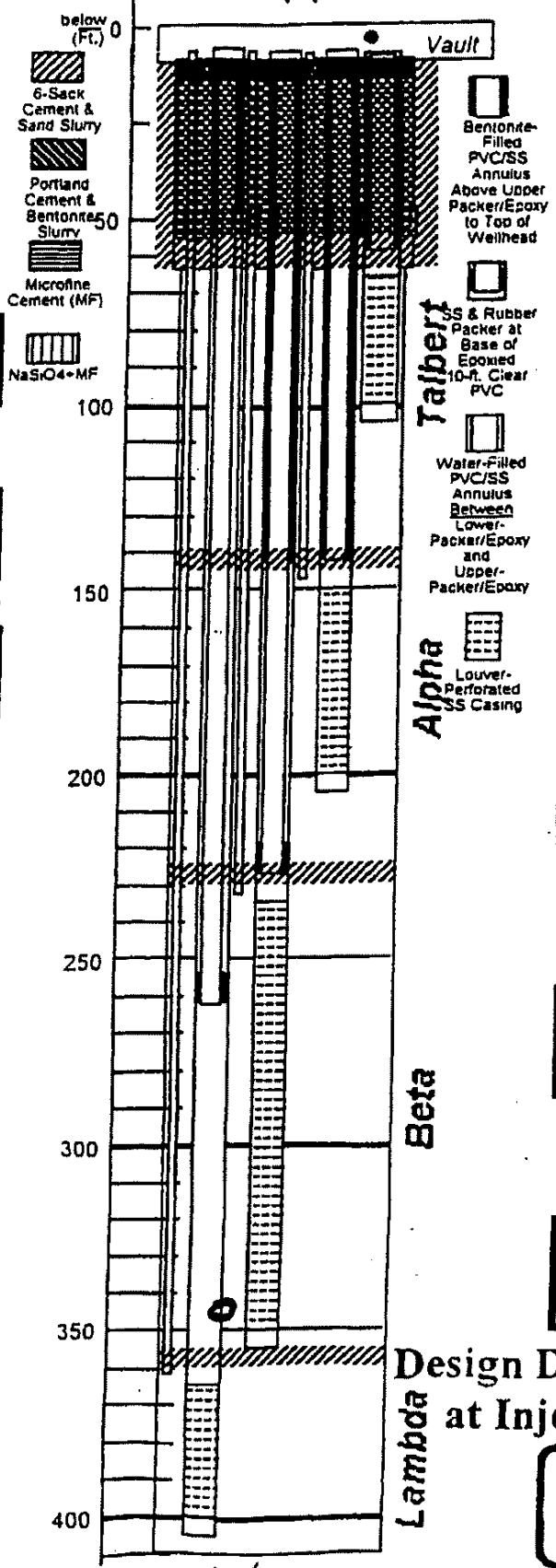
Length Beta Perfs 115

**Bottom Beta Perfs 350**

**Top Lambda Perfs 365**

Length Lambda Perfs 35

**Bottom Lambda Perfs 400**



Depth to Pedestal Top

**Liner Depths**  
 Below Top of Wellhead Flange  
 (in Feet)  
 CAUTION: Add Length from Hatch Cover to Wellhead Flange to Calculate Depth Below Ground Surface

**Talbert Liner Bottom 50**

Alpha Upper Packer NA

**Alpha Liner Bottom 135**

Beta Upper Packer 135

**Beta Liner Bottom 220**

Lambda Upper Packer 40

**Lambda Liner Bottom 255**

Design Details for Wells & Liner at Injection Wells Vault Site

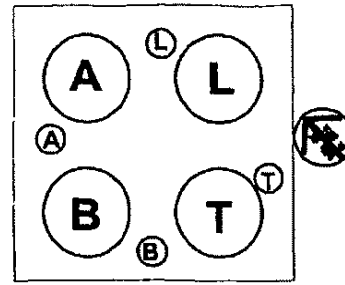
**OCWD-I-1**

# Well/Vault Identification OCWD-I-4

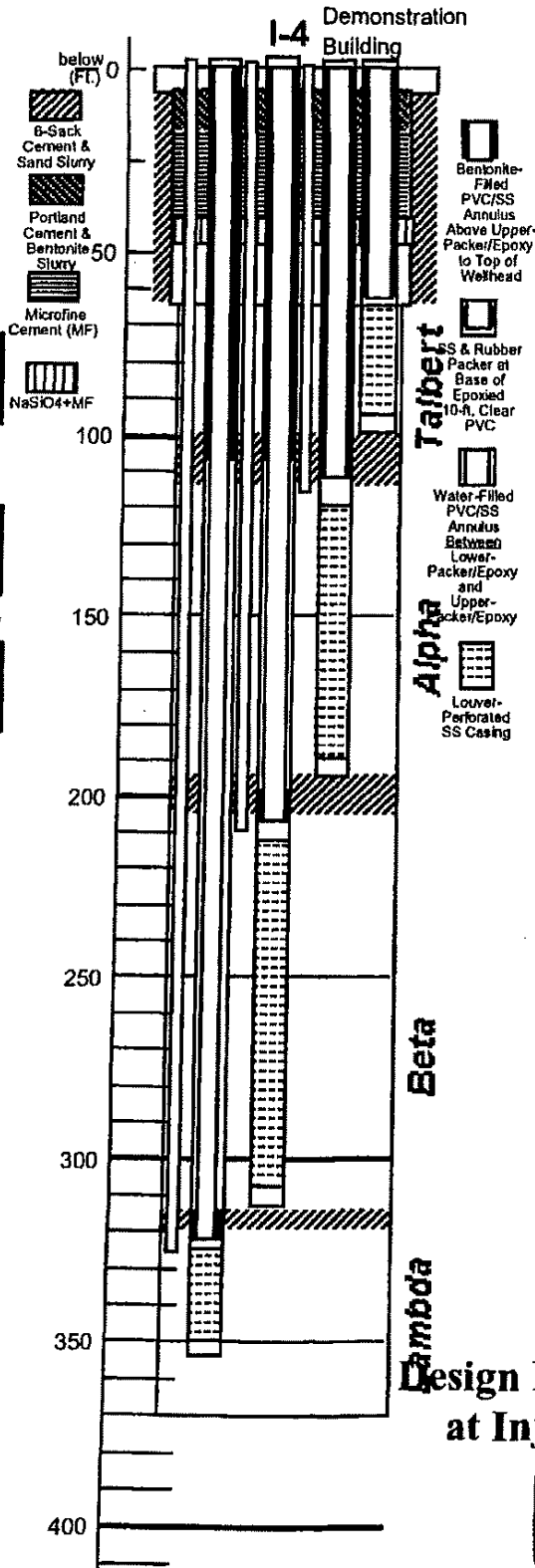
Date Started 1/8/1968 Completed  
Driller Beylik

State Well 05S/10W-32K39  
Number  
Station ID 4469

## Well Head Design



## Well Design



### Blank Casing & Perforated Casing

**Depths**  
Below Ground Surface  
(in Feet)

Depth of 32-inch Dia. 65  
Conductor Casing

**Top Talbert Perfs 59**

Length Talbert Perfs 30

**Bottom Talbert Perfs 89**

**Top Alpha Perfs 120**

Length Alpha Perfs 70

**Bottom Alpha Perfs 190**

**Top Beta Perfs 212**

Length Beta Perfs 95

**Bottom Beta Perfs 307**

**Top Lambda Perfs 325**

Length Lambda Perfs 25

**Bottom Lambda Perfs 350**

### Depth to Pedestal Top

**Liner Depths**  
Below Top of Wellhead Flange  
(in Feet)  
**CAUTION: Add Length from Hatch Cover to Wellhead Flange to Calculate Depth Below Ground Surface**

**Talbert Liner Bottom 55**

**Alpha Upper Packer NA**

**Alpha Liner Bottom 110**

**Beta Upper Packer 105**

**Beta Liner Bottom 205**

**Lambda Upper Packer 100**

**Lambda Liner Bottom 320**

## Design Details for Wells & Liners at Injection Wells Vault Site

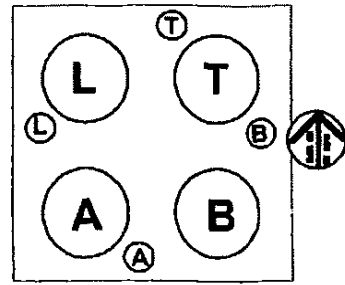
**OCWD-I-4**

# Well/Vault Identification **OCWD-I-5**

Date Started \_\_\_\_\_ Completed 1/19/1968  
 Driller Roscoe Moss

State Well 05S/10W-32K35  
 Number  
 Station ID 3881

## Well Head Design



### Blank Casing & Perforated Casing Depths

Below Ground Surface (in Feet)

Depth of 32-inch Dia. 75  
 Conductor Casing

**Top Talbert Perfs 70**

Length Talbert Perfs 25

**Bottom Talbert Perfs 95**

**Top Alpha Perfs 115**

Length Alpha Perfs 65

**Bottom Alpha Perfs 180**

**Top Beta Perfs 210**

Length Beta Perfs 55

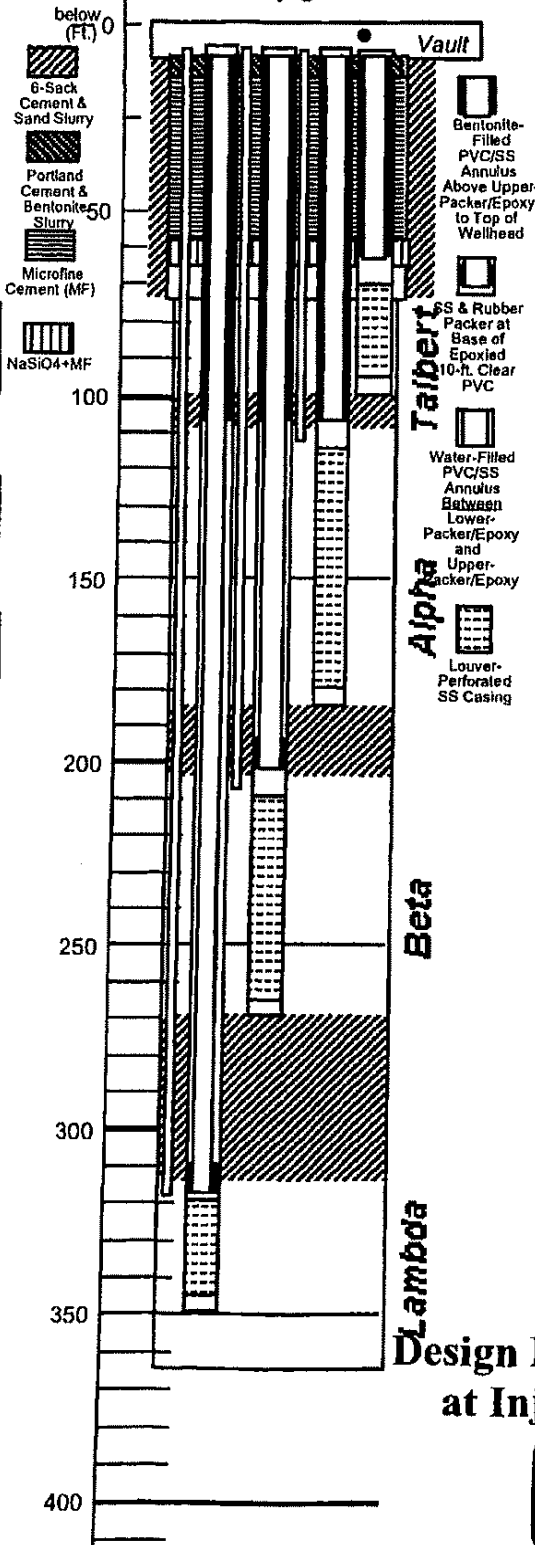
**Bottom Beta Perfs 265**

**Top Lambda Perfs 320**

Length Lambda Perfs 25

**Bottom Lambda Perfs 345**

## Well Design I-5



### Depth to Pedestal Top

#### Liner Depths Below Top of Wellhead Flange (in Feet)

**CAUTION: Add Length from Hatch Cover to Wellhead Flange to Calculate Depth Below Ground Surface**

**Talbert Liner Bottom 60**

**Alpha Upper Packer NA**

**Alpha Liner Bottom 100**

**Beta Upper Packer 100**

**Beta Liner Bottom 190**

**Lambda Upper Packer 100**

**Lambda Liner Bottom 300**

### Design Details for Wells & Liners at Injection Wells Vault Site

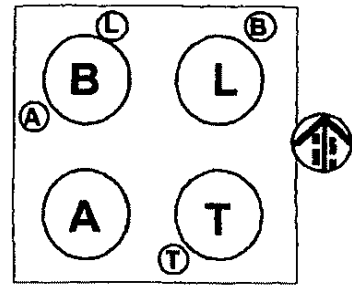
**OCWD-I-5**

# Well/Vault OCWD-I-7 Identification

Date Started 12/22/1972 Completed  
Driller Unknown

State Well 05S/10W-32F00  
Number  
Station ID 3891

## Well Head Design



## Well Design I-7

### Blank Casing & Perforated Casing Depths Below Ground Surface (in Feet)

Depth of 32-inch Dia. 68  
Conductor Casing

**Top Talbert Perfs 70**

Length Talbert Perfs 25

**Bottom Talbert Perfs 95**

**Top Alpha Perfs 110**

Length Alpha Perfs 40

**Bottom Alpha Perfs 150**

**Top Beta Perfs 165**

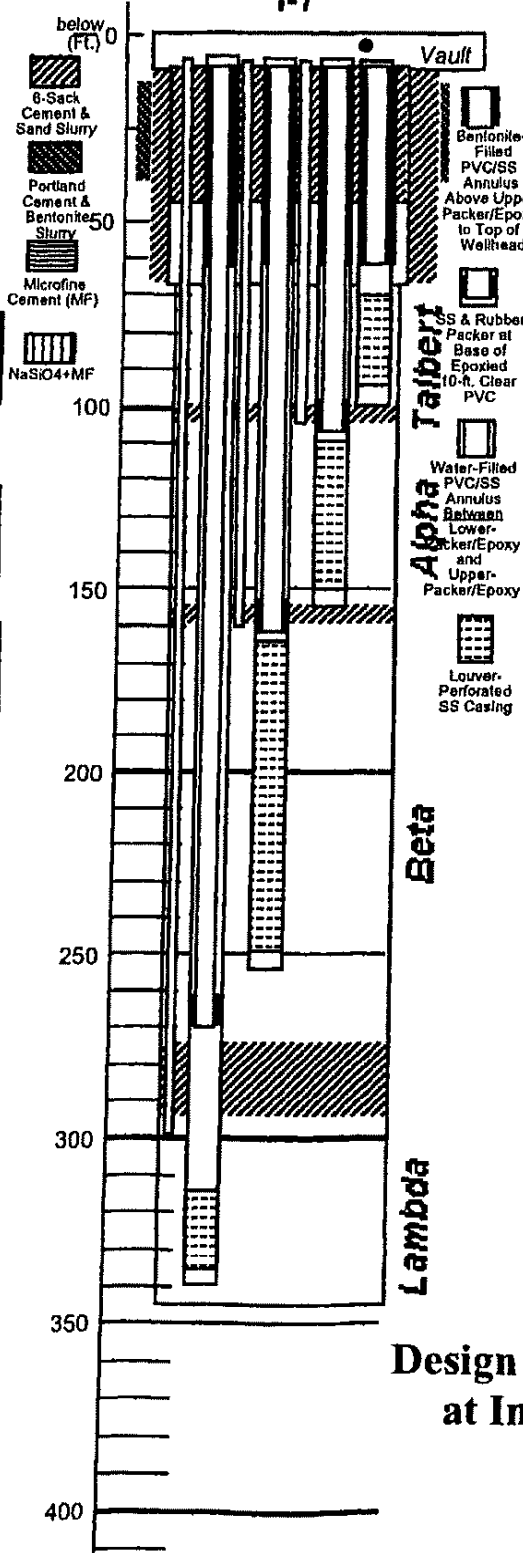
Length Beta Perfs 85

**Bottom Beta Perfs 250**

**Top Lambda Perfs 315**

Length Lambda Perfs 21

**Bottom Lambda Perfs 336**



### Depth to Pedestal Top

#### Liner Depths Below Top of Wellhead Flange (in Feet)

**CAUTION: Add Length from Hatch Cover to Wellhead Flange to Calculate Depth Below Ground Surface**

**Talbert Liner Bottom 50**

**Alpha Upper Packer 50**

**Alpha Liner Bottom 95**

**Beta Upper Packer 50**

**Beta Liner Bottom 150**

**Lambda Upper Packer 50**

**Lambda Liner Bottom 260**

## Design Details for Wells & Liners at Injection Wells Vault Site

**OCWD-I-7**

# Well/Vault OCWD-I-11 Identification

State Well 05S/10W-31H00  
 Number  
 Station ID 3911

Date Started 10/24/1972 Completed 11/1/1972

Driller Beylik

## Well Design I-11

### Blank Casing & Perforated Casing Depths

Below Ground Surface (in Feet)

Depth of 32-inch Dia. Conductor Casing **63**

**Top Talbert Perfs 65**

Length Talbert Perfs 30

**Bottom Talbert Perfs 95**

**Top Alpha Perfs 115**

Length Alpha Perfs 65

**Bottom Alpha Perfs 180**

**Top Beta Perfs 200**

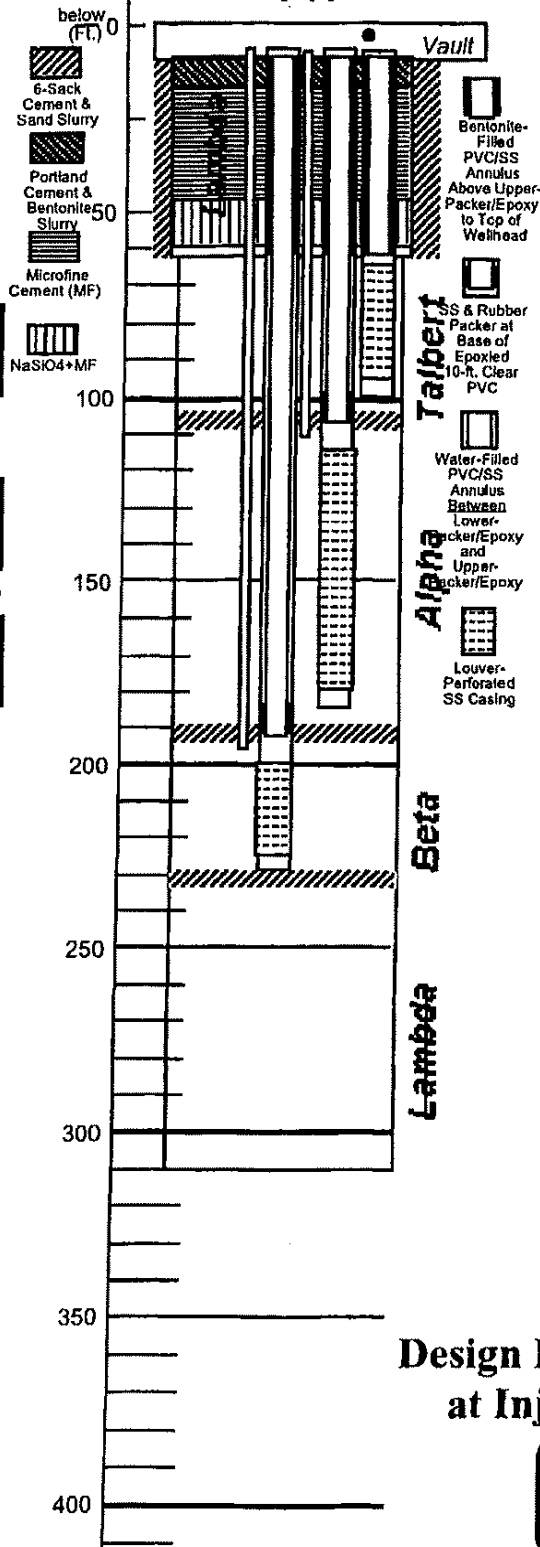
Length Beta Perfs 25

**Bottom Beta Perfs 225**

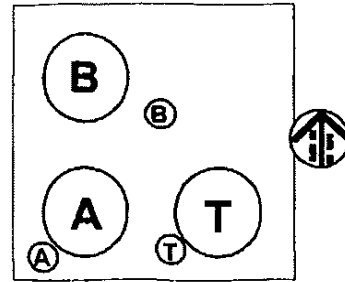
**Top Lambda Perfs**

Length Lambda Perfs

**Bottom Lambda Perfs**



## Well Head Design



### Depth to Pedestal Top

**Liner Depths Below Top of Wellhead Flange (in Feet)**  
 CAUTION: Add Length from Hatch Cover to Wellhead Flange to Calculate Depth Below Ground Surface

**Talbert Liner Bottom 55**

**Alpha Upper Packer 55**

**Alpha Liner Bottom 100**

**Beta Upper Packer 55**

**Beta Liner Bottom 185**

**Lambda Upper Packer NA**

**Lambda Liner Bottom NA**

## Design Details for Wells & Liners at Injection Wells Vault Site

**OCWD-I-11**

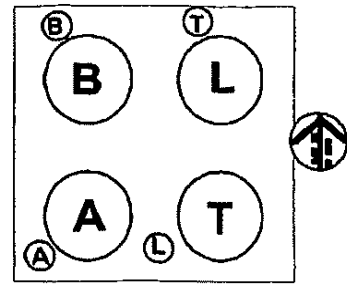
# Well/Vault Identification **OCWD-I-12**

Date Started 11/20/1972 Completed  
Driller Beylik

State Well 05S/10W-31G00  
Number  
Station ID 3915

## Well Design I-12

## Well Head Design



### Blank Casing & Perforated Casing Depths Below Ground Surface (in Feet)

Depth of 32-inch Dia. 60 Conductor Casing

**Top Talbert Perfs 60**

Length Talbert Perfs 35

**Bottom Talbert Perfs 95**

**Top Alpha Perfs 110**

Length Alpha Perfs 55

**Bottom Alpha Perfs 165**

**Top Beta Perfs 180**

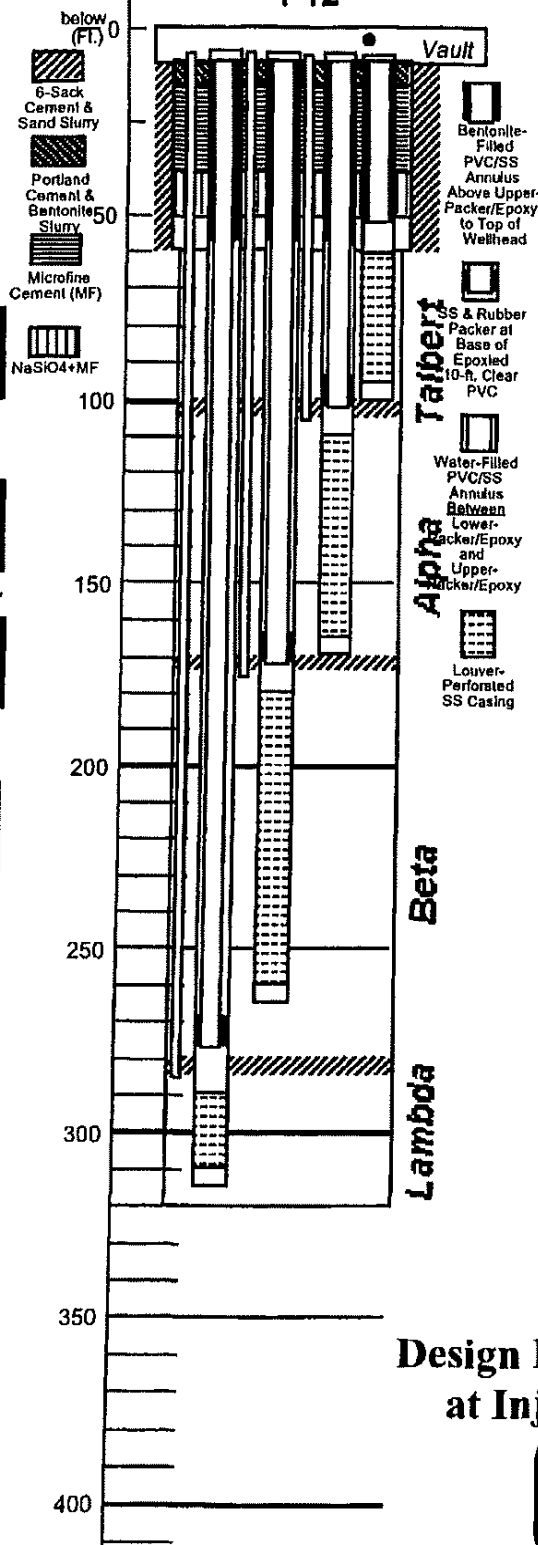
Length Beta Perfs 80

**Bottom Beta Perfs 260**

**Top Lambda Perfs 290**

Length Lambda Perfs 20

**Bottom Lambda Perfs 310**



### Depth to Pedestal Top

### Liner Depths Below Top of Wellhead Flange (in Feet)

**CAUTION: Add Length from Hatch Cover to Wellhead Flange to Calculate Depth Below Ground Surface**

**Talbert Liner Bottom 45**

**Alpha Upper Packer 50**

**Alpha Liner Bottom 95**

**Beta Upper Packer 50**

**Beta Liner Bottom 165**

**Lambda Upper Packer 50**

**Lambda Liner Bottom 270**

## Design Details for Wells & Liners at Injection Wells Vault Site

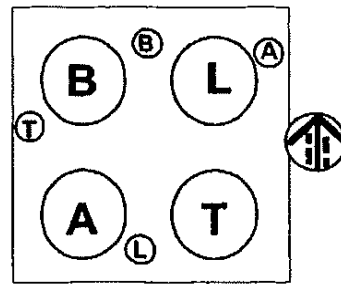
**OCWD-I-12**

# Well/Vault Identification **OCWD-I-13**

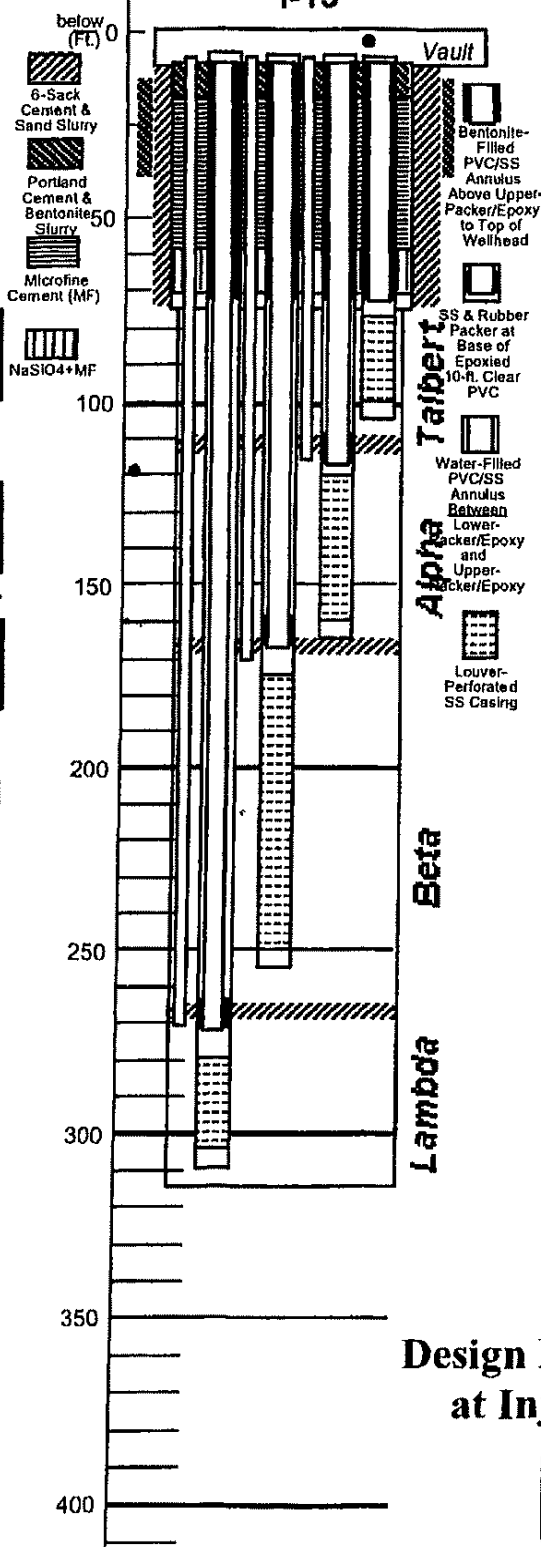
State Well 05S/10W-31G00  
 Number  
 Station ID 3920

Date Started  
 Completed 10/21/1972  
 Driller Baylik

## Well Head Design



## Well Design I-13



**Blank Casing & Perforated Casing**  
**Depths**  
 Below Ground Surface  
 (in Feet)

Depth of 32-inch Dia. 76  
 Conductor Casing

**Top Talbert Perfs 77**

Length Talbert Perfs 23

**Bottom Talbert Perfs 100**

**Top Alpha Perfs 120**

Length Alpha Perfs 40

**Bottom Alpha Perfs 160**

**Top Beta Perfs 175**

Length Beta Perfs 75

**Bottom Beta Perfs 250**

**Top Lambda Perfs 280**

Length Lambda Perfs 25

**Bottom Lambda Perfs 305**

### Depth to Pedestal Top

**Liner Depths**  
 Below Top of Wellhead Flange  
 (in Feet)  
**CAUTION: Add Length from Hatch Cover to Wellhead Flange to Calculate Depth Below Ground Surface**

**Talbert Liner Bottom 65**

**Alpha Upper Packer 65**

**Alpha Liner Bottom 110**

**Beta Upper Packer 65**

**Beta Liner Bottom 160**

**Lambda Upper Packer 65**

**Lambda Liner Bottom 265**

## Design Details for Wells & Liners at Injection Wells Vault Site

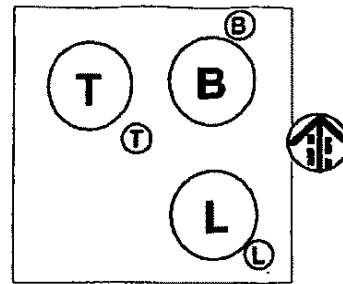
**OCWD-I-13**

# Well/Vault Identification **OCWD-I-17**

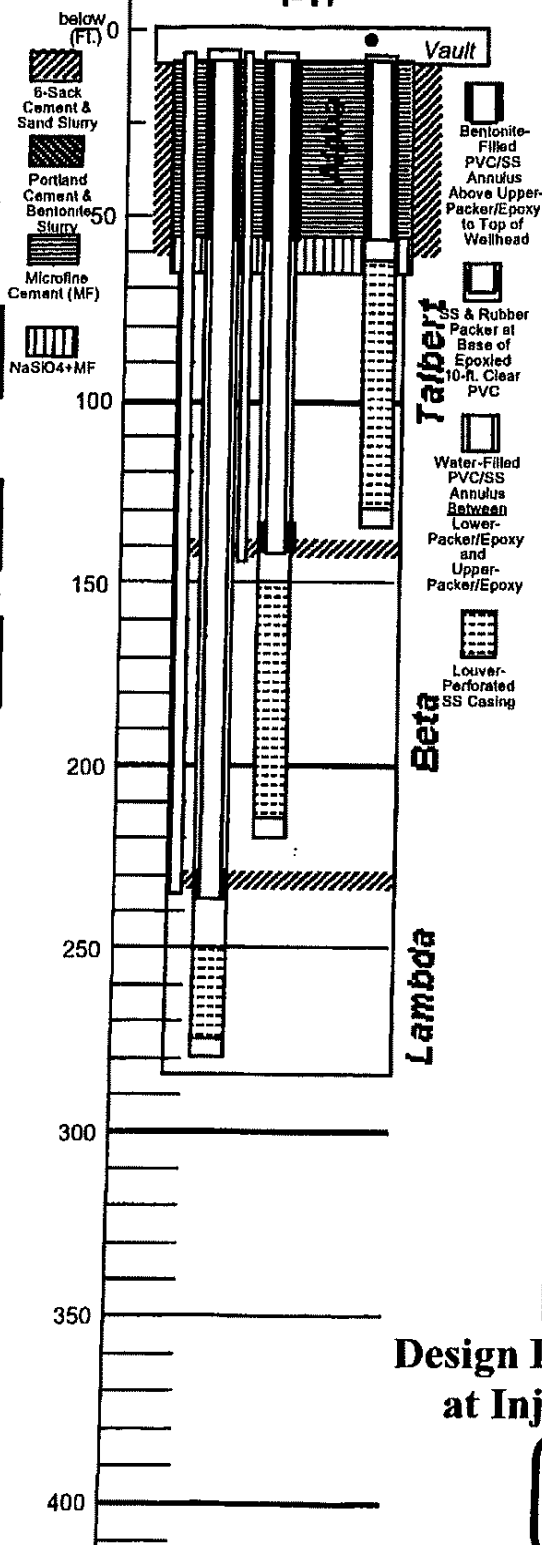
Date Started 8/20/1972 Completed 8/21/1972  
Driller Beylik

State Well 05S/10W-31E00  
Number  
Station ID 3939

## Well Head Design



## Well Design I-17



### Blank Casing & Perforated Casing Depths Below Ground Surface (in Feet)

Depth of 32-inch Dia. Conductor Casing **62**

**Top Talbert Perfs 62**

Length Talbert Perfs **68**

**Bottom Talbert Perfs 130**

**Top Alpha Perfs NA**

Length Alpha Perfs **NA**

**Bottom Alpha Perfs NA**

**Top Beta Perfs 150**

Length Beta Perfs **65**

**Bottom Beta Perfs 215**

**Top Lambda Perfs 250**

Length Lambda Perfs **25**

**Bottom Lambda Perfs 275**

### Depth to Pedestal Top

**Liner Depths Below Top of Wellhead Flange (in Feet)**  
**CAUTION: Add Length from Hatch Cover to Wellhead Flange to Calculate Depth Below Ground Surface**

**Talbert Liner Bottom 50**

**Alpha Upper Packer NA**

**Alpha Liner Bottom NA**

**Beta Upper Packer NA**

**Beta Liner Bottom 135**

**Lambda Upper Packer 135**

**Lambda Liner Bottom 235**

## Design Details for Wells & Liners at Injection Wells Vault Site

**OCWD-I-17**

## PHASE II SCOPE OF WORK – MODERN WELLS

- A. Well Redevelopment Background - Orange County Water District (OCWD) Talbert Barrier Modern Injection Wells were completed between 2000 and 2006 as one 12-inch casing per borehole. Figure 2 shows the location of each Modern Injection Well proposed to be redeveloped under this agreement. Well depths range between 140 and 685 feet below ground surface. Each casing was constructed of 12-inch diameter stainless steel blank casing and 12-inch diameter stainless steel wire wrap well perforations. Any tools lost by contractor down-well shall be retrieved by the contractor at the contractor's expense. Modern Injection Wells are not located in or near public roadways. No encroachment permits are required to work on Modern Wells. All Modern Well sites have a storm drain catchment on-site. Discharge permitting, monitoring and reporting will be conducted by OCWD staff. All discharges under the Phase II scope of work will be conducted using OCWD's NPDES permit.

All wells are completed above ground surface. At any one time, no more than one rig and crew will be utilized on this project.

- B. Project Start-up - Contractor to mobilize all equipment, materials, tools and personnel to Fountain Valley, CA. Mobilization shall include the purchase of any required bonds, encroachment permits, inspection fees or business licenses, submission of Health and Safety Plan specifically written for the project as described, daily transportation or per diem for personnel assigned to project, equipment and operating supplies to the central equipment staging area and other necessary preparatory work at the site to begin to conduct redevelopment operations.

Contractor will also be attending by-weekly work progress meetings. During these meetings Contractor and OCWD staff will review progress of work and proposed schedule for upcoming work. Invoices will be reviewed and discussed.

- C. Project Execution – Contractor shall provide all plumbing fittings, hoses necessary for discharge (assume 50 feet of 4-inch lay-flat hose). All well redevelopment work conducted by the contractor shall be done in compliance with all permits, inspections and City ordinances (including noise and traffic control).

### NON-RIG OPERATION

- A. Daily Mobilization/Demobilization

1. Mobilization and Equipment Staging - Contractor may safely stage equipment at the off-Ellis Ave Modern well site locations at the discretion

of the City of Fountain Valley. Contractor may stage equipment necessary to complete the scope of work at the OCWD Fountain Valley facility. Equipment includes pump rig (hoist or crane) that is capable of lifting the total combined weight of the heaviest pipe string at the required boom angle and distance. The hoist or crane rated lift capacity specifications must include a minimum 3:1 factor of safety per the equipment manufacturers specifications. Additional equipment includes support vehicles, compressors, hard pipe/eductor pipe, tight-fitting perforated swab, bottom hole sounder, gauges and any other equipment necessary to perform work as described herein. Contractor is responsible for receiving delivery of any equipment or supplies delivered for this project.

2. Payment - Payment for daily mobilization/ demobilization shall be made at the non-rig man hour billing rate. Mobilization shall include all work necessary to prepare a particular site for commencement of rehabilitation activities. Daily mobilization shall include compliance with all inspections, city ordinances (noise and traffic control) and transportation of all necessary personnel, equipment and operating supplies to and from the site, and other necessary preparatory work at the site to begin to conduct redevelopment operations.

**B. Miscellaneous Labor (Non-Rig) Activities**

1. Wellhead Access - Contractor will dismantle the injection wellhead manifold from each well point at the well site. Contractor will transport the manifold assembly and the eductor pipe and down-well flow control valve (FCV) to a temporary storage area and cover with a tarp. The FCV requires special procedures to remove and install. FCV removal and installation procedures are provided by the Manufacturer (Baski) at the end of this section of the document. Contractor shall follow all FCV removal and installation procedures provided by Baski. Upon completion of well redevelopment, Contractor shall reinstall manifold piping and assist in any activities necessary to prepare the well for service.
2. Fabrications – Contractor, when required, will fabricate various specialized tools as deemed necessary to complete the scope of work. OCWD will notify Contractor when such fabrications are proposed or required. These fabrications are separate from any fabricating necessary to complete the work as described herein under “non-rig” or “rig” operations where general fabrication is required to complete those tasks as defined. Contractor shall purchase all necessary materials and parts and pay all state sales tax. Contractor will submit all material receipts to OCWD for reimbursement payment at cost plus 15% including applicable tax.
3. Static Water Level Measurements - At the beginning of each day as directed, Contractor shall measure the static water levels in the injection well. Contractor will measure the static water level using an electric

sounder provided by OCWD. Water levels will be measured to the nearest 100<sup>th</sup> of a foot. All water level measurements will be made relative to ground surface using a reference point specified by the OCWD field geologist. All water levels shall be recorded on the prescribed forms.

4. Submittals - Prior to the initial mobilization, Contractor will submit the following for OCWD staff approval: health & safety plan, a detailed account of tools to be used including all pipe, all airlines and all hoses, site lay-out, process methodology, fluid handling and crew experience. Include the type of work-over equipment to be used to pull and remove downhole tools. Previous contractors have had issues with the portable cranes fitting within the traffic lanes based on the vehicles foot print.

Contractor will be required to submit an accurate account of all rig and non-rig hours (straight time and overtime) daily. Overtime will be paid at the rate prescribed for the type of work which required that day's total hours to exceed 8 regular hours. Contractor will record these hours daily on a form for OCWD processing. These forms will be submitted to the OCWD field geologist daily for signature.

Upon request, and where applicable, Contractor shall furnish proof of calibration of instruments.

6. Miscellaneous - Contractor will conduct various miscellaneous non-rig operations. The activities include, but are not limited to, measuring and adding gravel to the gravel feed tubes and removing sediment from the bottom of the settlement tank. Debris in the bottom of the tank is to be cleaned out as necessary at the discretion of the OCWD geologist. A disposal area at the OCWD yard will be designated for the debris removed from the settlement tank(s). Following completion of redevelopment activities, Contractor shall clean-up well site to the satisfaction of OCWD staff.

- C. Payment - Payment for "non-rig" operations, excluding mobilization/demobilization/traffic control set-up, "rig operations", and daily usage of a high pressure/high volume air compressor capable of producing an air-lift flow rate of at least 300 gallons per minute (gpm), will be made at the unit price bid per hour under "straight" or "overtime" line items. The time required for activities will be recorded by the hour with 15-minute intervals as the smallest unit of recorded time. Overtime rates apply after a total of 8 hours have been worked in one day. Overtime will be paid at the rate prescribed for the type of work which required that day's total hours to exceed 8 regular hours. Contractor will record these hours daily on a form provided by OCWD. These forms will be submitted to the OCWD field geologist daily for signature. No payment will be made for delays

resulting from (1) equipment stuck in the hole; (2) equipment breakdown or routine maintenance done at the site; (3) failure to conduct the operations in a diligent and workmanlike manner by which the desired results could ordinarily be expected.

## RIG OPERATIONS

- A. General Specifications - The Contractor shall provide the hoist rig unit for the redevelopment of all Modern Injection Barrier wells. The hoist rig shall include all necessary tools, pipe, sounders, accessories, fuel, materials and supplies necessary to conduct a safe and efficient well redevelopment operation. The hoist rig used for the redevelopment activities shall be in good condition and have sufficient capacity to lift the total combined weight of the heaviest pipe string at the required boom angle and distance. The hoist or crane rated lift capacity specifications must include a minimum 3:1 factor of safety per the equipment manufacturers specifications.

Contractor shall also provide an air compressor with air-line(s), eductor pipe and appropriate fittings. Any air compressors shall be capable of producing a minimum air-lift flow rate of 300 gpm. The air-line shall have a "J-shaped" open ended fitting that directs the compressed air towards the top of the well. Any air compressors shall have an effective external air-oil separator and equipped with a silencing muffler on the air-line dump valve.

Contractor shall also provide associated equipment including, but not limited to, air compressor hoses and associated fittings, all required fuel, necessary discharge hoses, transfer tanks, transfer pumps, and a discharge head. The Contractor shall fabricate a discharge head to accommodate return flow and tools. The Discharge head shall be fitted with a dump valve capable of discharging "downhole" air to the atmosphere equipped with the silencing air muffler. The Contractor shall provide pressure gages where needed, assume at least two gages will be needed with minimum features such as 0-250 psig range, liquid filled and dampener with 5 psi increments on the gauge face.

Modern injection wells will be redeveloped using high volume purging and surging. During rig operations Contractor may be directed to collect water levels in surrounding well casings and record various observations for the OCWD field geologist. Contractor may be required to collect water samples and water quality field parameters as directed by the OCWD field geologist.

1. Wellhead Access - Contractor will pull up to 280 feet of 8-inch stainless steel drop pipe and 8-inch stainless steel flow control valve (FCV) [FCV weighs 1,000 pounds] from each injection well. This pipe and FCV is to be covered and stored on-site. Upon completion of well redevelopment, Contractor shall reinstall drop pipe, FCV and well head piping and assist in any activities necessary to prepare the well for service. FCV removal to

be accomplished in accordance with the attached document "Pulling Baski Flow Control Valves"

- B. Mechanical Redevelopment – Mechanical redevelopment of Modern injection wells will be achieved by dual swab air-lift pumping. Swabbing of the well shall be done with close fitting double swabs whose outside diameter of the surge blocks shall not be more than 1/8 inch smaller than the inside diameter of the screen section. The surge blocks shall be separated by a 15 foot perforated piece of pipe. The cross sectional area of the perforated section of the swab tool shall not exceed the cross sectional area of the tool drop pipe. The swab tool will have sufficient perforations to allow a flow of at least 300 gallons per minute (gpm). Contractor shall swab and air-lift the screen intervals of the injection well at a stroke length and frequency determined by the OCWD geologist in the field. All return fluids shall be passed through an OCWD provided 4,000-gallon settlement tank. Contractor shall bring appropriate fittings to plumb appropriate hose(s) to the settlement tank. Airlift discharge leaving the OCWD supplied settlement will be directed into a storm drain receptacle located at each Modern injection well site.
- C. Bottom-Hole Cleanout - If directed, Contractor shall remove fill material from the bottom of each well. Fill material shall be air-lifted. Air-lifting techniques shall include using a maximum 2.5-inch outer diameter flush-thread pipe eductor. The size of the air-line shall be ½-inch or 1 ¼-inch internal diameter. (Flush joint PVC has been used with past contractors with suitable results but some steel should be used near the discharge head to avoid fishing.) Upon completion, Contractor will measure and record the bottom of each well using a bottom hole sounder as direct by OCWD field staff.
- D. Payment - Payment for "rig" operations, excluding mobilization/ demobilization/ traffic control set-up, "non-rig operations", and daily usage of a high pressure/high volume air compressor also included in this scope of work, will be made at the unit price bid per hour under "straight" or "overtime" line items. Overtime rates apply after a total of 8 hours have been worked in one day. Overtime will be paid at the rate prescribed for the type of work which required that day's total hours to exceed 8 regular hours. Contractor will record these hours daily on a form for OCWD processing. These forms will be submitted to the OCWD field geologist daily for signature. The time required for activities will be recorded by the hour with 15-minute intervals as the smallest unit of recorded time. No payment will be made for delays resulting from (1) equipment stuck in the hole; (2) equipment breakdown or routine maintenance done at the site; (3) failure to conduct the operations in a diligent and workmanlike manner by which the desired results could ordinarily be expected.

## MISCELLANEOUS

A. OCWD Personnel and Equipment Provided for Project

1. Barrier Operator/Field Geologist – Supervise field operations, develop and adjust well rehabilitation program, provide field documentation, monitor and sample discharge per NPDES and County of Orange permits.
2. Multibed truck to move desilting bin (settlement tank).
3. Water level indicator (graduated in 100<sup>th</sup> of foot).
4. Water quality monitoring equipment.
5. Down-hole video survey equipment.
6. 4,000-gallon capacity settlement tank.
7. ¼-inch stainless steel tubing for FCV

B. Contractor-Provided Personnel and Equipment for Project:

1. Lead Operator – The “lead” operator must have a minimum of 5 years high-volume airlifting experience in the form of reverse circulation drilling or well development achieving flow rates of at least 300 gpm. The “lead” operator must have a minimum of 2 years well development/ redevelopment experience by using the dual swab airlifting method. The “lead” operator shall have a minimum 5-yers experience removing and installing water well pumps utilizing 12-inch diameter column pipe. The “lead” operator shall direct site operations as pertains to rig and work described herein and as directed by OCWD.
2. Operator Assistant – Assist “lead” operator and OCWD field geologist as directed by operator and OCWD field geologist. Assistant to have minimum 2 years experience working with development rig.
3. Project Manager – Minimum five (5) years’ experience supervising well development activities. Responsibilities include: project coordination, scheduling, billing, attending meetings and responsible for ensuring overall success of project.
4. Well Development Rig (pump hoist).
5. Air compressors, various sizes specified herein.
6. Pipe, hoses, fittings, possibly including 50 feet of 4 inch diameter lay-flat discharge hose.

7. Fluid transfer pumps (each pump must be equipped with operational muffler that significantly reduces unit output noise and complies with City noise ordinances).
8. Fittings.
9. Bottom-hole sounder.
10. Fuel for all Contractors supplied equipment.
11. Air-line and air-lift discharge head equipped with silencing air muffler.
12. Dual swab air-lift tool described herein.

# Talbert Seawater Intrusion Barrier

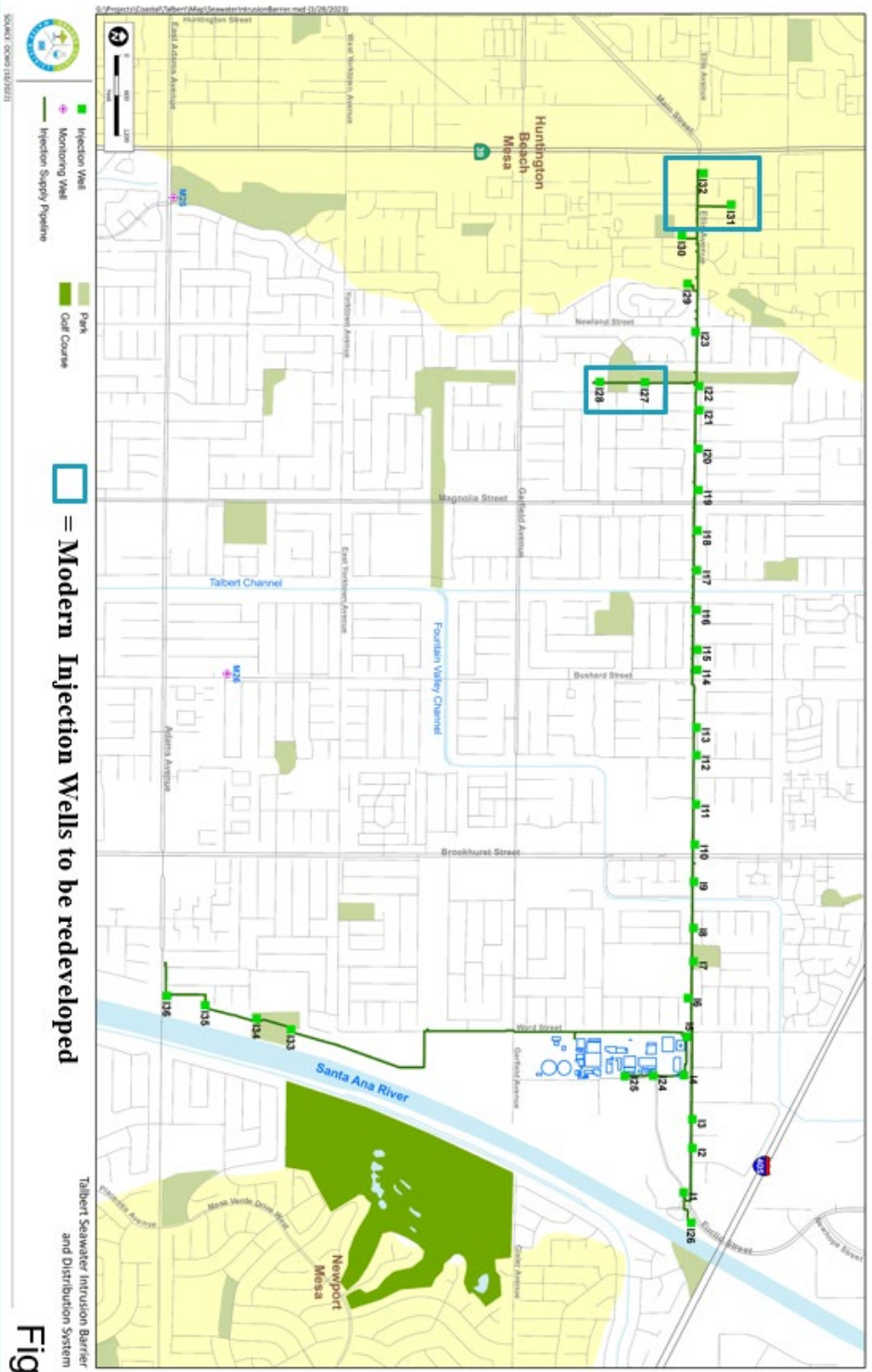


Figure 2

ORANGE COUNTY WATER DISTRICT



## Pulling Baski Flow Control Valves

**The following procedure must be followed when pulling a Baski Flow Control Valve without saving the stainless steel tubing for re-use.**

**If you have any questions or concerns, call our office at (303) 789-1200.**

1. Disconnect the Flow Control Valve's (FCV) stainless steel control lines at the surface. This is typically a tubing union just outside of the wellhead but could be as far as the control panel.
2. Detach the wellhead and any other connected surface piping as needed.
3. Since the tubing will be replaced during re-installation, you can discard the old tubing as needed during the removal. Often the easiest option is to still wind it onto a spool as you come up, as that will keep the tubing out of your way and not a trip hazard.
4. Begin pulling the column pipe, cutting the banding or tape and removing the Over-The-Coupling-Protectors (if supplied) along the way.
5. When it is time to disconnect the Flow Control Valve, disconnect the stainless steel control lines from the fittings on top of the valve. Do **NOT** remove the fittings from the ports in the top of the valve.
6. The valve is filled with liquid. **The fittings on top of the valve MUST be capped off while in the vertical position**, or else the liquid will leak out when the valve is laid down horizontally. If you cannot locate the caps provided at the time of original installation or you don't have access to additional caps, call the Baski office for options.
7. The Flow Control Valve may now be disconnected from the column pipe by unthreading it. Do not remove the thread adapters from the centerpipe of the valve, only remove the coupling. Note: FCVs made before 2010 may not have separate thread adapters).
8. Be sure to protect the threads on each end of the valve so that the valve can be re-installed without replacing the thread adapters.
9. For long term storage of the Flow Control Valve (3+ Months), the ends and injection exit ports should be closed off with black plastic sheeting or equivalent. This eliminates sunlight and the exchange of air, significantly reducing the three enemies of natural rubber: ozone, oxygen and ultraviolet radiation. Remove any such sheeting before assembly into the column piping.



## Installation Procedure For Downhole Flow Control Valves (FCV™)

***Warning: The FCV is filled with inflation fluid. Do not remove caps from fittings on the inflation ports until the valve is in the upright and vertical position.***

### What you will need:

- Compressed Nitrogen-one standard cylinder
- Nitrogen Regulator capable of 400 psi or greater
- Short length of tubing or hose to connect the test regulator to the back end of the SS tubing) and a method to release the pressure.
- Tubing plug for ¼" SS tubing nut or fitting. These are included with the spare parts with new FCVs.
- Basic open end wrenches (1/2", 9/16", 11/16")
- Tubing stand or other method to hold the two tubing spools next to the well during installation
- Snoop leak detection fluid or a soapy water solution

### Instructions

1. Make the connection between the bottom end of the FCV and the next component in column pipe below for the desired valve set depth. If possible, also install the joint above the FCV, making sure there will be enough clearance to lift the string back up so that the fittings at the top of the valve are accessible. Lift the string so that fittings A and B (See Figure 1) are in an easy position for making connections. Installing the column joint above the FCV prior to hooking up the control lines allows for easier access, as the elevators will not be right there in the way.
2. Typically Baski supplies two different alloys of tubing for each new installation, both of which are ¼" OD stainless steel. One is Duplex 2205, which is used for the downhole run. This alloy is very strong and highly corrosion resistant. There will be two spools of this tubing, with enough length to match the final set depth of the FCV, with about 20 ft extra. The front end of this tubing will get connected to the FCV downhole, and the back end will eventually be cut and then connected to the surface tubing. The surface tubing is 316L SS tubing, which has a lower yield strength and therefore can be more easily pulled through conduit, as is typically done between the wellhead and the FCV control panel.
3. Remove the caps from the stainless steel fittings installed in the inflation ports at the top of the valve, leaving the fitting in place.
4. Check the fluid level in the inflation chamber using a wire or wooden skewer as a dipstick to confirm the liquid is still inside of the FCV. The fill level is stamped on the valve. For instance, "F=2.5" stamped on the valve would indicate that the fluid is filled to 2.5 inches below the flat top of the head when the valve is in the vertical position (see Figure 1). If the liquid is within 1" of the stamped distance, you are ok to proceed.
  - a. It is extremely rare for the liquid level to be below where it needs to be on new FCVs. The only scenarios would be if the caps came off during shipping (should be very easy to see spilled fluid in the shipping crate) or if the caps were mistakenly removed while it is horizontal on the ground before it is



lifted into position. Used FCVs may need to be filled if the contractor who previously pulled the FCV did not cap the fittings before laying the FCV down. Each FCV has several gallons of fluid in it, depending on model.

5. If necessary, add fluid. Use only propylene glycol, which is non-toxic. To add fluid, put the propylene glycol into a squeeze bottle then inject it through the inflation fittings. If you suspect that most or all of the liquid has drained out of the FCV, call the Baski factory for further instructions.
6. Connect the ¼" Duplex 2205 stainless steel tubes to fittings A and B
  - a. You do not need to keep track of which line is which. Both inflation ports access the same internal chamber inside of the FCV.
  - b. It's recommended to have a second person hold the wooden spools in place before you untie the front end of the tubing, as it will want to spin loose.
  - c. The tubing is shipped with fittings already installed on both ends, as they are needed in order for us to pull the tubing on to the wooden spool. Remove the fitting body from the front end of the tubing, leaving the ferrules and nut on the end of the tube, which will be connected directly to the fittings in the FCV. There is no need to cut off the nut and/or ferrules, as they have been properly installed on the tubing by Baski at our shop.
  - d. Before connecting the tubing to the fitting on the FCV, place a sort piece of ¾" heat shrink tubing (about 2 inches long) over the tubing past the nut so it can be applied in a later step. Baski typically provides this heat shrink tube along with the Duplex 2205 tubing when it is put onto the spool.
  - e. Slide the nut back a bit in order to see the ferrule and tubing end. Insert the end of the tubing into the fitting until the end of the tubing reaches the internal shoulder of the fitting and the ferrules fully seat. Thread the tubing nut onto the fitting by hand until finger tight.
  - f. Use two wrenches, one as a backup wrench, to tighten up the tubing nut until a sharp increase in torque is felt. Tighten the nut another 1/16 of a turn.
  - g. Repeat this process with the second line.
  - h. Lower the heat shrink tubing over each fitting and heat it up until it has fully shrunk and conformed over the fitting and tubing. The goal is to keep contaminants in the well away from the small crevices at the tubing nut area.
  - i. Plug the back end of one stainless steel tube.

**Tip-** When we ship Duplex 2205 tubing for FCVs, we tie the back end of the tubing to the wood flange in two places several inches apart using wire ties. This allows you to remove the outermost tie so that you can pull the tubing away from the flange in order to cap the fitting or hook up to it (in the next step) while the second tie holds tension on the tubing and prevents it from trying to unspool.

- j. Connect the back end of the other stainless steel tube to your pressure test tube and fittings, and in turn, the regulator to a nitrogen bottle.
7. Pressurize the FCV to 400psi for a minimum of 30 minutes to check for leaks
  - a. It can help to inflate up to a lower pressure initially, such as 100 psi, and pause to listen for any large leaks at any of the connections. Fixing these larger leaks at lower pressures reduces waste of Nitrogen



and makes it easier to get everything tight. Once you don't hear or feel any major leaks, inflate up to 400 psi.

- b. Once 400psi is attained, back off the regulator and close the valve on the nitrogen cylinder to create a closed system so that leaks can be more easily detected. Write down the exact pressure on the gauge, along with the time.
- c. Check all connections for leaks using Snoop or a soapy water solution, including the connections on the back ends of each tube and to the regulator.
- d. Continue to check for leaks until the valve has been pressurized at 400 psi for a minimum of 30 minutes.

**Note: The pressure inside of the tubing may change up or down during the pressure test even without any leaks. Changes in temperature will directly affect the pressure in the tubing. This can happen as a result of a storm moving in to the area, or the sun going behind clouds (or coming out from clouds). When pressure testing at 400 psi, the pressure inside of the tubing and FCV will change approximately 0.75 psi per one degree Fahrenheit in temperature, up or down.**

8. If no leaks exist, bleed off the gas, remove the pressure cap and pressure line on the backside of the SS tubing spools, and reconnect the original caps/fittings on the back end of the tubing (acting as protection at this point).
9. If possible, tie the back ends of the tubing back on the spool, in order to better secure it during the rest of installation.
10. Proceed with installation, securing the tubing to the column pipe along the way. We recommend that the tubing be secured with SS banding or tape at least at every coupling and once in the middle of each 20 ft joint.
11. When all of the column pipe has been installed, determine how much of the downhole tubing you will need to leave in order to connect to the surface run of tubing. It is recommended to connect the surface portion of the tubing to the downhole tubing inside the pitless unit junction box or otherwise just outside of the wellhead. It is critical that the tubing splice/connection be made such that the fittings can be easily leak checked and/or replaced in the future without the need for a crane or hoist.
12. Run two lengths of the 316L tubing from the control panel location to the wellhead as needed. Depending on the length of the run, Baski may ship all of the required tubing for the two lines on one continuous spool to facilitate shipping. In that case you can either pull the tubing through the conduit twice directly from the spool or you can take half the tubing off of the spool and pull both lines at the same time.

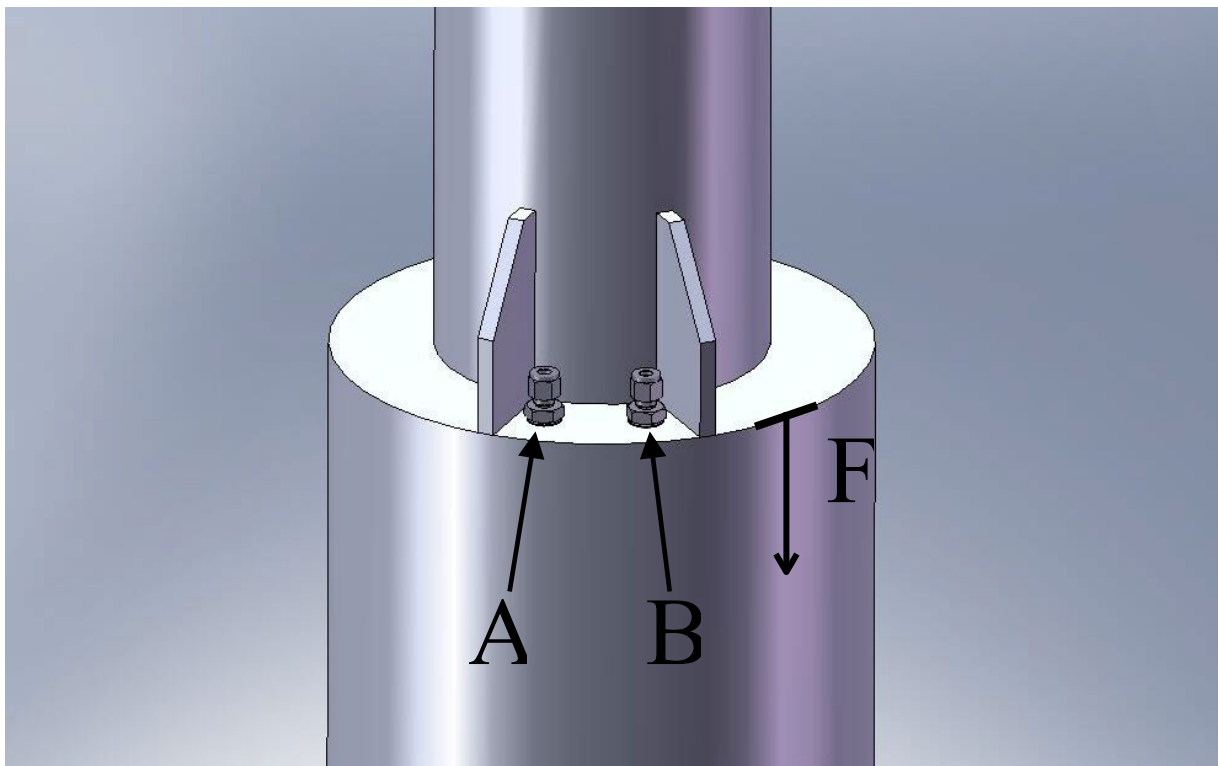
#### Notes:

-It is very helpful to keep control of the stainless steel tubing at all times during installation. Once the front end of the tubing is disconnected from the spool, the tubing will want to unspool itself by spinning the spool. If this happens, it is not the end of the world, but you will likely be fighting it all the way down. There are several ways to keep the tubing under control. Here is the best method we know of. After you have connected both inflation lines and completed the pressure test, use several wood screws to fasten the two tubing spools together. This allows them to act as one spool. Next, use a vice grip and adjust it to clamp on one of the spool flanges with one of the SS tubes also underneath/within the vice grip. Since the front end of the tubing is connected to the FCV and will not move, the having the vice grip over one of the tubes will keep the spool from spinning, without needing a crew member to hold it all the time. Then,



whenever the column is lowered down during installation, you just open up the vice grip and unspool as needed, putting the vice back on whenever you stop moving.

-If a chlorine solution is used to sanitize equipment going into the well, the chlorine in the solution must not exceed 200ppm. After using the chlorine solution, water should be used to wash off the solution or injected down the annular area between the OD of the column pipe and the ID of the casing to remove the solution from the control lines and other equipment, as chlorine is one of the few enemies of stainless steel. Baski strongly recommends not spraying the SS control lines with the chlorine solution.

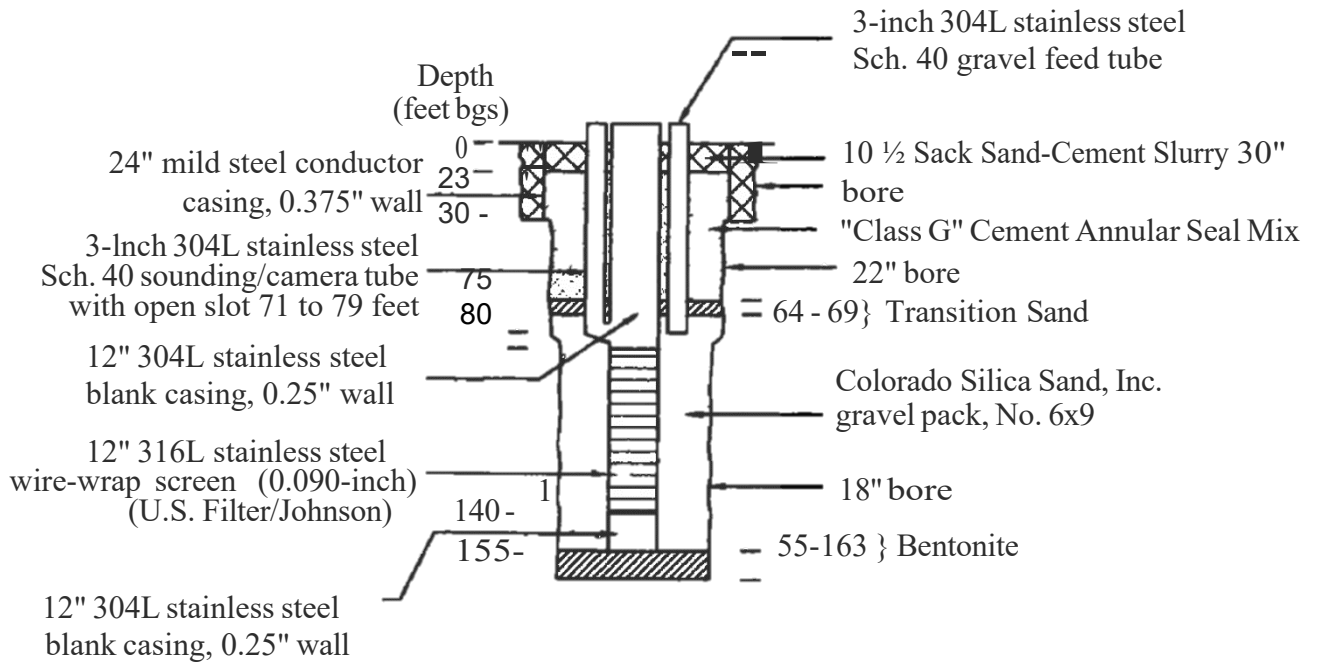


**Figure 1: Flow Control Valve Diagram for Installation**

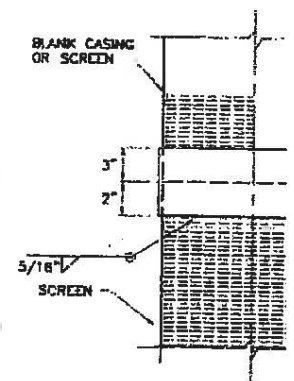
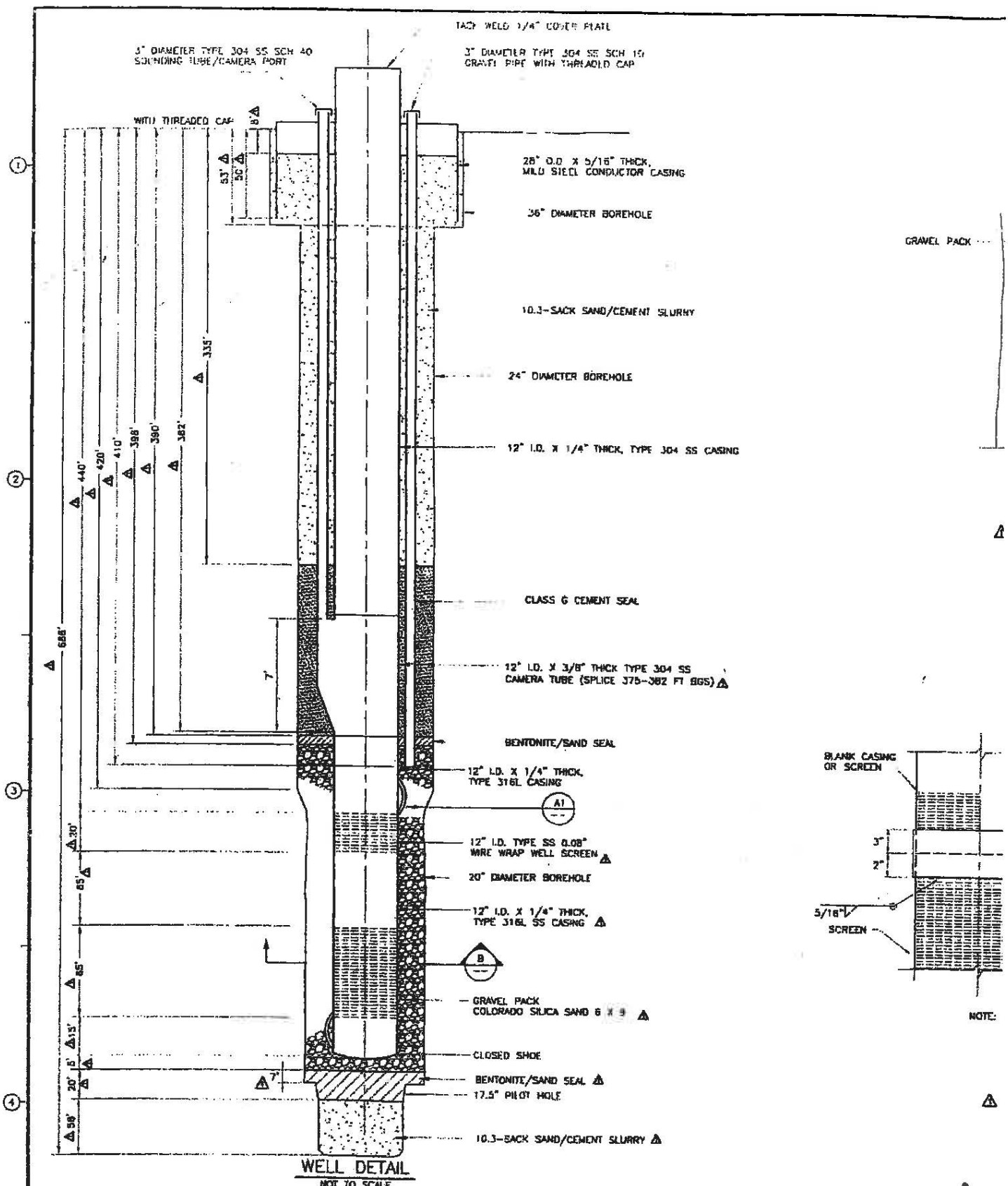
As-Built Drawings for Modern Injection Wells I-27, I-28, I-31 and I-32



FIGURE 5  
 "As-Built" Well Schematic  
 Talbert Barrier Injection Well OCWD – 128A/4



Well Constructed May 2003,  
 Bakersfield Well and Pump Co.  
 OCWD Contrad No. TAL-2002-2



NOTE:

**CDM**

**I-31K**

DESIGNED BY	S. ROWE
DRAWN BY	K. BAMEL
SHEET CHECKED BY	M. HOFFMAN
CROSS CHECKED BY	K. ROWE
APPROVED FOR	R. CORNOLLE
DATE	SEPTEMBER 2005

REV. NO.	DATE	DRWN	CHKD	REMARKS
1	9/05	XI	MH	REVISED PER AS-BUILT CONDITIONS

Camp Dresser & McKee Inc. an associated firm  
 Brown and Caldwell and Tetra Tech  
 18581 Tejar Avenue  
 Irvine, California 92612  
 Tel: (949) 752-5452  
 Fax: (949) 752-1307



## PHASE III SCOPE OF WORK – MID-BASIN INJECTION WELLS

- A. Well Redevelopment Background - Orange County Water District (OCWD) Mid-Basin Injection (MBI) Wells were completed between 20015 and 2021 as one 18-inch casing per borehole. Figure 1 shows the location of each Modern Injection Well proposed to be redeveloped under this agreement. Well depths range between 1,100 and 1,210 feet below ground surface. Each casing was constructed of 12-inch or 20-inch diameter stainless steel blank casing and 16-inch diameter stainless steel wire wrap well perforations. Any tools lost by contractor down-well shall be retrieved by the contractor at the contractor's expense. No encroachment permits are required to work on Mid Basin Injection Wells. MBI – 1 is completed above ground on an vacant lot. MBI-2 through MBI-5 are below ground surface in vaults. The vaults are located in Centennial Park, Santa Ana, CA. The MBI-1 site has a storm drain catchment on-site. MBI-2 through MBI-5 will require discharge to the curb and gutter. Discharge permitting, monitoring and reporting will be conducted by OCWD staff. All discharges under the Phase III scope of work will be conducted using OCWD's NPDES permit. As built drawings and pump setting diagrams for wells MBI-1 through MBI-5 are located at the back of this scope of work.
- B. Project Start-up - Contractor to mobilize all equipment, materials, tools and personnel to Fountain Valley, CA. Mobilization shall include the purchase of any required bonds, encroachment permits, inspection fees or business licenses, submission of Health and Safety Plan specifically written for the project as described, daily transportation or per diem for personnel assigned to project, equipment and operating supplies to the central equipment staging area and other necessary preparatory work at the site to begin to conduct redevelopment operations.
- Contractor will also be attending by-weekly work progress meetings. During these meetings Contractor and OCWD staff will review progress of work and proposed schedule for upcoming work. Invoices will be reviewed and discussed.
- C. Project Execution – Contractor shall provide all plumbing fittings, hoses necessary for discharge. All well redevelopment work conducted by the contractor shall be done in compliance with all permits, inspections and City ordinances (including noise and traffic control).

## NON-RIG OPERATION

### A. Daily Mobilization/Demobilization

1. Mobilization and Equipment Staging - Contractor may safely stage equipment at the MBI-1 well site location. This site has a perimeter security fence and locking gate. Equipment includes pump rig (hoist or crane) that is capable of lifting the total combined weight of the heaviest pipe string at the required boom angle and distance. The hoist or crane rated lift capacity specifications must include a minimum 3:1 factor of safety per the equipment manufacturers specifications. Additional equipment includes support vehicles, compressors, hard pipe/eductor pipe, tight-fitting perforated swab, bottom hole sounder, gauges and any other equipment necessary to perform work as described herein. Contractor is responsible for receiving delivery of any equipment or supplies delivered for this project.
2. Payment - Payment for daily mobilization/ demobilization shall be made at the non-rig man hour billing rate. Mobilization shall include all work necessary to prepare a particular site for commencement of rehabilitation activities. Daily mobilization shall include compliance with all inspections, city ordinances (noise and traffic control) and transportation of all necessary personnel, equipment and operating supplies to and from the site, and other necessary preparatory work at the site to begin to conduct redevelopment operations.

### B. Miscellaneous Labor (Non-Rig) Activities

1. Wellhead Access - Contractor will dismantle the injection wellhead manifold from each well point at the well site. Contractor will transport the manifold assembly and the eductor pipe and down-well flow control valve (FCV) to a temporary storage area and cover with a tarp. The FCV requires special procedures to remove and install. FCV removal and installation procedures are provided by the Manufacturer (Baski) at the end of this section of the document. Contractor shall follow all FCV removal and installation procedures provided by Baski. Upon completion of well redevelopment, Contractor shall reinstall manifold piping and assist in any activities necessary to prepare the well for service.
2. Fabrications – Contractor, when required, will fabricate various specialized tools as deemed necessary to complete the scope of work. OCWD will notify Contractor when such fabrications are proposed or required. These fabrications are separate from any fabricating necessary to complete the work as described herein under “non-rig” or “rig” operations where general fabrication is required to complete those tasks as defined. Contractor shall purchase all necessary materials and parts and pay all state sales

tax. Contractor will submit all material receipts to OCWD for reimbursement payment at cost plus 15% including applicable tax.

3. Static Water Level Measurements - At the beginning of each day as directed, Contractor shall measure the static water levels in the injection well. Contractor will measure the static water level using an electric sounder provided by OCWD. Water levels will be measured to the nearest 100<sup>th</sup> of a foot. All water level measurements will be made relative to ground surface using a reference point specified by the OCWD field geologist. All water levels shall be recorded on the prescribed forms.
4. Submittals - Prior to the initial mobilization, Contractor will submit the following for OCWD staff approval: health & safety plan, a detailed account of tools to be used including all pipe, all airlines and all hoses, site lay-out, process methodology, fluid handling and crew experience. Include the type of work-over equipment to be used to pull and remove downhole tools. Previous contractors have had issues with the portable cranes fitting within the traffic lanes based on the vehicles foot print.

Contractor will be required to submit an accurate account of all rig and non-rig hours (straight time and overtime) daily. Overtime will be paid at the rate prescribed for the type of work which required that day's total hours to exceed 8 regular hours. Contractor will record these hours daily on a form for OCWD processing. These forms will be submitted to the OCWD field geologist daily for signature.

Upon request, and where applicable, Contractor shall furnish proof of calibration of instruments.

6. Miscellaneous - Contractor will conduct various miscellaneous non-rig operations. The activities include, but are not limited to, measuring and adding gravel to the gravel feed tubes and removing sediment from the bottom of the settlement tank. Debris in the bottom of the tank is to be cleaned out as necessary at the discretion of the OCWD geologist. A disposal area at the OCWD yard will be designated for the debris removed from the settlement tank(s). Following completion of redevelopment activities, Contractor shall clean-up well site to the satisfaction of OCWD staff.
- C. Payment - Payment for "non-rig" operations, excluding mobilization/demobilization/traffic control set-up, "rig operations", and daily usage of a high pressure/high volume air compressor capable of producing an air-lift flow rate of at least 300 gallons per minute (gpm), will be made at the unit price bid per hour under "straight" or "overtime" line items. The time required for activities will be

recorded by the hour with 15-minute intervals as the smallest unit of recorded time. Overtime rates apply after a total of 8 hours have been worked in one day. Overtime will be paid at the rate prescribed for the type of work which required that day's total hours to exceed 8 regular hours. Contractor will record these hours daily on a form provided by OCWD. These forms will be submitted to the OCWD field geologist daily for signature. No payment will be made for delays resulting from (1) equipment stuck in the hole; (2) equipment breakdown or routine maintenance done at the site; (3) failure to conduct the operations in a diligent and workmanlike manner by which the desired results could ordinarily be expected.

## RIG OPERATIONS

- A. General Specifications - The Contractor shall provide the hoist rig unit for the redevelopment of all MBI wells. The hoist rig shall include all necessary tools, pipe, sounders, accessories, fuel, materials and supplies necessary to conduct a safe and efficient well redevelopment operation. The hoist rig used for the redevelopment activities shall be in good condition and have sufficient capacity to lift the total combined weight of the heaviest pipe string at the required boom angle and distance. The hoist or crane rated lift capacity specifications must include a minimum 3:1 factor of safety per the equipment manufacturers specifications.

Contractor shall also provide an air compressor with air-line(s), eductor pipe and appropriate fittings. Any air compressors shall be capable of producing a minimum air-lift flow rate of 400 gpm. The air-line shall have a "J-shaped" open ended fitting that directs the compressed air towards the top of the well. Any air compressors shall have an effective external air-oil separator and equipped with a silencing muffler on the air-line dump valve. Static water levels at MBI wells can be as deep as approximately 120 feet bgs.

Contractor shall also provide associated equipment including, but not limited to, air compressor hoses and associated fittings, all required fuel, necessary discharge hoses, transfer tanks, transfer pumps, and a discharge head. The Contractor shall fabricate a discharge head to accommodate return flow and tools. The Discharge head shall be fitted with a dump valve capable of discharging "downhole" air to the atmosphere equipped with the silencing air muffler. The Contractor shall provide pressure gages where needed, assume at least two gages will be needed with minimum features such as 0-250 psig range, liquid filled and dampener with 5 psi increments on the gauge face.

MBI wells will be redeveloped using high volume purging and surging. During rig operations Contractor may be directed to collect water levels in surrounding well casings and record various observations for the OCWD field geologist. Contractor may be required to collect water samples and water quality field parameters as directed by the OCWD field geologist.

1. Wellhead Access - Contractor will pull all column pipe, pump, submersible motor and Baski flow control valve (FCV) This pipe and FCV is to be covered and stored on-site. Upon completion of well redevelopment, Contractor shall reinstall drop pipe, FCV and well head piping and assist in any activities necessary to prepare the well for service. FCV removal to be accomplished in accordance with the attached document "Pulling Baski Flow Control Valves"
  
- B. Mechanical Redevelopment – Mechanical redevelopment of MBI wells will be achieved by dual swab air-lift pumping. Swabbing of the well shall be done with close fitting double swabs whose outside diameter of the surge blocks shall not be more than 1/8 inch smaller than the inside diameter of the screen section. The surge blocks shall be separated by a 15 foot perforated piece of pipe. The cross sectional area of the perforated section of the swab tool shall not exceed the cross sectional area of the tool drop pipe. The swab tool will have sufficient perforations to allow a flow of at least 300 gallons per minute (gpm). Contractor shall swab and air-lift the screen intervals of the injection well at a stroke length and frequency determined by the OCWD geologist in the field. All return fluids shall be passed through an OCWD provided 4,000-gallon settlement tank. Contractor shall bring appropriate fittings to plumb appropriate hose(s) to the settlement tank. Airlift discharge leaving the OCWD supplied settlement will be directed into a storm drain receptacle located at each Modern injection well site.
  
- C. Bottom-Hole Cleanout - If directed, Contractor shall remove fill material from the bottom of each well. Fill material shall be air-lifted. Upon completion, Contractor will measure and record the bottom of each well using a bottom hole sounder as direct by OCWD field staff.
  
- D. Payment - Payment for "rig" operations, excluding mobilization/ demobilization/ traffic control set-up, "non-rig operations", and daily usage of a high pressure/high volume air compressor also included in this scope of work, will be made at the unit price bid per hour under "straight" or "overtime" line items. Overtime rates apply after a total of 8 hours have been worked in one day. Overtime will be paid at the rate prescribed for the type of work which required that day's total hours to exceed 8 regular hours. Contractor will record these hours daily on a form for OCWD processing. These forms will be submitted to the OCWD field geologist daily for signature. The time required for activities will be recorded by the hour with 15-minute intervals as the smallest unit of recorded time. No payment will be made for delays resulting from (1) equipment stuck in the hole; (2) equipment breakdown or routine maintenance done at the site; (3) failure to conduct the operations in a diligent and workmanlike manner by which the desired results could ordinarily be expected.

## MISCELLANEOUS

A. OCWD Personnel and Equipment Provided for Project

1. Barrier Operator/Field Geologist – Supervise field operations, develop and adjust well rehabilitation program, provide field documentation, monitor and sample discharge per NPDES and County of Orange permits.
2. Multibed truck to move desilting bin (settlement tank).
3. Water level indicator (graduated in 100<sup>th</sup> of foot).
4. Water quality monitoring equipment.
5. Down-hole video survey equipment.
6. 4,000-gallon capacity settlement tank.
7. ¼-inch stainless steel tubing for FCV

B. Contractor-Provided Personnel and Equipment for Project:

1. Lead Operator – The “lead” operator must have a minimum of 5 years high-volume airlifting experience in the form of reverse circulation drilling or well development achieving flow rates of at least 400 gpm. The “lead” operator must have a minimum of 2 years well development/redevelopment experience by using the dual swab airlifting method. The “lead” operator shall direct site operations as pertains to rig and work described herein and as directed by OCWD.
2. Operator Assistant – Assist “lead” operator and OCWD field geologist as directed by operator and OCWD field geologist. Assistant to have minimum 2 years experience working with development rig.
3. Project Manager – Minimum five (5) years’ experience supervising well development activities. Responsibilities include: project coordination, scheduling, billing, attending meetings and responsible for ensuring overall success of project.
4. Well Development Rig (pump hoist).
5. Air compressors, various sizes specified herein.
6. Pipe, hoses, fittings, possibly including 50 feet of 4 inch diameter lay-flat discharge hose.

7. Fluid transfer pumps (each pump must be equipped with operational muffler that significantly reduces unit output noise and complies with City noise ordinances).
8. Fittings.
9. Bottom-hole sounder.
10. Fuel for all Contractors supplied equipment.
11. Air-line and air-lift discharge head equipped with silencing air muffler.
12. Dual swab air-lift tool described herein.



## Pulling Baski Flow Control Valves

**The following procedure must be followed when pulling a Baski Flow Control Valve without saving the stainless steel tubing for re-use.**

**If you have any questions or concerns, call our office at (303) 789-1200.**

1. Disconnect the Flow Control Valve's (FCV) stainless steel control lines at the surface. This is typically a tubing union just outside of the wellhead but could be as far as the control panel.
2. Detach the wellhead and any other connected surface piping as needed.
3. Since the tubing will be replaced during re-installation, you can discard the old tubing as needed during the removal. Often the easiest option is to still wind it onto a spool as you come up, as that will keep the tubing out of your way and not a trip hazard.
4. Begin pulling the column pipe, cutting the banding or tape and removing the Over-The-Coupling-Protectors (if supplied) along the way.
5. When it is time to disconnect the Flow Control Valve, disconnect the stainless steel control lines from the fittings on top of the valve. Do **NOT** remove the fittings from the ports in the top of the valve.
6. The valve is filled with liquid. **The fittings on top of the valve MUST be capped off while in the vertical position**, or else the liquid will leak out when the valve is laid down horizontally. If you cannot locate the caps provided at the time of original installation or you don't have access to additional caps, call the Baski office for options.
7. The Flow Control Valve may now be disconnected from the column pipe by unthreading it. Do not remove the thread adapters from the centerpipe of the valve, only remove the coupling. Note: FCVs made before 2010 may not have separate thread adapters).
8. Be sure to protect the threads on each end of the valve so that the valve can be re-installed without replacing the thread adapters.
9. For long term storage of the Flow Control Valve (3+ Months), the ends and injection exit ports should be closed off with black plastic sheeting or equivalent. This eliminates sunlight and the exchange of air, significantly reducing the three enemies of natural rubber: ozone, oxygen and ultraviolet radiation. Remove any such sheeting before assembly into the column piping.



## Installation Procedure For Downhole Flow Control Valves (FCV™)

***Warning: The FCV is filled with inflation fluid. Do not remove caps from fittings on the inflation ports until the valve is in the upright and vertical position.***

### What you will need:

- Compressed Nitrogen-one standard cylinder
- Nitrogen Regulator capable of 400 psi or greater
- Short length of tubing or hose to connect the test regulator to the back end of the SS tubing) and a method to release the pressure.
- Tubing plug for ¼" SS tubing nut or fitting. These are included with the spare parts with new FCVs.
- Basic open end wrenches (1/2", 9/16", 11/16")
- Tubing stand or other method to hold the two tubing spools next to the well during installation
- Snoop leak detection fluid or a soapy water solution

### Instructions

1. Make the connection between the bottom end of the FCV and the next component in column pipe below for the desired valve set depth. If possible, also install the joint above the FCV, making sure there will be enough clearance to lift the string back up so that the fittings at the top of the valve are accessible. Lift the string so that fittings A and B (See Figure 1) are in an easy position for making connections. Installing the column joint above the FCV prior to hooking up the control lines allows for easier access, as the elevators will not be right there in the way.
2. Typically Baski supplies two different alloys of tubing for each new installation, both of which are ¼" OD stainless steel. One is Duplex 2205, which is used for the downhole run. This alloy is very strong and highly corrosion resistant. There will be two spools of this tubing, with enough length to match the final set depth of the FCV, with about 20 ft extra. The front end of this tubing will get connected to the FCV downhole, and the back end will eventually be cut and then connected to the surface tubing. The surface tubing is 316L SS tubing, which has a lower yield strength and therefore can be more easily pulled through conduit, as is typically done between the wellhead and the FCV control panel.
3. Remove the caps from the stainless steel fittings installed in the inflation ports at the top of the valve, leaving the fitting in place.
4. Check the fluid level in the inflation chamber using a wire or wooden skewer as a dipstick to confirm the liquid is still inside of the FCV. The fill level is stamped on the valve. For instance, "F=2.5" stamped on the valve would indicate that the fluid is filled to 2.5 inches below the flat top of the head when the valve is in the vertical position (see Figure 1). If the liquid is within 1" of the stamped distance, you are ok to proceed.
  - a. It is extremely rare for the liquid level to be below where it needs to be on new FCVs. The only scenarios would be if the caps came off during shipping (should be very easy to see spilled fluid in the shipping crate) or if the caps were mistakenly removed while it is horizontal on the ground before it is



lifted into position. Used FCVs may need to be filled if the contractor who previously pulled the FCV did not cap the fittings before laying the FCV down. Each FCV has several gallons of fluid in it, depending on model.

5. If necessary, add fluid. Use only propylene glycol, which is non-toxic. To add fluid, put the propylene glycol into a squeeze bottle then inject it through the inflation fittings. If you suspect that most or all of the liquid has drained out of the FCV, call the Baski factory for further instructions.
6. Connect the ¼" Duplex 2205 stainless steel tubes to fittings A and B
  - a. You do not need to keep track of which line is which. Both inflation ports access the same internal chamber inside of the FCV.
  - b. It's recommended to have a second person hold the wooden spools in place before you untie the front end of the tubing, as it will want to spin loose.
  - c. The tubing is shipped with fittings already installed on both ends, as they are needed in order for us to pull the tubing on to the wooden spool. Remove the fitting body from the front end of the tubing, leaving the ferrules and nut on the end of the tube, which will be connected directly to the fittings in the FCV. There is no need to cut off the nut and/or ferrules, as they have been properly installed on the tubing by Baski at our shop.
  - d. Before connecting the tubing to the fitting on the FCV, place a sort piece of ¾" heat shrink tubing (about 2 inches long) over the tubing past the nut so it can be applied in a later step. Baski typically provides this heat shrink tube along with the Duplex 2205 tubing when it is put onto the spool.
  - e. Slide the nut back a bit in order to see the ferrule and tubing end. Insert the end of the tubing into the fitting until the end of the tubing reaches the internal shoulder of the fitting and the ferrules fully seat. Thread the tubing nut onto the fitting by hand until finger tight.
  - f. Use two wrenches, one as a backup wrench, to tighten up the tubing nut until a sharp increase in torque is felt. Tighten the nut another 1/16 of a turn.
  - g. Repeat this process with the second line.
  - h. Lower the heat shrink tubing over each fitting and heat it up until it has fully shrunk and conformed over the fitting and tubing. The goal is to keep contaminants in the well away from the small crevices at the tubing nut area.
  - i. Plug the back end of one stainless steel tube.

**Tip-** When we ship Duplex 2205 tubing for FCVs, we tie the back end of the tubing to the wood flange in two places several inches apart using wire ties. This allows you to remove the outermost tie so that you can pull the tubing away from the flange in order to cap the fitting or hook up to it (in the next step) while the second tie holds tension on the tubing and prevents it from trying to unspool.

- j. Connect the back end of the other stainless steel tube to your pressure test tube and fittings, and in turn, the regulator to a nitrogen bottle.
7. Pressurize the FCV to 400psi for a minimum of 30 minutes to check for leaks
  - a. It can help to inflate up to a lower pressure initially, such as 100 psi, and pause to listen for any large leaks at any of the connections. Fixing these larger leaks at lower pressures reduces waste of Nitrogen



and makes it easier to get everything tight. Once you don't hear or feel any major leaks, inflate up to 400 psi.

- b. Once 400psi is attained, back off the regulator and close the valve on the nitrogen cylinder to create a closed system so that leaks can be more easily detected. Write down the exact pressure on the gauge, along with the time.
- c. Check all connections for leaks using Snoop or a soapy water solution, including the connections on the back ends of each tube and to the regulator.
- d. Continue to check for leaks until the valve has been pressurized at 400 psi for a minimum of 30 minutes.

**Note: The pressure inside of the tubing may change up or down during the pressure test even without any leaks. Changes in temperature will directly affect the pressure in the tubing. This can happen as a result of a storm moving in to the area, or the sun going behind clouds (or coming out from clouds). When pressure testing at 400 psi, the pressure inside of the tubing and FCV will change approximately 0.75 psi per one degree Fahrenheit in temperature, up or down.**

8. If no leaks exist, bleed off the gas, remove the pressure cap and pressure line on the backside of the SS tubing spools, and reconnect the original caps/fittings on the back end of the tubing (acting as protection at this point).
9. If possible, tie the back ends of the tubing back on the spool, in order to better secure it during the rest of installation.
10. Proceed with installation, securing the tubing to the column pipe along the way. We recommend that the tubing be secured with SS banding or tape at least at every coupling and once in the middle of each 20 ft joint.
11. When all of the column pipe has been installed, determine how much of the downhole tubing you will need to leave in order to connect to the surface run of tubing. It is recommended to connect the surface portion of the tubing to the downhole tubing inside the pitless unit junction box or otherwise just outside of the wellhead. It is critical that the tubing splice/connection be made such that the fittings can be easily leak checked and/or replaced in the future without the need for a crane or hoist.
12. Run two lengths of the 316L tubing from the control panel location to the wellhead as needed. Depending on the length of the run, Baski may ship all of the required tubing for the two lines on one continuous spool to facilitate shipping. In that case you can either pull the tubing through the conduit twice directly from the spool or you can take half the tubing off of the spool and pull both lines at the same time.

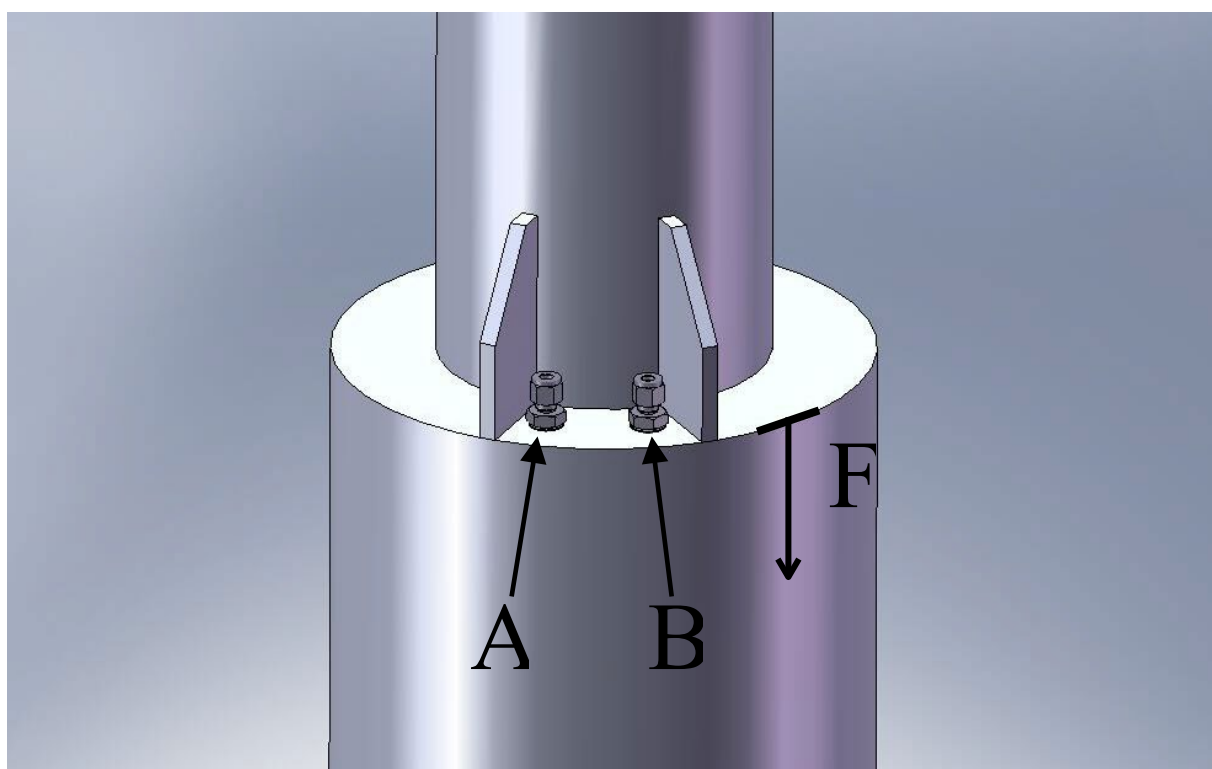
**Notes:**

-It is very helpful to keep control of the stainless steel tubing at all times during installation. Once the front end of the tubing is disconnected from the spool, the tubing will want to unspool itself by spinning the spool. If this happens, it is not the end of the world, but you will likely be fighting it all the way down. There are several ways to keep the tubing under control. Here is the best method we know of. After you have connected both inflation lines and completed the pressure test, use several wood screws to fasten the two tubing spools together. This allows them to act as one spool. Next, use a vice grip and adjust it to clamp on one of the spool flanges with one of the SS tubes also underneath/within the vice grip. Since the front end of the tubing is connected to the FCV and will not move, the having the vice grip over one of the tubes will keep the spool from spinning, without needing a crew member to hold it all the time. Then,



whenever the column is lowered down during installation, you just open up the vice grip and unspool as needed, putting the vice back on whenever you stop moving.

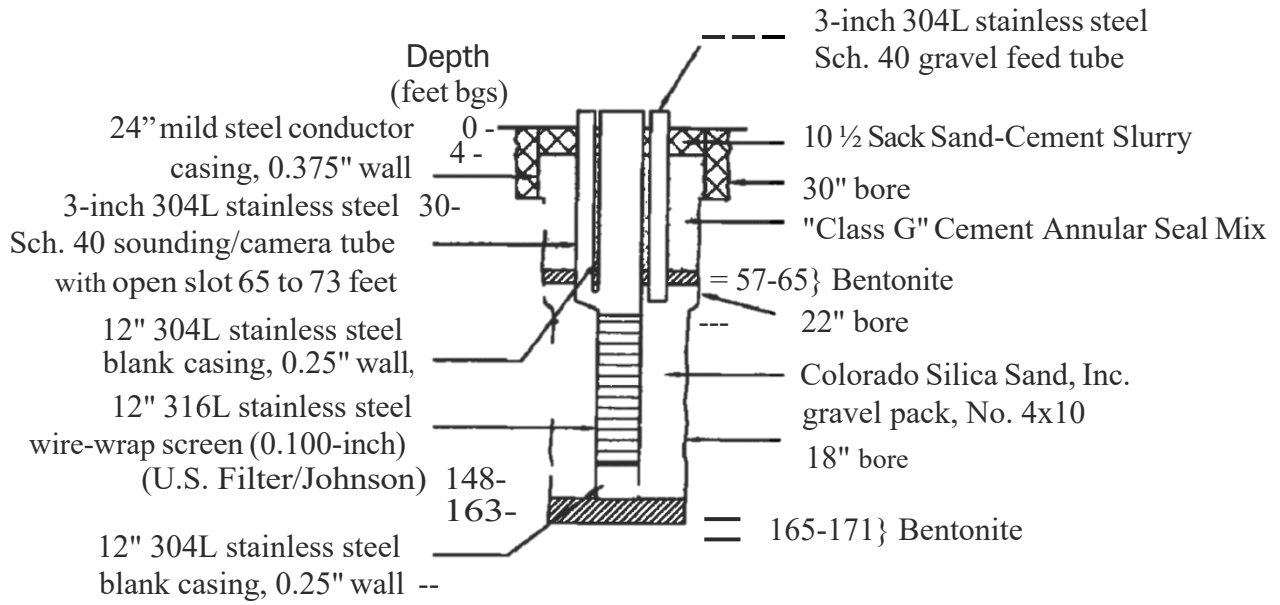
-If a chlorine solution is used to sanitize equipment going into the well, the chlorine in the solution must not exceed 200ppm. After using the chlorine solution, water should be used to wash off the solution or injected down the annular area between the OD of the column pipe and the ID of the casing to remove the solution from the control lines and other equipment, as chlorine is one of the few enemies of stainless steel. Baski strongly recommends not spraying the SS control lines with the chlorine solution.



**Figure 1: Flow Control Valve Diagram for Installation**

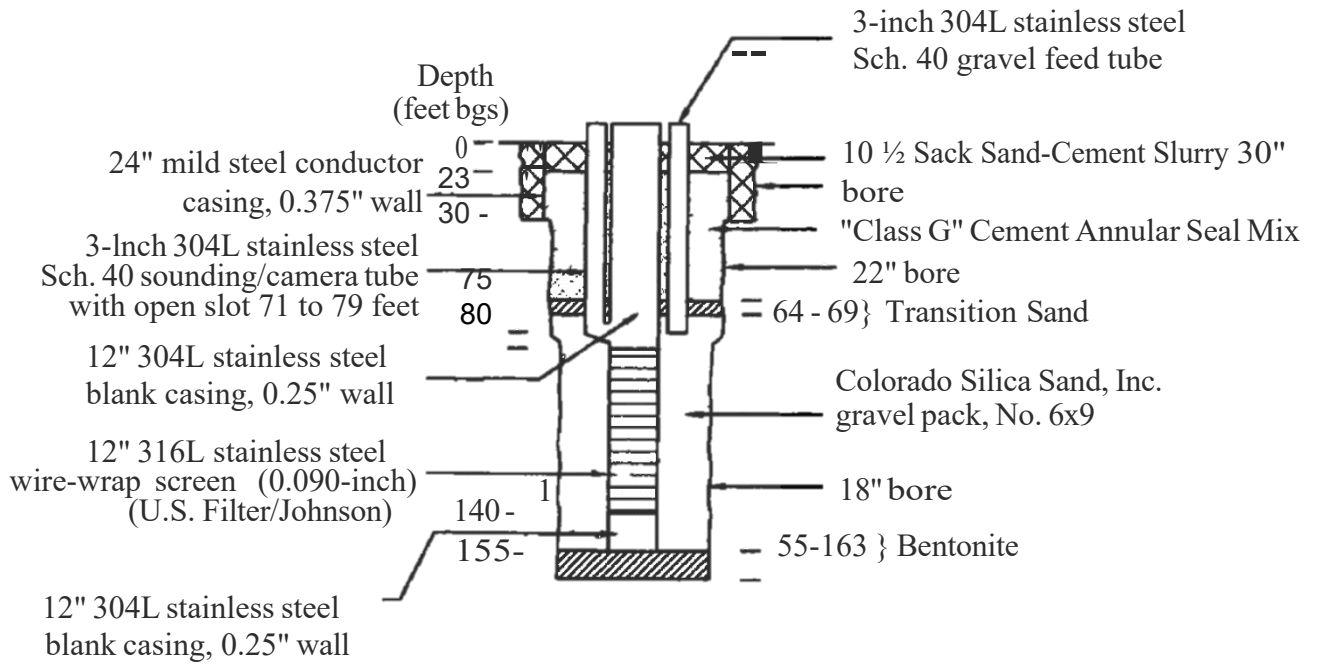
As-Built Drawings for Modern Injection Wells I-27, I-28, I-31 and I-32

FIGURE2  
 "As-Built" Well Schematic  
 Talbert Barrier Injection Well OCWD-127Af

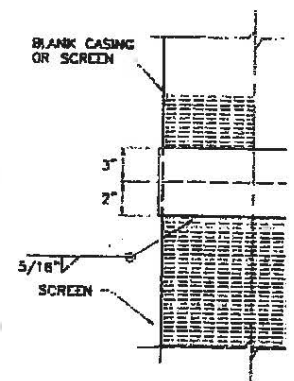
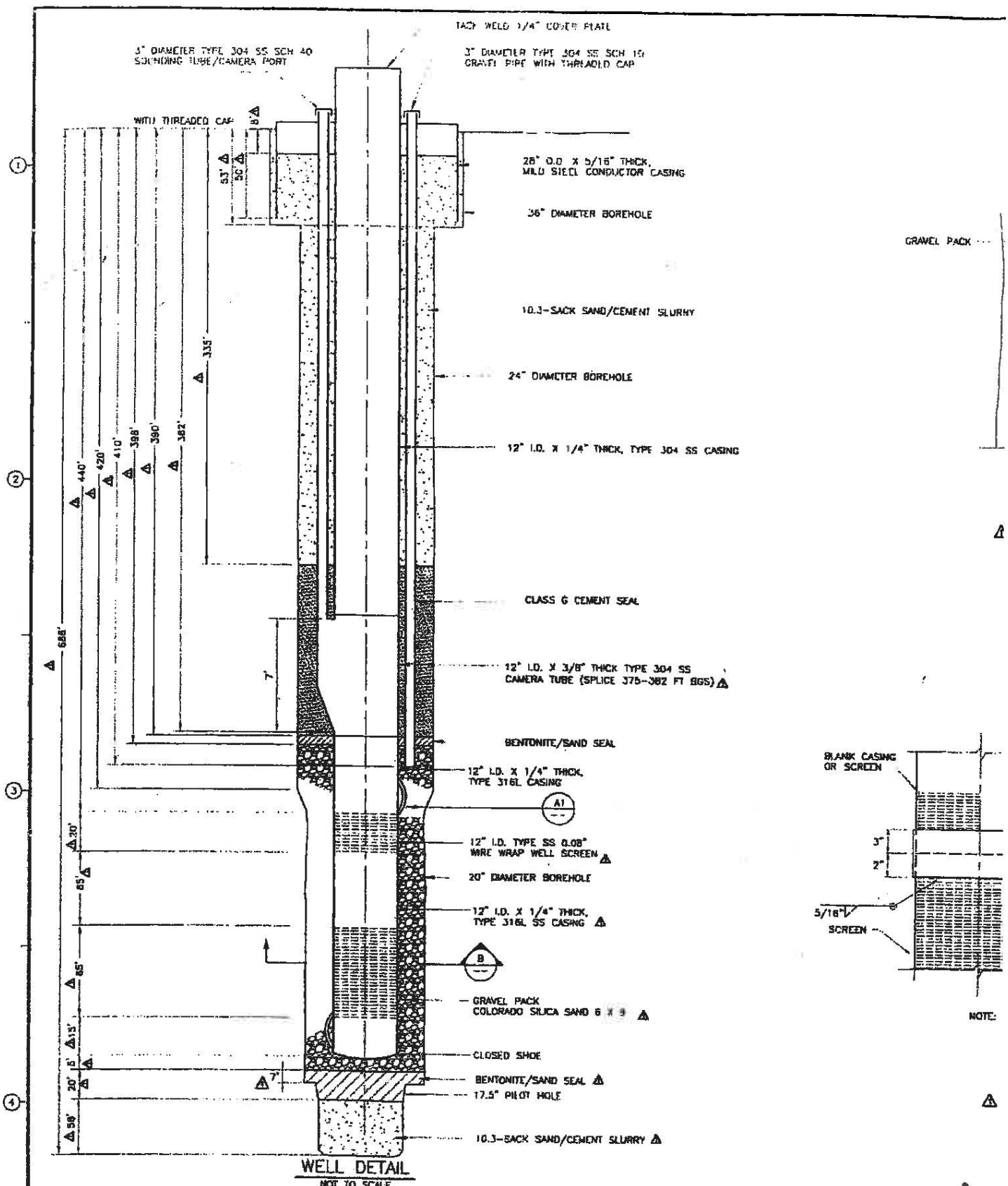


Well Constructed July 2003,  
 Bakersfield Well and Pump Co.  
 OCWD Contrad No.TAL-2002-2

FIGURE 5  
 "As-Built" Well Schematic  
 Talbert Barrier Injection Well OCWD – 128A/4



Well Constructed May 2003,  
 Bakersfield Well and Pump Co.  
 OCWD Contrad No. TAL-2002-2



NOTE:

**CDM**

**I-31K**

DESIGNED BY	S. ROWE
DRAWN BY	K. BAMEL
SHEET CHECKED BY	M. HOFFMAN
CROSS CHECKED BY	K. ROWE
APPROVED FOR	R. CORNOLLE
DATE	SEPTEMBER 2005

REV. NO.	DATE	DRWN	CHKD	REMARKS
1	9/05	XI	MH	REVISED PER AS-BUILT CONDITIONS

Camp Dresser & McKee Inc. an associated firm  
 Brown and Caldwell and Tetra Tech  
 18581 Tejar Avenue  
 Irvine, California 92612  
 Tel: (949) 752-5452  
 Fax: (949) 752-1307





# **EXHIBIT A-2:**

# **COST PROPOSAL SHEET**

## Exhibit A-2 - Cost Proposal Sheet Injection Well Redevelopment (RFP-25-006)

Company Name:		
California DIR Registration Number:		
Expiration Date:		
Contractor License Number:		
Expiration Date:		
	<b>Unit</b>	<b>Proposer's Rate</b>
<b>Phase I- Legacy Wells- Scope of Work:</b> *Rate(s) shall include any or all labor rate(s), service(s), material(s), equipment(s),		
Mobilization	lump sum	
Non-Rig Activities (straight time)	\$ / hour	
Rig Activities (straight time)	\$ / hour	
Non-Rig Activities (overtime)	\$ / hour	
Rig Activities (overtime)	\$ / hour	
<b>Phase II- Modern Wells- Scope of Work:</b> *Rate(s) shall include any or all labor rate(s), service(s), material(s), equipment(s),		
Mobilization	lump sum	
Non-Rig Activities (straight time)	\$ / hour	
Rig Activities (straight time)	\$ / hour	
Non-Rig Activities (overtime)	\$ / hour	
Rig Activities (overtime)	\$ / hour	
<b>Phase III- Mid Basin Injection Wells- Scope of Work:</b> *Rate(s) shall include any or all labor rate(s), service(s), material(s), equipment(s),		
Mobilization	lump sum	
Non-Rig Activities (straight time)	\$ / hour	
Rig Activities (straight time)	\$ / hour	
Non-Rig Activities (overtime)	\$ / hour	
Rig Activities (overtime)	\$ / hour	

\*Rate(s) shall include any or all labor rate(s), service(s), material(s), equipment(s),



OCWD RFP-25-006 - Injection Well Redevelopment

# **EXHIBIT B**

# **EVALUATION CRITERIA**

## ORANGE COUNTY WATER DISTRICT PROPOSAL EVALUATION FORM

**Project:** RFP for Injection Well Redevelopment (RFP-25-006)

**Proposing Firm:** \_\_\_\_\_

**Reviewer:** \_\_\_\_\_

Criteria	Weighting (%)	Score (1-5)	Weighted Score	Comments
1 Experience and Qualifications of the Project Team	50		0.00	
2 Record of Success on Recent Similar Project (includes the record of past performance in delivering such services)	25		0.00	
3 Price Proposal	25		0.00	
Total	100		0.00	

Scoring:

- 5 = Excellent
- 4 = Above Average
- 3 = Average
- 2 = Below Average
- 1 = Poor



OCWD RFP-25-006 - Injection Well Redevelopment

# EXHIBIT C

# SERVICES AGREEMENT

AGREEMENT NO. \*\*\*

with

\*\*\*

for

\*\*\*

This Agreement (the "Agreement") is made and entered into as of \*\*\*, by and between the ORANGE COUNTY WATER DISTRICT, a special governmental district organized and operating under the laws of the State of California (hereinafter "OCWD") and \*\*\* ("Contractor"). (The term Contractor includes professionals performing in a consulting capacity.)

PART I  
FUNDAMENTAL TERMS

- A. Location of Project: \*\*\*.
- B. Description of Services/Goods to be Provided: \*\*\* in accordance with PART IV, Scope of Services, included herein.
- C. Term: Unless terminated earlier as set forth in this Agreement, the services shall commence on \*\*\* ("Commencement Date") and the term of this Agreement shall continue through its expiration on \*\*\*.
- D. Party Representatives:
- D.1. OCWD designates the following person/officer to act on OCWD's behalf: \*\*\*
- D.2. Contractor designates the following person to act on Contractor's behalf: \*\*\*
- E. Notices: All notices and other writings required to be delivered under this Agreement to the parties shall be delivered at the addresses set forth in Part II ("General Provisions").
- F. Attachments: This Agreement incorporates by reference the following Attachments to this Agreement:
- |      |           |                    |
|------|-----------|--------------------|
| F.1. | Part I:   | Fundamental Terms  |
| F.2. | Part II:  | General Provisions |
| F.3. | Part III: | Special Provisions |
| F.4. | Part IV:  | Scope of Services  |
| F.5. | Part V:   | Budget             |

G. Integration: This Agreement represents the entire understanding of OCWD and Contractor as to those matters contained herein. No prior oral or written understanding shall be of any force or effect with regard to those matters covered by this Agreement. This Agreement supersedes and cancels any and all previous negotiations, arrangements, agreements or understandings, if any, between the parties, and none shall be used to interpret this Agreement.

IN WITNESS WHEREOF, the parties have executed and entered into this Agreement as of the date first set forth above.

ORANGE COUNTY WATER DISTRICT

\*\*\*

By: \_\_\_\_\_  
John C. Kennedy, General Manager

By: \_\_\_\_\_

Title: \_\_\_\_\_

By: \_\_\_\_\_  
Denis Bilodeau, Board President

By: \_\_\_\_\_

Title: \_\_\_\_\_

Dated: \_\_\_\_\_

APPROVED AS TO FORM:

Contractor Information:

RUTAN & TUCKER, LLP

Address for Notices and Payments:

\*\*\*

By: \_\_\_\_\_  
Jeremy N. Jungreis, General Counsel

\*\*\*

Attention: \*\*\*

Telephone: \*\*\*

Email.: \*\*\*

PART II  
GENERAL PROVISIONS

SECTION ONE: SERVICES OF CONTRACTOR

1.1 Scope of Services. In compliance with all terms and conditions of this Agreement, Contractor shall provide the goods and/or services shown on Part IV hereto ("Scope of Services"), which may be referred to herein as the "services" or the "work." If this Agreement is for the provision of goods, supplies, equipment or personal property, the terms "services" and "work" shall include the provision (and, if designated in the Scope of Services, the installation) of such goods, supplies, equipment or personal property.

1.2 Changes and Additions to Scope of Services. OCWD shall have the right at any time during the performance of the services, without invalidating this Agreement, to order extra work beyond that specified in the Scope of Services or make changes by altering, adding to, or deducting from said work. No such work shall be undertaken unless a written order is first given by OCWD to Contractor, incorporating therein any adjustment in (i) the Budget, and/or (ii) the time to perform this Agreement, which adjustments are subject to the written approval of the Contractor. It is expressly understood by Contractor that the provisions of this Section 1.2 shall not apply to services specifically set forth in the Scope of Services or reasonably contemplated therein. Contractor hereby acknowledges that it accepts the risk that the services to be provided pursuant to the Scope of Services may be more costly or time consuming than Contractor anticipates and that Contractor shall not be entitled to additional compensation therefor.

1.3 Standard of Performance. Contractor agrees that all services shall be performed in a competent, professional, and satisfactory manner in accordance with the standards prevalent in the industry, and that all goods, materials, equipment or personal property included within the services herein shall be of good quality, fit for the purpose intended.

1.4 Performance to Satisfaction of OCWD. Contractor agrees to perform all work to the satisfaction of OCWD within the time specified. If OCWD reasonably determines that the work is not satisfactory, OCWD shall have the right to take appropriate action, including but not limited to: (i) meeting with Contractor to review the quality of the work and resolve matters of concern; (ii) requiring Contractor to repeat unsatisfactory work at no additional charge until it is satisfactory; (iii) suspending the delivery of work to Contractor for an indefinite time; (iv) withholding payment; and (v) terminating this Agreement as hereinafter set forth.

1.5 Instructions from OCWD. In the performance of this Agreement, Contractor shall report to and receive instructions from OCWD's representative identified in Part I, or his or her designee. Tasks or services other than those specifically described in the Scope of Services shall not be performed without the prior written approval of the OCWD.

1.6 Familiarity with Work. By executing this Agreement, Contractor warrants that Contractor (i) has thoroughly investigated and considered the scope of services to be performed, (ii) has carefully considered how the services should be performed, and

(iii) fully understands the facilities, difficulties, and restrictions attending performance of the services under the Agreement. If the services involve work upon any site, Contractor warrants that Contractor has or will investigate the site and is or will be fully acquainted with the conditions there existing, prior to commencement of services hereunder. Should the Contractor discover any conditions, including any latent or unknown conditions, which will materially affect the performance of the services hereunder, Contractor shall immediately inform the OCWD of such fact and shall not proceed except at Contractor's risk until written instructions are received from the OCWD's Representative.

1.7 Prohibition Against Subcontracting or Assignment. Contractor shall not contract with any other entity to perform in whole or in part the services required hereunder without the express written approval of OCWD. In addition, neither the Agreement nor any interest herein may be transferred, assigned, conveyed, hypothecated, or encumbered voluntarily or by operation of law, whether for the benefit of creditors or otherwise, without the prior express written approval of OCWD. In the event of any unapproved transfer, including any bankruptcy proceeding, OCWD may, in its sole and absolute discretion, void the Agreement. No approved transfer shall release any surety of Contractor of any liability hereunder without the express consent of OCWD.

1.8 Compensation. Contractor shall be compensated in accordance with the terms of Part V hereto ("Budget"). Included in the Budget are all ordinary and overhead expenses incurred by Contractor and its agents and employees, including meetings with OCWD representatives, and incidental costs incurred in performing under this Agreement. Contractor shall be compensated for actual costs incurred by subcontractors or other services, and no mark-up will be paid to contractor by OCWD. Unless otherwise specified in Part V, OCWD shall compensate Contractor on a time-and-materials basis at the rates listed in Part V. Contractor shall submit an invoice referencing this Agreement, the Work Order number, date and description of services performed, and the amount. OCWD shall pay the Contractor within 30 days of receipt of the invoice.

## SECTION TWO: INSURANCE AND INDEMNIFICATION.

### 2.1 Insurance.

2.1.1. Insurance Required. Without limiting Contractor's indemnification obligations, Contractor shall procure and maintain, at its sole cost and for the duration of this Agreement, insurance coverage as provided below, against all claims for injuries against persons or damages to property which may arise from or in connection with the performance of the work hereunder by Contractor, its agents, representatives, employees, and/or subconsultants. All insurance coverages and policies required of Contractor for this Agreement are subject to acceptance and approval by OCWD.

Contractor shall not commence work under this Agreement until it has obtained the insurance required hereunder in a company or companies having an A.M. Best rating of A:VII and acceptable to the OCWD nor shall the Contractor allow any

subcontractor to commence work on its subcontract until all insurance required herein of the Contractor has been obtained by such subcontractor. The Contractor shall at the time of the execution of the Agreement present certificate(s) of insurance evidencing the coverage required by this Agreement.

All of the insurance shall be provided on policy forms and through companies satisfactory to the OCWD. The OCWD reserves the right to obtain complete, certified copies of all required insurance policies, including the policy declarations page with endorsement number. Failure to continually satisfy the insurance requirements is a material breach of contract.

2.1.2. Required Policies. The Contractor shall procure and maintain for the duration of the Agreement, and for five (5) years thereafter, insurance against claims for injuries, diseases, or death to persons or damages to property which thereafter may arise from or in connection with the performance of the work hereunder by the Contractor, his agents, representatives, employees, or subcontractors. Coverage shall be at least as broad as the following:

(a) *General Liability – Commercial General Liability (CGL) – Insurance Services Office (ISO) Commercial General Liability Coverage (Occurrence Form CG 00 01)* including products and completed operations, mobile equipment, property damage, bodily injury, personal and advertising injury with limit of at least two million dollars (\$2,000,000) per occurrence or the full per occurrence limits of the policies available, whichever is greater. If a general aggregate limit applies, either the general aggregate limit shall apply separately to this project/location (coverage as broad as the ISO CG 25 03, or ISO CG 25 04 endorsement provided to the OCWD or the general aggregate limit shall be twice the required occurrence limit. Any combination of a minimum \$1,000,000 per occurrence General Liability and Excess Liability or Umbrella to meet the \$2,000,000 total may be accepted in OCWD's sole discretion.

(b) *Automobile Liability – Insurance Services Office (ISO) Business Auto Coverage (Form CA 00 01)* covering Symbol 1 (Any Auto) and any mobile equipment used for the work pursuant to this Agreement with limit of one million dollars (\$1,000,000) for bodily injury and property damage each accident.

(c) *Workers' Compensation Insurance* – The Contractor shall provide Workers' Compensation coverage as required by the State of California, with Statutory Limits, and Employer's Liability Insurance with limit of no less than one million dollars (\$1,000,000) each accident, one million dollars (\$1,000,000 disease policy limit and one million dollars (\$1,000,000) disease each employee. These policies shall be endorsed to waive all rights of subrogation against OCWD, and its officers, officials, employees, agents, representatives and volunteers (collectively "OCWD and OCWD Personnel"), excluding professional liability.

Contractor hereby certifies that it is aware of the provisions of Section 3700 of the California Labor Code which requires every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that code, and it will comply with such provisions before commencing the performance of the work of this Agreement. Contractors and subcontractors will keep Workers Compensation Insurance for their employees in effect during all work covered by this Agreement.

In the event Contractor has no employees requiring Contractor to provide Workers' Compensation Insurance, Contractor shall so certify to OCWD in writing prior to OCWD's execution of this Agreement, in which event no Worker's Compensation Insurance shall be required by this Agreement. OCWD and OCWD Personnel shall not be responsible for any claims in law or equity occasioned by failure of Contractor to comply with this section or with the provisions of law relating to Workers' Compensation.

(d) *Professional Liability Insurance* – for any and all professional services provided pursuant to this Agreement, Contractor shall maintain Professional Liability Insurance appropriate to Contractor's profession covering wrongful acts, negligent actions, errors, and omissions with limits no less than \$1,000,000 per occurrence or claim, and \$2,000,000 policy aggregate. This requirement does not apply if the work provided pursuant to this Agreement does not involve the provision of professional services.

(e) *Other Insurance* – Other insurance policies and coverage if included in Part III, Special Provisions.

2.1.3. Policy Contents. The policies required above shall contain or be endorsed to contain the following:

(a) *Additional Insured Status* – The General Commercial Liability, Automobile Liability, and Professional Liability policies required above, shall be endorsed to provide that the OCWD and OCWD Personnel are to be given insured status (at least as broad as ISO Form CG 20 10 11 85 or if not available, through the addition of both CG 20 10 10 01 and CG 20 37 10 01) with respect to liability arising out of work or operations performed by or on behalf of the Contractor including materials, parts, or equipment furnished in connection with such work or operations. There shall be no special limitations on the scope of protection provided to OCWD and OCWD Personnel. This required status shall be provided in the form of a separate endorsement to the Contractor's insurance.

(b) *Primary Coverage* – For any claims related to work performed pursuant to this Agreement, the Contractor's insurance coverage shall be primary at least as broad as ISO CG 20 01 04 13 with respect to the OCWD, its directors, officers, employees, and authorized volunteers. Any insurance or self-insurance maintained by the OCWD, its directors, officers,

employees, and authorized volunteers shall be excess of the Contractor's insurance and shall not contribute with it.

(c) *Separate Application* – The policies required by this Agreement shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability.

(d) *Notices of Changes or Cancellation* – Policies shall be endorsed to state that coverage shall not be suspended, voided, cancelled, reduced in coverage or in limits, non-renewed, or materially changed for any reason, without thirty (30) days prior written notice thereof given by the insurer to OCWD by U.S. mail, or by personal delivery, except for nonpayment of premiums, in which case ten (10) days prior notice shall be provided.

2.1.4. Deductibles and Self-Insured Retentions. Insurance deductibles or self-insured retentions must be declared by the Contractor and approved by the OCWD. At the election of the OCWD, the Contractor shall either cause the insurer to reduce or eliminate such self-insured retentions with respect to the OCWD, its directors, officers, employees, and authorized volunteers or the Contractor shall provide a financial guarantee satisfactory to the OCWD guaranteeing payment of losses and related investigations, claim administration, and defense expenses. The policy language shall provide, or be endorsed to provide, that the self-insured retention may be satisfied by either the named insured or the OCWD.

2.1.5. Verification of Coverage, Evidence of Insurance. The Contractor shall furnish the OCWD with copies of certificates and amendatory endorsements affecting coverage required by this Agreement. All certificates and endorsements shall contain the name and number of this Agreement, and are to be received and approved by the OCWD before work commences. However, failure to obtain the required documents prior to the working beginning shall not waive the Contractor's obligation to provide them. The OCWD reserves the right to require complete, certified copies of all required insurance policies, including policy declaration pages and endorsement pages, required by these specifications, at any time. Failure to continually satisfy the insurance requirements is a material breach of contract.

2.1.6. Waiver of Subrogation (also known as Transfer of Rights of Recovery Against Others to Us). The Contractor hereby waives all rights of subrogation under this Agreement, and shall obtain endorsements necessary to affect this Waiver of Subrogation in favor of the OCWD, its directors, officers, employees, and authorized volunteers, for losses paid under the terms of this coverage which arise from work performed by the Named Insured for the OCWD; this provision applies regardless of whether or not the OCWD has received a Waiver of Subrogation from the insurer.

2.1.7. Continuation of Coverage. Contractor shall, upon demand of the OCWD deliver evidence of coverage showing continuation of coverage for at least five (5) years after termination of this Agreement. When any of the required coverages expire during the term of this Agreement, Contractor shall deliver the renewal certificate(s) including required endorsements and waivers of subrogation to OCWD at least ten (10) days prior to the expiration date.

2.1.8. Subcontractors. In the event that the Contractor employs other contractors (subcontractors) as part of the work covered by this Agreement, it shall be the Contractor's responsibility to require and confirm that each subcontractor meets the minimum insurance requirements specified above (via as broad as ISO CG 20 38 04 13), and to include the foregoing insurance requirements in favor of OCWD in the contract between Contractor and the subcontractor. The Contractor shall, upon demand of OCWD, and in all events prior to permitting the subcontractor to perform any work subject to this Agreement, deliver to the OCWD copies of such policy or policies of insurance and the receipts for payment of premiums thereon.

2.1.9. Other Policies. At the time of contract document preparation, efforts were made to include all known insurance requirements which would take place during the contract. It is possible additional insurance requirements may be made by another agency or government entity to provide additional insurance not included here. At the direction of the agency/entity, the Contractor shall comply and satisfy the additional insurance requirements.

2.2 Indemnification. The parties mutually acknowledge that OCWD has retained Contractor to perform the tasks and services set forth in this Agreement based upon the special skills, expertise and experience of Contractor. Accordingly, in performing the services under this Agreement, Contractor shall use the skill and care that a highly specialized professional, with expertise in the field, would use under similar circumstances. Further, the parties mutually agree that, to the extent that Contractor retains subcontractors or subcontractors to perform any portion of any of the tasks or services under this Agreement, Contractor has a duty to OCWD to ensure that the tasks and services performed by such subcontractors or subcontractors meet the same professional level, skill and expertise expected of Contractor.

2.2.1. Except as set forth in subdivision 2.2.2 or 2.2.3, Contractor shall indemnify, defend (with legal counsel acceptable to OCWD) and hold harmless OCWD and the OCWD Personnel from and against any and all actions, suits, claims, demands, judgments, attorneys fees, costs, damages to persons or property, losses, penalties, obligations, expenses or liabilities ("Claims") that may be asserted or claimed by any person or entity arising out of Contractor's performance of any tasks or services for or on behalf of OCWD, whether or not there is concurrent active or passive negligence on the part of OCWD and/or any OCWD Personnel, but excluding any Claims arising from the active negligence or willful misconduct of OCWD or any OCWD Personnel where the active negligence

or willful misconduct is determined to be the actual and proximate cause of the alleged injury.

2.2.2. The provisions of this subdivision 2.2.2 apply only in the event that Contractor is a “design professional” within the meaning of California Civil Code section 2782.8(c). If Contractor is a “design professional” within the meaning of Section 2782.8(c), then, notwithstanding subdivision 2.2.1 above, to the fullest extent permitted by law (including, without limitation, Civil Code sections 2782 and 2782.6), Contractor shall defend (with legal counsel reasonably acceptable to OCWD), indemnify and hold harmless OCWD and OCWD Personnel from and against any Claim that arises out of, pertains to, or relates to, directly or indirectly, in whole or in part, the negligence, recklessness, or willful misconduct of Contractor, any subcontractor, subcontractor or any other person directly or indirectly employed by them, or any person that any of them control, arising out of Contractor’s performance of any task or service for or on behalf of OCWD under this Agreement. Such obligations to defend, hold harmless and indemnify OCWD or any OCWD Personnel shall not apply to the extent that such Claims are caused in part by the sole active negligence or willful misconduct of OCWD or such OCWD Personnel. To the extent Contractor has a duty to indemnify OCWD or any OCWD Personnel under this subdivision 2.2.2, Contractor shall be responsible for all incidental and consequential damages resulting directly or indirectly, in whole or in part, from Contractor’s negligence, recklessness or willful misconduct.

2.2.3. The provisions of this subdivision 2.2.3 apply only in the event that this Agreement is a “construction contract” within the meaning of Civil Code Section 2782(b) and 2783. If this Agreement is a “construction contract” within the meaning of those statutes, then notwithstanding subdivision 2.2.1 above, to the fullest extent permitted by law, Contractor shall indemnify, defend (with legal counsel acceptable to OCWD) and hold harmless OCWD and the OCWD Personnel from and against any and all Claims that may be asserted or claimed by any person or entity arising out of Contractor’s performance of any tasks or services for or on behalf of OCWD, whether or not there is concurrent passive negligence on the part of OCWD and/or any OCWD Personnel, but excluding any Claims arising from the active negligence or willful misconduct of OCWD or any OCWD Personnel.

2.3 Survival. The provisions of this Section 2 shall survive termination of the Agreement.

### SECTION THREE: LEGAL RELATIONS AND RESPONSIBILITIES

3.1 Compliance with Laws. Contractor shall keep itself fully informed of all existing and future state and federal laws and all county, municipal and OCWD ordinances and regulations which in any manner affect those employed by it or in any way affect the performance of services pursuant to this Agreement. Contractor shall at all times observe and comply with all such laws, ordinances, and regulations and shall be responsible for the compliance of all work and services performed by or on behalf of

Contractor. When applicable, Contractor shall not pay less than the prevailing wage, which rate is determined by the Director of Industrial Relations of the State of California.

3.2 Licenses, Permits, Fees and Assessments. Contractor shall obtain at its sole cost and expense all licenses, permits, and approvals that may be required by law for the performance of the services required by this Agreement. Contractor shall have the sole obligation to pay any fees, assessments, and taxes, plus applicable penalties and interest, which may be imposed by law and arise from or are necessary for Contractor's performance of the services required by this Agreement, and shall indemnify, defend, and hold harmless OCWD against any such fees, assessments, taxes, penalties, or interest levied, assessed, or imposed against OCWD thereunder.

3.3 Covenant Against Discrimination. Contractor covenants for itself, its heirs, executors, assigns, and all persons claiming under or through it, that there shall be no discrimination against any person on account of race, color, creed, religion, sex, marital status, national origin, or ancestry, in the performance of this Agreement. Contractor further covenants and agrees to comply with the terms of the Americans with Disabilities Act of 1990 (42 U.S.C. §12101 et seq.) as the same may be amended from time to time.

3.4 Independent Contractor. Contractor shall perform all services required herein as an independent Contractor of OCWD and shall remain at all times as to OCWD a wholly independent Contractor. OCWD shall not in any way or for any purpose become or be deemed to be a partner of Contractor in its business or otherwise, or a joint venturer, or a member of any joint enterprise with Contractor. Contractor shall not at any time or in any manner represent that it or any of its agents or employees are agents or employees of OCWD. Neither Contractor nor any of Contractor's employees shall, at any time, or in any way, be entitled to any sick leave, vacation, retirement, or other fringe benefits from the OCWD; and neither Contractor nor any of its employees shall be paid by OCWD time and one-half for working in excess of forty (40) hours in any one week. OCWD is under no obligation to withhold State and Federal tax deductions from Contractor's compensation. Neither Contractor nor any of Contractor's employees shall be included in the competitive service, have any property right to any position, or any of the rights an employee may have in the event of termination of this Agreement.

3.5 Use of Patented Materials. Contractor shall assume all costs arising from the use of patented or copyrighted materials, including but not limited to equipment, devices, processes, and software programs, used or incorporated in the services or work performed by Contractor under this Agreement. Contractor shall indemnify, defend, and save the OCWD harmless from any and all suits, actions or proceedings of every nature for or on account of the use of any patented or copyrighted materials.

3.6 Proprietary Information. All proprietary information developed specifically for OCWD by Contractor in connection with, or resulting from, this Agreement, including but not limited to inventions, discoveries, improvements, copyrights, patents, maps, reports, textual material, or software programs, but not including Contractor's underlying materials, software, or know-how, shall be the sole and exclusive property of OCWD, and are confidential and shall not be made available to any person or entity without the prior

written approval of OCWD. Contractor agrees that the compensation to be paid pursuant to this Agreement includes adequate and sufficient compensation for any proprietary information developed in connection with or resulting from the performance of Contractor's services under this Agreement. Contractor further understands and agrees that full disclosure of all proprietary information developed in connection with, or resulting from, the performance of services by Contractor under this Agreement shall be made to OCWD, and that Contractor shall do all things necessary and proper to perfect and maintain ownership of such proprietary information by OCWD.

3.7 Ownership of Data, Reports and Documents. The Contractor shall deliver to OCWD's representative identified in Part I, at the end of the project, notes and surveys made, all reports of tests made, studies, reports, plans, a copy of electronic and digital files, and other materials and documents which shall be the property of OCWD. The Contractor is not responsible to third parties of OCWD's use of data, reports and documents on other projects. OCWD may use or reuse the materials prepared by Contractor in any manner desired without additional compensation to Contractor. Any work performed by Contractor under this Agreement shall be the property of OCWD.

3.8 Retention of Funds. Contractor hereby authorizes OCWD to deduct from any amount payable to Contractor (whether arising out of this Agreement or otherwise) any amounts the payment of which may be in dispute hereunder or which are necessary to compensate OCWD for any losses, costs, liabilities, or damages suffered by OCWD, and all amounts for which OCWD may be liable to third parties, by reason of Contractor's negligent acts, errors, or omissions, or willful misconduct, in performing or failing to perform Contractor's obligations under this Agreement. OCWD in its sole and absolute discretion, may withhold from any payment due Contractor, without liability for interest, an amount sufficient to cover such claim or any resulting lien. The failure of OCWD to exercise such right to deduct or withhold shall not act as a waiver of Contractor's obligation to pay OCWD any sums Contractor owes OCWD.

3.9 Termination By OCWD. OCWD reserves the right to terminate this Agreement at any time, with or without cause, upon prior written notice to Contractor. Upon receipt of any notice of termination from OCWD, Contractor shall immediately cease all services hereunder except such as may be specifically approved in writing by OCWD. Contractor shall be entitled to compensation for all services rendered prior to receipt of OCWD's notice of termination and for any services authorized in writing by OCWD thereafter. If termination is due to the failure of Contractor to fulfill its obligations under this Agreement, OCWD may take over the work and prosecute the same to completion by contract or otherwise, and Contractor shall be liable for the costs OCWD incurs in completion of the services required hereunder, including, but not limited to, costs incurred by OCWD in retaining a replacement Contractor, and similar expenses and costs, and including increased staff time costs incurred by OCWD.

3.10 Right to Stop Work; Termination By Contractor. Contractor shall have the right to stop work only if OCWD fails to timely make a payment required under the terms of the Budget. Contractor may terminate this Agreement only for cause, upon thirty (30) days' prior written notice to OCWD. Contractor shall immediately cease all services

hereunder as of the date Contractor's notice of termination is sent to OCWD, except such services as may be specifically approved in writing by OCWD. Contractor shall be entitled to compensation for all services rendered prior to the date notice of termination is sent to OCWD and for any services authorized in writing by OCWD thereafter. If Contractor terminates this Agreement because of an error, omission, or a fault of Contractor, or Contractor's willful misconduct, the terms of Section 3.9 relating to OCWD's right to take over and finish the work and Contractor's liability therefor shall apply.

3.11 Waiver. No delay or omission in the exercise of any right or remedy by a nondefaulting party on any default shall impair such right or remedy or be construed as a waiver. A party's consent to or approval of any act by the other party requiring the party's consent or approval shall not be deemed to waive or render unnecessary the other party's consent to or approval of any subsequent act. Any waiver by either party of any default must be in writing.

3.12 Legal Actions. Legal actions concerning any dispute, claim, or matter arising out of or in relation to this Agreement shall be instituted and maintained in the Superior Courts of the State of California in the County of Orange, or in any other appropriate court with jurisdiction in such County, and Contractor agrees to submit to the personal jurisdiction of such court.

3.13 Rights and Remedies are Cumulative. The rights and remedies of the parties are cumulative and the exercise by either party of one or more of such rights or remedies shall not preclude the exercise by it, at the same or different times, of any other rights or remedies for the same default or any other default by the other party.

3.14 Attorneys' Fees. In any action between the parties hereto seeking enforcement of any of the terms or provisions of this Agreement or in connection with the performance of the work hereunder, the party prevailing in the final judgment in such action or proceeding, in addition to any other relief which may be granted, shall be entitled to have and recover from the other party its reasonable costs and expenses, including but not limited to reasonable attorney's fees, expert witness fees and courts costs. If either party to this Agreement is required to initiate or defend litigation with a third party because of the violation of any term or provision of this Agreement by the other party, then the party so litigating shall be entitled to its reasonable attorney's fees and costs from the other party to this Agreement.

3.15 Force Majeure. The time period specified in this Agreement for performance of services shall be extended because of any delays due to unforeseeable causes beyond the control and without the fault or negligence of OCWD or Contractor, including but not restricted to acts of God or of the public enemy, unusually severe weather, fires, earthquakes, floods, epidemics, quarantine restrictions, riots, strikes, freight embargoes, wars, litigation and/or acts of any governmental agency, including OCWD, if the delaying party shall within ten (10) days of the commencement of such delay notify the other party in writing of the causes of the delay. If Contractor is the delaying party, OCWD shall ascertain the facts and the extent of delay, and extend the time for performing the services for the period of the enforced delay when and if in the

judgment of OCWD such delay is justified. OCWD's determination shall be final and conclusive upon the parties to this Agreement. In no event shall Contractor be entitled to recover damages against OCWD for any delay in the performance of this Agreement, however caused. Contractor's sole remedy shall be extension of this Agreement pursuant to this Section 3.15.

3.16 Non-liability of OCWD Officers and Employees. No officer, official, employee, agent, representative or volunteer of OCWD shall be personally liable to Contractor, or any successor in interest, in the event of any default or breach by OCWD, or for any amount which may become due to Contractor or its successor, or for breach of any obligation of the terms of this Agreement.

3.17 Conflict of Interest. No officer, official, employee, agent, representative or volunteer of OCWD shall have any financial interest, direct or indirect, in this Agreement, or participate in any decision relating to this Agreement which affects his or her financial interest or the financial interest of any corporation, partnership, or association in which he or she is interested, in violation of any Federal, State, or OCWD statute, ordinance, or regulation. The Contractor shall not employ any such person while this Agreement is in effect.

3.18 Compliance with California Unemployment Insurance Code Section 1088.8. If Contractor is a sole proprietor, then prior to signing the Agreement, Contractor shall provide to the OCWD a completed and signed Form W-9, Request for Taxpayer Identification Number and Certification. Contractor understands that pursuant to California Unemployment Insurance Code Section 1088.8, the OCWD will report the information from Form W-9 to the State of California Unemployment Development Department, and that the information may be used for the purposes of establishing, modifying, or enforcing child support obligations, including collections, or reported to the Franchise Tax Board for tax enforcement purposes.

3.19 Prevailing Wage Compliance. Contractor acknowledges and agrees that it shall be independently responsible for reviewing the applicable prevailing wage laws and regulations and effectuating compliance with such laws where they apply to the work performed pursuant to this Agreement, including, but not limited to the prevailing wage and related requirements set forth in this Section 3.19. Contractor shall bear all risks of payment or non-payment of prevailing wages under California law and/or the implementation of Labor Code Section 1781, as the same may be amended from time to time, and/or any other similar law.

The Contractor attention is directed to Division 2, Part 7, Chapter 1 of the Labor Code of the State of California and especially to Article 2 (Wages); and Article 3 (Working Hours), thereof.

Contractor hereby expressly acknowledges and agrees that OCWD has never previously affirmatively represented to Contractor, its employees or agents in writing or otherwise that the services performed under this Agreement are not a "public work," as defined in Section 1720 of the Labor Code. It is agreed by the Parties that, in connection with the development, construction (as defined by applicable law) and operation of the work  
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performed pursuant to this Agreement, including, without limitation, any public work (as defined by applicable law), if any, Contractor shall bear all risks of payment or non-payment of state and/or federal prevailing wages and/or the implementation of Labor Code Sections 1726 and 1781, as the same may be enacted, adopted or amended from time to time, and/or any other provision of law. To the extent applicable, OCWD will enforce all penalties required by law for Contractor's failure to pay prevailing wages.

Contractor shall comply with all applicable laws and regulations related to the payment of prevailing wages for the work performed hereunder, including but not limited to Sections 1720 et seq. and 1770 et seq. of the Labor Code, and interpreting case law and regulations. Contractor is independently responsible for reviewing and complying with all such laws (and every other law applicable to the Agreement). The requirements indicated in this Section 3.19 are duplicative, and not additive to California law, and shall not apply to any work not subject to the indicated State laws.

Without limiting the foregoing, in accordance with Sections 1773 and 1773.2 of the Labor Code, the OCWD has found and determined the general prevailing rates of wages in the locality in which the public work is to be performed are those determined by the Director of Industrial Relations and available at <https://www.dir.ca.gov/OPRL/DPreWageDetermination.htm>. Copies of the prevailing rates of wages are maintained with the OCWD's principal office and are available to any interested party on request. Contractor shall post a copy of the prevailing rate of per diem wages at each job site.

Pursuant to Labor Code Section 1775, it is hereby stipulated that Contractor shall, as a penalty to OCWD, forfeit not more than two-hundred dollars (\$200) for each calendar day, or portion thereof, for each worker paid less than the prevailing rates as determined by the Director of Industrial Relations for the work or craft in which the worker is employed for the work by Contractor or any sub-consultant or subcontractor.

Contractor is aware of and will comply with the provisions of Labor Code Section 1776, including the keeping of payroll records and furnishing certified copies thereof in accordance with said Section. Pursuant to Labor Code Section 1771.4, Contractor must submit certified payroll records to the Labor Commissioner using the Department of Industrial Relations' electronic certified payroll reporting (eCPR) system.

Contractor is aware of and will comply with the provisions of Labor Code Sections 1777.5 and 1777.6 with respect to the employment of apprentices. Pursuant to Section 1777.5 it is hereby stipulated that Contractor will be responsible for obtaining compliance therewith on the part of any and all sub-consultants or subcontractors employed by Contractor in connection with this Agreement.

Pursuant to Labor Code Section 1810, it is stipulated hereby that eight (8) hours labor constitutes a legal day's work hereunder.

Pursuant to Labor Code Section 1813, it is stipulated hereby that Contractor shall, as a penalty to OCWD, forfeit twenty-five dollars (\$25) for each worker employed in the execution of this Agreement by Contractor or by any subcontractor hereunder for each

calendar day during which such worker is required or permitted to work more than eight (8) hours in any one calendar day and forty (40) hours in any one (1) calendar week in violation of the provisions of Article 3 (commencing with Section 1810), Chapter 1, Part 7, Division 2 of the Labor Code.

Pursuant to Labor Code Section 1815, work performed by employees of contractors in excess of eight (8) hours per day, and 40 hours during any one week, shall be permitted upon public work upon compensation for all hours worked in excess of eight (8) hours per day at not less than 1 ½ times the basic rate of pay.

Pursuant to Labor Code Section 1725.5 and 1771.1, no contractor or subcontractor (or consultant or subconsultant) may be listed on a bid proposal for a public works project unless registered with the Department of Industrial Relations.

In accordance with Labor Code Sections 1860, 1861, and 3700, Contractor and every subcontractor is required the secure payment of compensation to all employees. By signing this Agreement, Contractor provides the following certification: "I am aware of the provisions of Section 3700 of the Labor Code which require every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that code, and I will comply with such provisions before commencing the performance of the work of this contract."

To the fullest extent permitted by law, Section 2.2, Indemnification, specifically encompasses Claims arising from or related to (i) the noncompliance by Contractor or any party performing the work of any applicable local, state, and/or federal law, including, without limitation, any applicable federal and/or state labor laws (including, without limitation, the requirement to pay state prevailing wages and hire apprentices); (ii) the implementation of Labor Code Sections 1726 and 1781, as the same may be amended from time to time, or any other similar law; and/or (iii) failure by Contractor or any party performing the work to provide any required disclosure or identification as required by Labor Code Section 1781, as the same may be amended from time to time, and/or any other similar law.

#### SECTION FOUR: MISCELLANEOUS PROVISIONS

4.1 Records and Reports. Upon request by OCWD, Contractor shall prepare and submit to OCWD any reports concerning Contractor's performance of the services rendered under this Agreement. OCWD shall have access, upon reasonable notice, to the books and records of Contractor related to Contractor's performance of this Agreement. All drawings, documents, and other materials prepared by Contractor in the performance of this Agreement (i) shall be the property of OCWD and shall be delivered at no cost to OCWD upon request of OCWD or upon the termination of this Agreement, and (ii) are confidential and shall not be made available to any individual or entity without prior written approval of OCWD. Contractor shall keep and maintain all records and reports related to this Agreement for a period of three (3) years following termination of this Agreement, and OCWD shall have access to such records upon 48 hours notice.

4.2 Notices. Unless otherwise provided herein, all notices required to be delivered under this Agreement or under applicable law shall be personally delivered, or delivered by United States mail, prepaid, certified, return receipt requested, or by reputable document delivery service that provides a receipt showing date and time of delivery. Notices personally delivered or delivered by a document delivery service shall be effective upon receipt. Notices delivered by mail shall be effective at 5:00 p.m. on the second calendar day following dispatch. Notices to the OCWD shall be delivered to the following address, to the attention of the OCWD Representative set forth in Paragraph D.1 of the Fundamental Terms of this Agreement:

To OCWD                      Orange County Water District  
Representative:         P. O. Box 8300  
   Fountain Valley, CA 92728-8300

Invoices only shall be properly identified with the corresponding Agreement No. and sent to one of the following:

apinvoices@ocwd.com

**OR** to the address shown below:

Orange County Water District  
Attention: Accounts Payable  
P. O. Box 20845  
Fountain Valley, CA 92728-0845

Notices to Contractor shall be delivered to the address set forth below Contractor's signature on Part I of this Agreement to the attention of Contractor's Representative set forth in Paragraph D.2 of the Fundamental Terms of this Agreement. Changes in the address to be used for receipt of notices shall be effected in accordance with this Section 4.2.

4.3 Construction and Amendment. The terms of this Agreement shall be construed in accordance with the meaning of the language used and shall not be construed for or against either party by reason of the authorship of this Agreement or any other rule of construction which might otherwise apply. The headings of sections and paragraphs of this Agreement are for convenience or reference only and shall not be construed to limit or extend the meaning of the terms, covenants and conditions of this Agreement. This Agreement may only be amended by the mutual consent of the parties by an instrument in writing.

4.4 Severability. Each provision of this Agreement shall be severable from the whole. If any provision of this Agreement shall be found contrary to law, the remainder of this Agreement shall continue in full force.

4.5 Authority. The person(s) executing this Agreement on behalf of the parties hereto warrant that (i) such party is duly organized and existing, (ii) they are duly authorized to execute and deliver this Agreement on behalf of said party, (iii) by so

executing this Agreement, such party is formally bound to the provisions of this Agreement, and (iv) the entering into this Agreement does not violate any provision of any other Agreement to which said party is bound.

4.6 Special Provisions. Any additional or supplementary provisions or modifications or alterations of these General Provisions shall be set forth in Part III of this Agreement (“Special Provisions”).

4.7 Precedence. In the event of any discrepancy between Part I (“Fundamental Terms”), Part II (“General Provisions”), Part III (“Special Provisions”), Part IV (“Scope of Services”), and/or Part V (“Budget”), Part III shall take precedence and prevail over Parts I, II, IV and V; Part II shall take precedence and prevail over Parts I, IV and V; Part IV shall take precedence and prevail over Parts I and V; and Part V shall take precedence over Part I.

4.8 OCWD Contract Management Authority. The OCWD General Manager (or his or her duly authorized representative) shall have the authority to make approvals, issue interpretations, execute documents to implement or clarify this Agreement, waive provisions, and/or enter into certain amendments of this Agreement on behalf of OCWD so long as such actions do not result in any of the following: (a) an increase in the Budget set forth in Part V hereto, (b) a decrease in the scope of services without a corresponding reduction in the Budget, or (c) an increase in the risk of liability to OCWD. Such approvals, interpretations, waivers and/or amendments may include extensions of time to perform.

PART III  
SPECIAL PROVISIONS

SAMPLE

PART IV  
SCOPE OF SERVICES

SAMPLE

PART V  
BUDGET

OCWD shall compensate Contractor in accordance with the below for a not-to-exceed fee of \$**\*\*\***.00.

SAMPLE



OCWD RFP-25-006 - Injection Well Redevelopment

# EXHIBIT D

# CONTRACTOR SAFETY PROGRAM



OCWD RFP-25-006 - Injection Well Redevelopment

## **EXHIBIT D-1**

# **CONTRACTOR ENVIRONMENTAL HEALTH & SAFETY HANDBOOK**



SINCE 1933



# Contractor Environmental Health & Safety (EHS) Handbook

Orange County Water District  
18700 Ward Street  
Fountain Valley, CA 92708

ATTENTION: Orange County Water District (OCWD) Contractors

This handbook is designed to help you understand and comply with OCWD's Contractor Safety requirements.

This handbook is not intended to replace Federal, State or Local regulations regarding Contractor performance. Contractor shall keep itself fully informed of all existing and future state and federal laws and all county and city ordinances and regulations which in any manner affect the activities of Contractor and of all such orders and decrees of bodies or tribunals having any jurisdiction or authority over the same. Contractor shall at all times observe and comply with all such existing laws, ordinances, regulations, orders and decrees, and shall protect and indemnify OCWD, its officers, directors, employees and agents against any claim or liability arising from or based on the violation of any such law, ordinance, regulation, order or decree.

Your full support and cooperation are required to comply with all the regulations including those contained in this handbook. References to **“contractor”** shall also include subcontractors, vendors, consultants and the like. OCWD reserves the right to change or waive the policies and provisions herein contained, at any time at its discretion.

Questions regarding OCWD Contractor Safety Program should be directed to your project manager.

Thank You For Your Cooperation.

OCWD Management

This handbook is not intended to replace Federal, State or Local regulations regarding Contractor performance

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XXI.	<b>CONTRACTOR’S ENVIRONMENTAL HEALTH &amp; SAFETY (EHS) AGREEMENT</b>	

## I. CONTRACTOR SAFETY REVIEW

Prior to initiating any contract work at any OCWD facility, contractors must:

- Agree to follow the requirements set forth herein and all additional applicable Federal, State and local safety and environmental rules, regulations, ordinances and the like.
- Complete a Safety Review Process (to include pre-work orientation). OCWD Project Manager and Risk & Safety will evaluate the information and forms for approval to perform work at OCWD.

## II. SECURITY

Trespassing: Contractors, sub-contractors and their employees must confine themselves to the immediate site of their work, except when traveling between site and entrance or other places where they may have proper business.

Parking / Motor Vehicles / Deliveries: Contractor employees are permitted to park only in designated areas. The on-site speed limit is 15 miles per hour. All traffic signs must be obeyed. Pedestrians have the right-of-way. Contractors must arrange with the OCWD representative for the on-site delivery of materials, equipment and tools required for work performance. Contractors must obtain permission from the OCWD representative prior to using loading docks and platforms.

Alcoholic Beverages / Illegal Drugs: Alcoholic beverages and illegal or controlled drug substances are strictly prohibited on all OCWD premises.

Firearms / Explosives: Firearms and ammunition are not permitted on OCWD property. Explosive power tools are permitted with prior written approval from OCWD Project Manager. Only employees who have been trained in the operation of the particular tool in use shall be allowed to operate a powder-actuated tool.

Emergency Alarms and Evacuation Routes: Contractors need to review the site evacuation map with the project manager and communicate the information to their staff.

Contractors Equipment: Contractors will supply all equipment, which will be maintained in good operating condition, for work required by the project. A contractor is not permitted to use forklift equipment, ladders, tools, etc. owned by OCWD.

### III. EMERGENCY PROCEDURE



Emergencies that require a 911 call must be followed by a call to our internal emergency line for notification and building/area access for emergency personnel. **OCWD's internal emergency line is extension 3300 from an OCWD internal phone or 714-378-3300 from a cell phone.**

When the fire alarm sounds leave the building by the nearest safe exit and go to the designated assembly area to report your presence so you can be accounted for. Do not re-enter the building until the "All Clear" has been given by emergency personnel.

### IV. GENERAL DRESS AND CONDUCT

Contractor personnel will wear suitable clothing consistent with facility requirements. Shorts, tank tops, sandals and open toed shoes are not permitted.

Contractor personnel will behave in a mature and professional manner. Horseplay, foul language, fighting, or harassment of any kind will not be tolerated.

### V. FOOD, BEVERAGES AND DRINKING WATER

Not all water systems at OCWD facilities are potable or suitable for drinking. Contractor personnel shall not drink from any non-potable sources. Water obtained from drinking fountains, bottled water sources and fresh water dispensing units are acceptable.

Contractor shall provide its own water to employees as required by the Heat Illness Prevention Program.

Eating is permitted in vending areas, lunchrooms and designated areas. Food and drinks are not allowed in laboratory areas at any time.

## VI. SMOKING



Smoking (including cigarettes, pipes, cigars, electronic cigarettes, vaporizers, and vape pens) is not permitted in any buildings, facilities, vehicles, or any other indoor work area, under any circumstances. Smoking shall also be prohibited within 20 feet of entryways and windows of buildings and facilities leased or owned by the District as well as within 50 feet of all confined spaces (i.e. sewers, manholes, sewer lift stations, vaults, reservoirs, etc.) *Cal/OSHA, §5148. Prohibition of Smoking in the Workplace.*

## VII. HOUSEKEEPING

Contract personnel must maintain proper housekeeping practices while onsite. At the end of each day, contractors must remove all rubbish, equipment, tools and machinery and leave the area clean. OCWD will provide a designated location to set up trailers, craft equipment and materials. These areas must be kept clean and orderly. All materials and equipment, including tools and tool boxes, are to be stored within the areas designated by OCWD representatives.

Refuse burning, and/or open fires are prohibited.

Do not mix contractor generated waste with OCWD facility waste.

Contractors are required to cover and/or use plastic barriers, e.g., Visqueen, as appropriate, to protect sensitive computer, laboratory, and other equipment, furniture, flooring, and office areas where dust, dirt, debris, etc. can be generated from work activities involving ceiling tiles, drywall, flooring, saw cutting, jack-hammering and the like.

When generating dust indoors, (e.g. jackhammering, abrasive blasting, etc.) contractors must provide air filtration system or similar ventilation system to pull dust away from workers and occupied areas (similar to asbestos negative pressure ventilation).



## VIII. UTILITIES AND SERVICES

Contractors must never dispose of paints, acids, caustics, cleaning agents, grease, or any other hazardous material down sinks, floor drains or storm drains.

All spills must be reported to the Risk & Safety Department immediately.

Contractors are not permitted to make connections to site electric, water, wastewater, steam, compressed air or other plant utilities without approval from the OCWD Project Manager.

No water may be used from any fire hydrants, fire standpipes or risers, or hose stations for any purpose other than to fight a fire.

New or modified electrical / plumbing and utility circuits must be identified and tagged. Prints are to be updated as any changes occur.

Electrical power, steam, water (hot, cold, chilled, etc.), natural gas, vacuum, etc. shall not be shut off to any equipment, machinery or other services without approval from the Project Manager.

## IX. RISK & SAFETY INSTRUCTIONS

OCWD has developed safety procedures to protect our employees, visitors, contractors, community, facilities and the environment. Upon request, Contractors can be provided with in-house safety procedures applicable to their work. For further clarification on any of these rules or if requirements are not fully understood, contractors must contact the OCWD Project Manager or Risk & Safety Department.

OCWD site will be considered multi-employer site per Cal OSHA §336.10 and all contractors and subcontractors will be held accountable for safety of their own employees as well as OCWD employees. No shortcuts will be tolerated and we expect full cooperation from our contractors when it comes to safety compliance.

Safety policies and procedures must be followed at all times without exception. Safety concerns shall be reported directly to the OCWD Project Manager who must consult the Risk & Safety Department to resolve potential hazards or outstanding safety concerns and issues.

All work related injuries, illnesses, accidents and/or incidents must be reported to the OCWD Project Manager and to the Risk & Safety Department immediately.

## X. SAFETY EQUIPMENT

Contractor's employees should use eyewash and safety showers in applicable emergency situations.

Obey all OCWD safety signs and hazard warnings including the use of safety

glasses/goggles in designated areas. Signs are posted for everyone's safety.

The use of appropriate signs (i.e., danger, wet floor, etc.) is mandatory where hazards exist to communicate and prevent accidents & injuries.

All overhead work must be roped off. Planking and scaffolds must be secured safely.

All open ditches, trenches, excavations, potholes and the like must be marked by barriers and signs.

Contractors must not remove any safety equipment (fire exit signs, fire extinguishers, safety mirrors, railings, chains, etc.) without prior approval from the Risk & Safety Department.

All ladders must meet the applicable regulatory requirements. Metal ladders are not to be use for electrical work or stored near electrical panels. It is prohibited for anyone to stand on the top two steps of any ladder.

## XI. CUTTING, WELDING AND HOT WORK



A hot work permit must be obtained and signed daily from the Maintenance Department (or Control Room supervisor for after-hour/weekend work) for burning, welding, cutting, brazing, soldering and other work involving open flame or an electric arc per OCWD Fire Prevention Plan.

The permitted Hot Work area must be prepared and checked by the contractor prior to any welding and/or burning being performed. Inspection of the area should at a minimum include removing all combustible material from the area.

Proper safety equipment must be worn in the Hot Work process.

Fire watch must be performed by the contractor after the Hot Work and inspected by OCWD Maintenance Department or OCWD Inspector. Hot Work Permits must be returned to the Maintenance Department for fire watch signoff.

Hot Work Permits must be returned to the Maintenance Manager or designee for fire watch signoff and final checkup.

A Class ABC fire extinguisher MUST be nearby when there is Hot Work being performed.

*Cal/OSHA, § 4848. Fire Prevention in Welding and Cutting*

*Cal/OSHA § 6777, Hot Work Permits*

*Cal/OSHA §1537. Welding, Cutting, and Heating of Coated Metals*

*Cal/OSHA § 1536. Ventilation Requirements for Welding, Brazing, and Cutting*

## XII. CONFINED SPACES



Contractor personnel are not permitted to enter any confined space at OCWD until approved by the OCWD Project Manager. Contractors are required to provide a copy of the following prior to entering Confined Spaces:

- Training documentation for those entering confined spaces
- Copy of completed entry permit

The OCWD Project Manager or designee will inform the contractor about known hazards of the confined space.

Contractor is required to inform the OCWD Project Manager of any hazards confronted or created in the confined space.

Confined Space Entry PERMIT and MONITORING must be completed prior to entry.

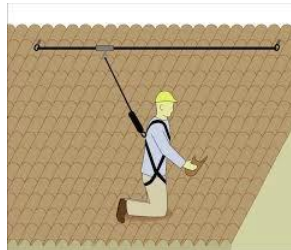
Permit-Required Confined Spaces means a confined space that has one or more of the following characteristics:

- Contains or has a potential to contain a hazardous atmosphere;
- Contains a material that has the potential for engulfing an entrant;
- Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross-section; or contains any other recognized serious safety or health hazard.

Examples of permit required confined space include but not limited to: tanks, manholes, vaults, pipes, and secondary containment pits.

*Cal/OSHA §5157. Permit-Required Confined Space.*

### XIII. ROOF AND ELEVATED SURFACE WORK



No access to the roof is allowed without the OCWD Project Manager or the Maintenance Manager notice. No smoking is allowed on the roof. Communication such as a two way radio or cell phone is required. Contract employees are not allowed to work near unguarded skylights without fall prevention equipment.

- *Article 16. Standard Railings (Cal/OSHA Construction Safety Orders 1620 - 1621)*
- *Article 19. Floor, Roof and Wall Openings (Cal/OSHA Construction Safety Orders 1632 - 1633)*
- *Article 21. Scaffolds - General Requirements (Cal/OSHA Construction Safety Orders 1635.1 1637)*
- *Article 22. Scaffolds - Various Types (Cal/OSHA Construction Safety Orders 1640 - 1655)*
- *Article 24. Fall Protection (Cal/OSHA Construction Safety Orders 1669 - 1672)*
- *Article 2. Standard Specifications (Cal/OSHA General Industry Safety Orders, 3209 – 3239).*

### XIV. LOCKOUT / TAGOUT



Contractor personnel must comply with all requirements of the OCWD Lockout / Tagout procedure when working on any system with potential energy from any source (electric, mechanical, hydraulic, steam, etc.).

OCWD designated Operations personnel, will place their lock first and will be the last person to remove their lock during a lockout process involving contractors. All contractors and personnel working on a locked out system must have their own locks. All locks must be applied for all workers and the system not restarted until the last lock is removed. It is forbidden for anyone to remove another person's lock.

*CAL/OSHA §3314. The Control of Hazardous Energy for the Cleaning, Repairing, Servicing, Setting-Up, and Adjusting Operations of Prime Movers, Machinery and Equipment, Including Lockout/Tagout.*

XV. COMPRESSED GASES



Contractor personnel must comply with all requirements for identifying, storing and safely using cylinders of compressed gases (air, oxygen, helium, acetylene, argon, hydrogen, nitrogen, liquid nitrogen, etc.). Free standing gas cylinders (unsecured) are not allowed on site. All gas cylinders must be used, stored and secured properly (i.e. chained, strapped)

*Cal/OSHA §4650. Storage, Handling, and Use of Cylinders and Compressed Gases.*

XVI. ASBESTOS



Contractors are prohibited from using any materials, supplies, or other objects that contain or may potentially contain asbestos or asbestos fibers.

Contractors who identify materials that are suspected of containing asbestos must immediately stop work and notify the OCWD Project Manager.

*CAL/OSHA §1529. Asbestos.*

XVII. FIRE PROTECTION



Self-closing safety cans with flame arrestors must be used with all flammable liquid of 5 gallons or more.

Fire protection and emergency equipment (fire extinguishers, pull alarms, exits, hydrants, etc.), must not be blocked with materials and equipment.

The use of portable gasoline-powered equipment within OCWD buildings and on the roofs of OCWD buildings is prohibited.

Approval from the OCWD Risk & Safety Department is required before temporarily obstructing roadways that could block the movement of emergency equipment, plant vehicles or agency (fire trucks, ambulances, police cars, etc.)

*CAL/OSHA §3221. Fire Prevention Plan*

## XVIII. HAZARD COMMUNICATION



Contractors must provide Safety Data Sheets (SDS) of all chemicals that will be brought onsite to the Risk & Safety Department. Contractors must inform the OCWD Project Manager of any hazardous conditions which might arise in the performance of their job.

Safe chemical handling procedures must be used by contractor personnel to ensure exposure levels remain safe for all OCWD employees.

Personal Protective Equipment (PPE) specified and recommended in the SDS should be worn properly at all times the chemical(s) is in use.

*CAL/OSHA §5194. Hazard Communication*

## XIX. PROTECTIVE CLOTHING AND PERSONAL PROTECTIVE EQUIPMENT (PPE)



Contractor personnel will use PPE required for the job (e.g. eye protection with side shields, goggles, welding helmet, hearing protection, hard hats, and safety shoes, etc.). PPE will be worn in all posted areas or whenever hazards associated with the task being performed warrant further protection. Eye protection must always be worn when using hand or power tools and when working with chemicals.

Contractors are responsible for supplying their workers with the required PPE while performing work at OCWD.

*CAL/OSHA §3380. Personal Protective Devices*

BASIC SAFETY INSPECTION	Y	N/A
Eye protection worn when working with power tools and when possible contact with flying particles, hazardous substances, projections or injurious light rays and in designated areas (i.e. lab).		
Hard Hats worn in construction areas and where there is a potential for falling objects.		
Proper Attire worn (e.g. long pants and sturdy shoes or safety shoes) in required areas/construction sites.		
Hearing Protection worn in required areas or when noise is at or above 85 dB.		
Emergency Equipment & Exits are not blocked and easily accessible in case of an emergency.		
Aisles and Floors are kept free of obstruction that can cause slip, trip, & falls (e.g. cords, tools, equipment).		
Tools are put away and stored properly after usage.		
Safety Data Sheets provided for hazardous chemicals brought onsite.		
Hazardous Materials are clearly labeled in compliance with Hazard Communications & GHS requirements.		
Safety Signs and Barriers used as required.		
Protection of OCWD Property & Equipment during work (e.g. computers covered properly).		
Proper housekeeping maintained; area cleaned up at end of shift.		
Required Permits available (i.e. Hot Works, Confined Space).		
No live Electrical Work without I&E Manager approval.		
Lockout/Tagout specific procedure available and followed.		
Confined space permit and monitoring completed prior to entry into confined space.		
Asbestos containing materials are not brought onsite.		
Contractor employees are informed on OCWD emergency process & notification. Workers calling 911 <b>must also call OCWD's emergency number: (714) 378-3300</b> to notify.		
Evacuation is required when the fire alarm is activated. Roll call will be conducted at the assembly area.		
Immediate Notification to OCWD project manager if FM-200 alarm is activated.		
Use of Portable Gasoline-Powered Equipment within and on the roofs of OCWD buildings is strictly Prohibited.		
Gas cylinders used, transported & stored properly (on carts & properly strapped to prevent tipping).		
Self-Closing Safety Cans with flame arrestors used for 5 gallons or more of Flammable liquids.		
Working at Heights (unprotected/unguarded above 48 inches) appropriate fall protection/guarding to protect against falls.		
Ladders inspected & used properly. NO Standing or working on the top cap or the step below the top cap of a stepladder.		
Excavation/Trenching permit for excavation 5 feet or deeper.		
Powered Industrial Vehicle operator's pre-use inspection completed and available upon request.		
Crane operators trained/certified as required.		
Traffic Control work comply with Cal/OSHA and Cal Trans requirements. This includes proper work zone set up and high visibility safety apparel for workers.		
Other:		

**NOTE:** *These are NOT intended to replace Federal, State, Local laws or Ordinances and Regulations regarding Contractor Environmental Health & Safety (EHS) performance. All work in areas where there is imminent danger to employees will cease until the dangerous condition is removed.*

## CONTRACTOR'S ENVIRONMENTAL HEALTH & SAFETY AGREEMENT

I have read the information stated in the OCWD's Contractor Environmental Health & Safety Handbook. I understand that the information provided covers brief highlights of the OCWD's safety programs. It is my responsibility to review the updated programs and communicate the safety information & requirements to my employees.

I understand that the Contractor's Environmental Health & Safety Handbook is not intended to replace Federal, State or Local regulations regarding Contractor performance. Contractor shall keep itself fully informed of all existing and future state and federal laws and all county and city ordinances and regulations which in any manner affect the activities of Contractor and of all such orders and decrees of bodies or tribunals having any jurisdiction or authority over the same. Contractor (including contractor employees and subcontractors) shall at all times observe and comply with all such existing and future laws, ordinances, regulations, orders and decrees, and shall protect and indemnify OCWD, its officers, directors, employees and agents against any claim or liability arising from or based on the violation of any such law, ordinance, regulation, order or decree.

Contractor Company \_\_\_\_\_

Contractor Name & Title  
(Please Print): \_\_\_\_\_

Contractor Signature: \_\_\_\_\_

Date: \_\_\_\_\_

***FORWARD A SIGNED COPY OF THE CONTRACTOR'S AGREEMENT PAGE TO RISK & SAFETY DEPARTMENT***



## **EXHIBIT D-2**

# **APPENDIX B: CONTRACTOR REQUIRED INFORMATION FORM**

## APPENDIX B

### INSTRUCTIONS FOR CONTRACTORS

All licensed contractors interested in performing work for Orange County Water District (OCWD) must complete and provide the information requested in the “Contractor Required Information packet;” meet the criteria listed below and participate in a pre-project safety orientation meeting:

The Criteria below is required in order to comply with OCWD’s Contractor Safety Program and Cal/OSHA’s Multi-Employer Worksite Standard\*

*\*California Labor Code Sections 6400, 6401, 6401.7, 6402 through 6404 and Title 8, California Code of Regulations, Sections 336.10 and 336.11*

#### **CONTRACTOR CRITERIA REQUIREMENTS:**

- EMR greater than 1.25 for any year in the last three years.
- Received a Cal/OSHA regulatory citation and penalties assessed against your firm for any “serious,” “willful” or “repeat” violation as defined by Cal/OSHA, Title 8, sections §330 and §334, in the past three years?  
Yes  No

If “yes,” attach a separate signed page describing the citations, including information about the dates of the citations, the nature of the violation, the project on which the citation(s) was or were issued, the amount of penalty paid, if any. If the citation was appealed and a decision has been issued, state the case number and the date of the decision.

*NOTE: If you have filed an appeal of a citation, and the Appeals Board has not yet ruled on your appeal, you need not include information about it.*

- Failure to provide all requested information.

NOTE: if the contractor is disqualified based on the information above, the awarding body will analyze the issues using the following two factors for potential consideration of the award:

1. Whether the incident was a good faith mistake and, if so, the error was promptly and voluntarily corrected when brought to the attention of the Contractor or Subcontractor, AND
2. Whether the Contractor or Subcontractor has a prior history of good performance, and the incident was openly reported, and the triggering event is not related to a major scope of work, caused by negligence, or resulted in regulatory violations or civil liability against awarding bodies.

Any policy year above 1.25 submit additional documentation to show incidents that resulted in increased EMR subject to review by the awarding party.

**APPENDIX B: CONTRACTOR REQUIRED INFORMATION**

**Part 1: CONTRACTOR INFORMATION SECTION - To Be Completed By Contractor**

- Contractor's Name: \_\_\_\_\_
- Contractor's License (copy of license if applicable): \_\_\_\_\_
- California Registration Number (if applicable): \_\_\_\_\_
- Experience Modification Rate (EMR) for each of the past three premium years:  
 Current year: \_\_\_\_\_ Previous year: \_\_\_\_\_ Year prior to previous year: \_\_\_\_\_
- Copy of 3 Years of OSHA 300A Annual Summary (If greater than 10 employees)
- How many serious injuries or fatalities has your company experienced in the past three years? \_\_\_\_\_
- How many Regulatory Violations has your company had in the last 3 years? \_\_\_\_\_

**Part 2: SAFETY PROGRAM SECTION - To Be Completed By Contractor**

All Written Safety Programs & Training Documentation must be available to OCWD upon request	YES	NO
Does your company maintain a written Injury Illness Prevention Program (IIPP) in accordance with GISO, Title 8, Section §3203 and §1509 and Labor Code (LC §6401.7)?	<input type="checkbox"/>	<input type="checkbox"/>
Does your company provide toolbox training and maintain documentation for IIPP employee training [§3203 and §1509(b)]?	<input type="checkbox"/>	<input type="checkbox"/>
Does your company maintain and post "Code of Safe Practices" documentation [Title 8, §1509(b)] ?	<input type="checkbox"/>	<input type="checkbox"/>
Does your company maintain disciplinary documentation for unsafe behavior of employees or subcontractors (if applicable) [Title 8, §3203 and §1509] ?	<input type="checkbox"/>	<input type="checkbox"/>
Does your company maintain inspection records and written evidence that safety and health concerns have been reviewed and corrective actions taken [§3203, LC§6401.7(b) and (D)]?	<input type="checkbox"/>	<input type="checkbox"/>
Does your company maintain a documented Hazard Communication Program that complies with GHS Labeling and Safety Data Sheets (SDS) [8 CCR §5194]?	<input type="checkbox"/>	<input type="checkbox"/>
Are procedures in place for communicating critical high-risk job activities, including a written safety plan or Job Safety Analysis (JSA), to ensure they are reviewed with all employees and subcontractors [LC 6401.7(a)(5)]?	<input type="checkbox"/>	<input type="checkbox"/>
Does your company have a written accident investigation program that ensures all accidents and incidents, including those involving subcontractors, are thoroughly investigated and corrective actions are implemented [§3203(a)(5) and (b) and §1509]?	<input type="checkbox"/>	<input type="checkbox"/>
Does your company have a written Emergency Action Plan that is effectively communicated to employees and subcontractors, covering emergencies such as medical incidents, fires, and chemical spills [8 CCR §3220]?	<input type="checkbox"/>	<input type="checkbox"/>
Are the aforementioned written programs, including training documentation and records of safety meetings, properly maintained on file and available upon request [LC §6401.7, §336.10, and 8CCR §1509(e)]?	<input type="checkbox"/>	<input type="checkbox"/>
If yes, where are the documentations maintained? _____		

**APPENDIX B: CONTINUED**

<p><b>Part 2 – PROJECT SPECIFIC SAFETY PROGRAM SECTION - To Be Completed By Contractor</b>                  (Please review each section below, check all that apply to the project, and provide the corresponding documentation details.)</p>
<p><input type="checkbox"/> Our company has a written Confined Space Program that includes pre-entry monitoring, pre-entry permit, and employee training [T8 CCR §5157]                  Where is the documentation maintained? _____</p>
<p><input type="checkbox"/> Our company has a written Electrical Safety Program that complies with the required regulations that includes employee training [T8 CCR §2700 - §2989 and T8 CCR §2299 - §2599 and NFPA 70E]                  Where is the documentation maintained? _____</p>
<p><input type="checkbox"/> Our company has a written Fall Prevention Program that includes Personal Fall Arrest Systems, Personal Fall Restraint Systems, Positioning Devices and employee training [T8 CCR §1670]                  Where is the documentation maintained? _____</p>
<p><input type="checkbox"/> Our company has a written Trenching &amp; Excavation Program that includes employee training [T8 CCR §1541.1]                  Where is the documentation maintained? _____</p>
<p><input type="checkbox"/> Our company has a written Lockout/Tagout Program that includes employee training [T8 CCR §3314(j)]                  Where is the documentation maintained? _____</p>
<p><input type="checkbox"/> Our company has a Hot Work Program that includes employee training [T8 CCR §4848]                  Where is the documentation maintained? _____</p>
<p><input type="checkbox"/> Our company has a Traffic Control Program that includes employee training [T8 CCR, Construction Safety Orders, Article 11, 1597 - 1599]                  Where is the documentation maintained? _____</p>
<p><input type="checkbox"/> Our company has a documented Heat Illness Prevention Program for Outdoor Worksites, which includes comprehensive employee training. All contractors are expected to protect the workers by implanting measures to prevent heat illness <b>AND</b> to adjust their work practices to mitigate fire risks. During a “Red Flag Warning,” extra precautions must be taken to prevent potential fire hazards [T8 CCR §3395]                  Where is the documentation maintained? _____</p>
<p>Other applicable programs (please list): _____</p>

*Contractors shall ensure that all employees under their supervision, including subcontractors, receive comprehensive training in the safe work practices required to perform their jobs safely. Additionally, contractors are responsible for effectively communicating the Job Safety Plan to all employees and subcontractors, ensuring full understanding and compliance with safety protocols.*

COMMENTS: \_\_\_\_\_

\_\_\_\_\_  
**Name of Contractor Representative** (please print)

\_\_\_\_\_  
**Contractor Representative’s Signature** **Date Signed:**  
*A bidder’s failure to respond affirmatively to the questions listed in the “Part 2 - Safety Program Section” of Appendix B including the sections applicable to the work shall be grounds for the District to reject the bid as non-responsive.*

**APPENDIX B: CONTINUED**

**CONTRACTOR’S ENVIRONMENTAL HEALTH & SAFETY (EHS) AGREEMENT**

I have read the information stated in the OCWD’s *Contractor Environmental Health & Safety (EHS) Handbook*. I understand that the information provided covers brief highlights of the OCWD’s safety programs. It is my responsibility to review the updated programs and communicate the safety information & requirements to my employees.

I understand that the Contractor’s Environmental Health & Safety Handbook is not intended to replace Federal, State or Local regulations regarding Contractor performance. Contractor shall keep itself fully informed of all existing and future state and federal laws and all county and city ordinances and regulations which in any manner affect the activities of Contractor and of all such orders and decrees of bodies or tribunals having any jurisdiction or authority over the same. Contractor (including contractor employees and subcontractors) shall at all times observe and comply with all such existing and future laws, ordinances, regulations, orders, and decrees, and shall protect and indemnify OCWD, its officers, directors, employees and agents against any claim or liability arising from or based on the violation of any such law, ordinance, regulation, order or decree.

Contractor Company \_\_\_\_\_

Contractor Name & Title  
(Please Print): \_\_\_\_\_

Contractor Signature: \_\_\_\_\_

Date: \_\_\_\_\_



OCWD RFP-25-006 - Injection Well Redevelopment

# **EXHIBIT E**

## **SAMPLE WORK ORDER AUTHORIZATION**



# WORK ORDER AUTHORIZATION

**DATE:** \*\*\*\*

**TO:** \*\*\*\*

Attention:  
Address:

**FROM:** Orange County Water District

**WORK DESCRIPTION:** Work Order No. \*\*\* to Agreement No. \*\*\*\*

- Example

**COST ESTIMATE:** Per Letter dated \*\*\*\* attached hereto.

- Work Order has a value not to exceed \$\*\*\*\*.

**DATE REQUIRED:**

- As scheduled by OCWD Project Manager.

**ORANGE COUNTY WATER DISTRICT**

**Requested by:**

\_\_\_\_\_  
Name

\_\_\_\_\_  
Date

**APPROVED:**

\_\_\_\_\_  
Name

\_\_\_\_\_  
Date

\_\_\_\_\_  
John C. Kennedy

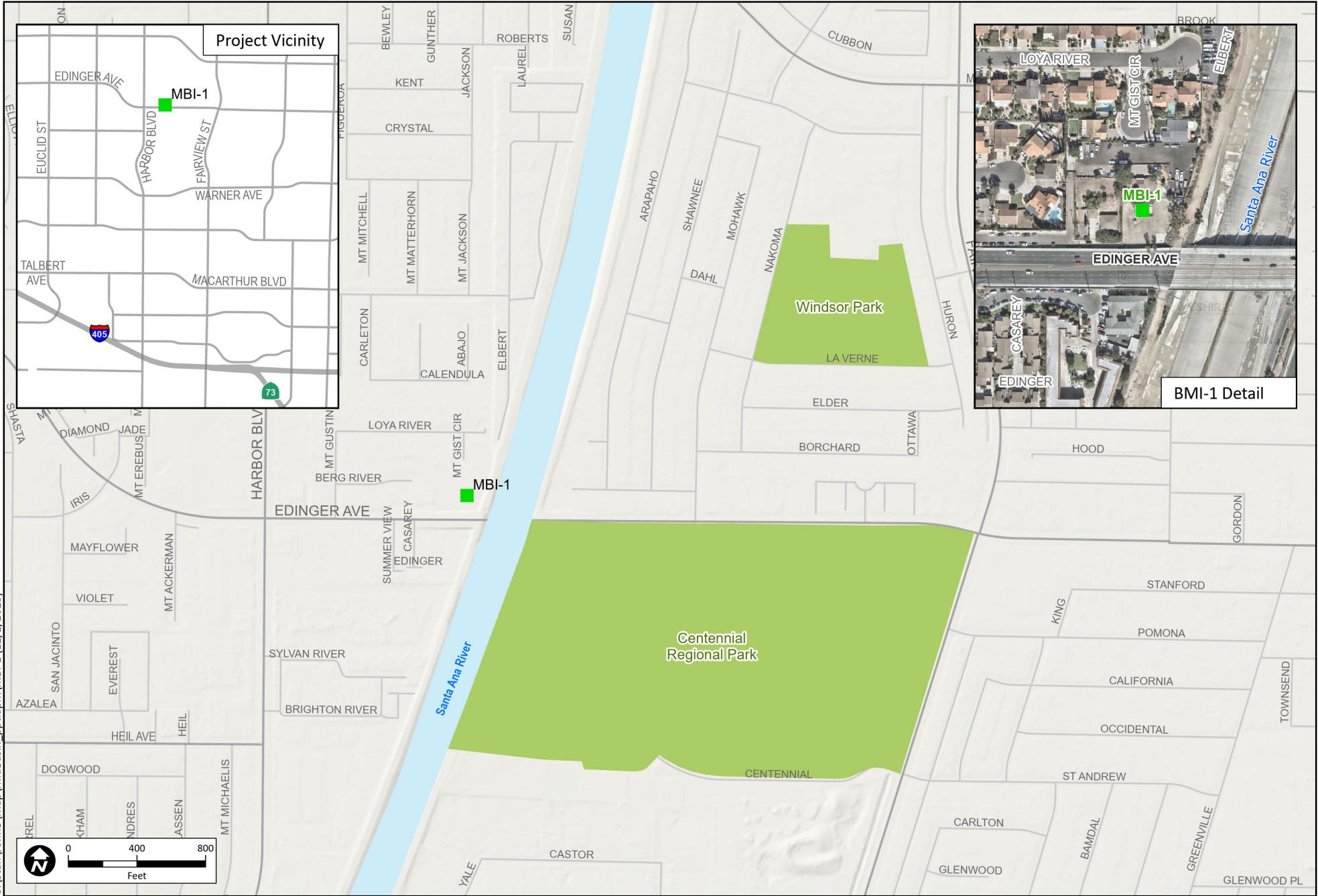
\_\_\_\_\_  
Date

ACCOUNT NO. \_\_\_\_\_

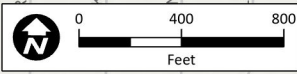


# **EXHIBIT F**

## **LOCATION MAP FOR MANDATORY PRE-PROPOSAL MEETING**



G:\Staff\JohnB\Map\MidBasin\_ppt.aprx\MBI-1 (12/1/2025)



■ Injection Well

**MBI-1  
Injection Well Location**

Location Description: Approximately 300ft. west of centerline of Santa Ana River Channel and 160ft. north of centerline of Edinger Avenue.





OCWD RFP-25-006 - Injection Well Redevelopment

# ATTACHMENT NO.1

# RFP SUBMITTAL CHECKLIST

# ATTACHMENT NO.1

## Request for Proposals (RFP) Submittal Checklist

The following submittals shall be completed and submitted with each Proposal package (see table below for the “Required Submittal Checklist.”). This table has been provided as a convenience for proposers to use as a reference only. Ultimately, it is the Proposer’s sole responsibility to ensure that their proposal complies with all requirements of the RFP and all the required submittals are included in the Proposal package before it is formally submitted to OCWD. Proposals may be deemed nonresponsive if they do not respond to all areas specified in the RFP.

Item No.	Required Submittal Checklist	Check (✓)
1	Signed Proposal package including:	
2	Title Page	
3	Cover Letter	
4	Table of Contents	
5	Experience and Record of Past Experience	
6	Project Team and Qualifications	
7	Project Overview and Approach	
8	Additional Services	
9	Price Proposal	
10	Contractor Safety Program listed in Section 6.7.1 <ul style="list-style-type: none"> <li>• Exhibit D-1 Contractor Environmental Health and Safety Agreement form</li> <li>• Exhibit D-2 Appendix B: Contractor Required Information Form</li> </ul>	
11	Statement of Insurance Compliance A statement accepting the requirements stated in Section 6.9 of the RFP.	
12	OCWD Standard Contract: <ul style="list-style-type: none"> <li>• A statement accepting the requirements stated in Section 6.10 of the RFP.</li> </ul>	
13	Billing <ul style="list-style-type: none"> <li>• A statement accepting the requirements stated in Section 6 of the RFP.</li> </ul>	
14	Conflict of Interest	
15	Equal Employment Opportunity and Affirmative Action Requirements	
16	Addenda Acknowledgement Forms (if applicable)	