

City of San Diego

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REQUEST FOR PROPOSAL (RFP)

FOR

SODIUM HYPOCHLORITE AT OTAY WATER TREATMENT PLANT DESIGN-BUILD CONTRACT

RFQ NO.: As-Needed Design-Build Service for the Engineering & Capital Projects Department – 5151DB

RFP NO.: _____ K-14-1195-DBA-3

TASK ORDER NO.: _____ 11DB07

SAP NO. (WBS/IO/CC): _____ B-13174

CLIENT DEPARTMENT: _____ 2013

COUNCIL DISTRICT: _____ 8

PROJECT TYPE: _____ BI

THIS CONTRACT IS SUBJECT TO THE FOLLOWING:

- PHASED-FUNDING
- THE CITY'S SUBCONTRACTING PARTICIPATION REQUIREMENTS FOR SLBE PROGRAM.
- PREVAILING WAGE RATES: STATE FEDERAL .

PROPOSALS DUE:

12:00 NOON

FEBRUARY 26, 2014

CITY OF SAN DIEGO

PUBLIC WORKS CONTRACTING GROUP

1010 SECOND AVENUE, 14TH FLOOR, MS 614C

SAN DIEGO, CA 92101

ATTN: CONTRACT SPECIALIST

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1. INTRODUCTION

- 1.1. This is the City of San Diego's (City) second step (in a 2-step process) in the selection process to provide Design-Build services for the **Sodium Hypochlorite at Otay Water Treatment Plant Design-Build Contract** (Project).
- 1.2. This RFP is being issued to the selected firms for this selection process exclusively. These firms are:
 1. Ahrens Corporation/Lee & Ro.
 2. Arrieta Construction/Tran Consulting.
 3. Cass Construction/Rick Engineering.
 4. Orion Construction/Harris & Associates.
 5. Ortiz Corporation/RBF.
- 1.2.1. Proposals from any other firms will not be considered for this process and will be rejected as unsolicited Proposals.
- 1.3. This RFP describes the Project, the required Scope of Work and Services, the Design-Builder selection process, and the minimum information that shall be included in the Proposal for this Project, and, the terms and conditions governing the Work. Failure to submit information in accordance with this RFP's requirements and procedures may be cause for disqualification.
- 1.4. Each Proposal properly executed as required by this RFP shall constitute a firm offer, which may be accepted by the City within the time specified in the Proposal.
- 1.5. This RFP will not commit the City 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 the Work.
- 1.6. Upon receipt by the City, Proposals shall become public records subject to public disclosure. It is the responsibility of the respondent to clearly identify any confidential, proprietary, trade secret or otherwise legally privileged information contained within the Proposal. General references to sections of the California Public Records Act (PRA) will not suffice. If the Contractor does not provide supply applicable case law that clearly establishes that the requested information is exempt from the disclosure requirements of the PRA, the City shall be free to release the information when required in accordance with the PRA, pursuant to any other applicable law, or by order of any court or government agency, and the Contractor will hold the City harmless for release of this information.
- 1.7. Selection announcements, contract awards, and all data provided by the City shall be protected by the Design-Builder from public disclosure. The Design-Builders desiring to release information to the public, shall receive prior written approval from the City.
- 1.8. The Design-Builder, by submitting a response to this RFP, agrees to provide the required services for the terms and conditions noted in this RFP and its exhibits, if awarded by the City. The agreement and other terms and conditions are included in

- 1.8. The Design-Builder, by submitting a response to this RFP, agrees to provide the required services for the terms and conditions noted in this RFP and its exhibits, if awarded by the City. The agreement and other terms and conditions are included in the Design-Build Contract and The GREENBOOK, The WHITEBOOK, and the Supplementary Special Provisions (SSP).
- 1.9. Any architectural firms, engineering firms, specialty consultants, or individuals retained by the City to assist in drafting the RFPs or the Project’s preliminary design shall not be eligible to participate in the competition with any Design-Build Entity without the prior written consent of City. Any architectural firms, engineering firms, specialty consultants, or individuals retained by the City to assist in drafting any Reference Documents, such as the Water Department’s Master Plan and any other document that was not prepared specifically for this contract, are considered to be eligible to participate.

2. EQUAL OPPORTUNITY CONTRACTING PROGRAM

- 2.1. All information provided and requirements set forth in Section 2 of the Request for Qualifications (RFQ) for the Project shall apply to this RFP process. The Design-Builder shall review the information, data, and documentation provided in the Design-Builder’s Statement of Qualification (SOQ) and changes shall be identified in the Proposal; otherwise the information, as previously submitted, will be deemed complete and accurate.
- 2.2. As set forth in this RFP, the City is dedicated to the principles of equal opportunity in the workplace and in subcontracting. It is the City’s expectation that firms doing business with the City have, and are able to demonstrate, the same level of commitment.
- 2.3. The Design-Builders are encouraged to take positive steps to diversify and expand their subcontractor solicitation base and to offer contracting opportunities to all eligible certified Subcontractors in accordance with the City’s EOCP requirements included in the Contract Documents.
- 2.4. Subcontractor Participation:
 - 2.4.1. The City has incorporated mandatory SLBE-ELBE subcontractor participation percentages to enhance competition and maximize subcontracting opportunities. For the purpose of achieving the mandatory subcontractor participation percentages, a recommended breakdown of the SLBE and ELBE subcontractor participation percentages based upon certified SLBE and ELBE firms has also been provided to achieve the mandatory subcontractor participation percentages:

1.	SLBE participation	10.7%
2.	ELBE participation	23.6%
3.	Total mandatory participation	34.3%
 - 2.4.2. The Design-Builder’s are **required** to attend the Pre-Proposal Meeting to better understand the Good Faith Effort requirements of this contract. See the City’s document titled “SLBE Program, Instructions For Bidders Completing The Good Faith Effort Submittal” available at: <http://www.sandiego.gov/eoc/>

2.4.3. The Proposal will be declared non-responsive if the Proposer fails the following mandatory conditions:

1. Proposer's inclusion of SLBE-ELBE certified subcontractors at the overall mandatory participation percentage identified in this document; OR
2. Proposer's submission of Good Faith Effort documentation demonstrating the Proposer made a good faith effort to outreach to and include SLBE-ELBE Subcontractors required in this document within **3 Working Days** of the proposal due date if the overall mandatory participation percentage is not met.

2.5. For additional Equal Opportunity Contracting Program requirements (see ATTACHMENT C)

3. **PROJECT VALUE**

3.1. The City's estimate of the Contract Price including stipulated Bid items is **\$1,926,000.**

4. **CONTRACT TIME**

4.1. The Project shall be completed within **315 Working Days** from the NTP.

5. **CONTRACTOR'S LICENSE CLASSIFICATION AND PRE-QUALIFICATION STATUS**

5.1. The Design-Builder shall ensure that Design-Builder's license(s) as specified in the RFQ shall be valid when Proposal is submitted. In addition, the Design-Builder shall maintain its prequalification status at the time of the Proposal submittal as specified in the RFQ. Failure to comply with these requirements will result in rejection of the Proposal.

5.2. The Design-Builder shall ensure that Design-Builder's license(s) shall be valid when Proposal is submitted. Failure to comply with this requirement will result in:

5.2.1. The rejection of the Proposal.

5.2.2. Removal of the Design-Builder from the short-list.

6. **SELECTION AND AWARD SCHEDULE**

6.1. The City anticipates that the process for selecting a Design-Builder, and awarding the contract, will be according to the following tentative schedule:

6.1.1. Mandatory Pre-Proposal Meeting **JANUARY 28, 2014**

6.1.2. Proposal Due Date **FEBRUARY 26, 2014**

6.1.3. **RESERVED**

6.1.4. Selection and Notification **MARCH 25, 2014**

6.1.5. Limited Notice to Proceed **JUNE 11, 2014**

7. **PROJECT DESCRIPTION, SCOPE OF WORK, TECHNICAL SPECIFICATIONS, AND BRIDGING DOCUMENTS**

See Attachment A.

8. **PRE-PROPOSAL ACTIVITIES**

8.1. Submission of Questions

8.1.1. The Director or designee of the Public Works Department is the officer responsible for responding to questions and opening, examining, and evaluating the competitive Proposals submitted to the City for the acquisition, construction, and completion of any public improvement except when otherwise set forth in these documents.

8.1.2. All questions regarding the RFP shall be presented in writing to the Contract Specialist at the US Postal Service or the e-mail address identified on the cover sheet of the RFP prior to the Proposal due date.

8.1.3. Questions received less than 14 Days prior to the Proposal due date may not be considered.

8.1.4. Interpretations or clarifications of this RFP considered necessary by the City in response to such questions will be issued by Addenda.

8.1.5. The City at its option, may respond to any or all questions submitted in the form of an Addendum. Only questions answered by formal written Addendum will be binding. Oral and other interpretations or clarifications will be without legal effect.

8.1.6. The changes to the RFP through Addendum are made effective as though originally issued with the RFP. It is the Design-Builder's responsibility to become informed of any Addenda that have been issued and to include all such information in its Proposal.

8.2. Pre-Proposal Meeting

8.2.1. A Pre-Proposal meeting will be held on **JANUARY 28, 2014** from 10:00 AM to 11:00 AM, at 1010 Second Avenue, 14th Floor, San Diego, CA, 92101.

8.2.2. All Design-Builders are **encouraged** to attend. Any materials distributed at the meeting will be issued to all RFP recipients in the form of an addendum to the RFP. It is not necessary for all members of a the Design-Builder's team to be present at the Pre-Proposal Meeting, however, the Design-Builder will be responsible for receiving and applying all information discussed at the Pre- Proposal Meeting.

8.2.3. To request a copy of the agenda on an alternative format, or to request a sign language or oral interpreter for this meeting, call the Public Works Contracting Group at (619) 533-3450 at least 7days prior to the Pre-Proposal Conference to ensure availability.

- 8.2.4. Proposals shall be considered **non-responsive** if the Design-Builder fails to attend the Pre-Proposal Meeting as evidenced by the City's meeting sign-in sheet when such a meeting has been specified to be required.
- 8.2.5. Firms participating in the Pre-Proposal Meeting and site visit (if any) will not be compensated for their participation.

8.3. Pre-Proposal Site Visit.

- 8.3.1. The prospective Design-Builders are **encouraged** to visit the Work Site with the Engineer. The purpose of the Site Visit is to acquaint Design-Builders with the Site conditions. A Pre-Proposal Site Visit is scheduled as follows:

Time: 1:00 PM
Date: JANUARY 28, 2014
Location: 1500 Wueste Road, Chula Vista, CA 91915

- 8.3.2. To request a sign language or oral interpreter for this visit, call the Public Works Contracting Group at (619) 533-3450 at least 5 Working Days prior to the meeting to ensure availability.

8.4. Revision to the RFP

The City reserves the right to revise the RFP prior to the date that Proposals are due. Revisions to the RFP will be mailed to all RFP holders. The City reserves the right to extend the date by which the Proposals are due.

9. EXAMINATION OF PLANS, SPECIFICATIONS, AND SITE OF WORK

- 9.1. Contract Documents may be obtained by visiting the City's website: <http://www.sandiego.gov/cip/> Plans and Specifications for this contract are also available for review in the office of the Public Works Contracting Group.
- 9.2. The Design-Builders shall examine carefully the Project Site, the Plans and Specifications, and other materials as described in or referenced by this RFP. The submission of a Proposal shall be conclusive evidence that the Design-Builder has investigated and is satisfied as to the conditions to be encountered, as to the character, quality, and scope of Work, the quantities of materials to be furnished, local conditions, and as to the requirements of the Contract Documents.

10. CHANGES TO THE SCOPE OF WORK

- 10.1. The Design-Builder shall immediately notify the City in writing of any proposed or anticipated change in the Scope, Contract Amount, or Contract Time, and shall obtain City's written consent to the change prior to making any changes. In no event shall City's consent be construed to relieve the Design-Builder from its duty to render all Work and Services in accordance with applicable laws and accepted industry standards.

11. DESIGN SUBMITTALS

11.1. The City’s review of The Design-Builder’s Design Submittals shall not relieve the Design-Builder from its responsibilities under the Contract, or be deemed to be an acceptance or waiver by City of any deviation from, or of the Design-Builder’s failure to comply with, any provision or requirement of the Contract Documents, unless such deviation or failure has been identified as such in writing in the document submitted for acceptance by The Design-Builder and accepted by City. Where approval or acceptance by City is required, it is understood to be general approval only, and does not relieve the Design-Builder of responsibility for complying with all applicable laws and good professional practices as the Design-Builder shall be the Engineer of Record.

12. BONDS AND INSURANCE

12.1. Prior to the award of the Contract (or Task Order), the Design-Builders shall submit evidence of separate bonds and insurance as specified in Sections 2-4, “CONTRACT BONDS,” 7-3, “LIABILITY INSURANCE,” and 7-4, “WORKERS’ COMPENSATION INSURANCE” of the City’s standard specifications for public works constructions unless specified otherwise in the Contract Documents.

13. SUBMITTAL REQUIREMENTS

13.1. Each Design-Builder shall submit separate “Technical” and “Price” Proposals as described in this RFP.

13.2. Technical Proposal Requirements

13.2.1. Failure to comply with this section will render the Design-Builder’s submittal invalid and disqualify it from this selection process.

13.2.2. The Technical Proposal shall be concise, well organized, and demonstrate the Design-Builder's qualifications and experience applicable to the Project. The Technical Proposal shall be limited to 100 one-sided pages (8½" x 11"), exclusive of resumes, graphics, forms, pictures, photographs, dividers, front and back cover, etc., that address the Technical Proposal contents; and of Equal Opportunity Contracting documentation. Font Type shall be Times New Roman in a minimum 12 Point font size, with a minimum 1” margin for text pages. A cover letter may be submitted but shall not contain any information that is a required element of the Technical Proposal. Any Technical Proposal that does not comply with these formatting standards may not be considered.

13.2.3. The Design-Builder shall certify that the documentation required under the Work Force Report and Equal Employment Opportunity (EEO) Plan and the Subcontractor Documentation of the RFQ remains correct and accurate. If any changes or modifications are required to the aforementioned documents, they shall be documented in the Work Force Report and EEO Plan and submitted with the Proposal.

- 13.2.4. The EOCP information not revealing the Contract Price shall be submitted with the Technical Proposal.
- 13.2.5. The Technical Proposals submitted in response to this RFP shall be in accordance with the requirements listed in ATTACHMENT G. The contents of the Proposal shall be organized consistent with ATTACHMENT G.

13.3. Price Proposal Requirements

- 13.3.1. This solicitation is for a Lump Sum contract.
- 13.3.2. One executed original of the Price Proposal, clearly marked as “Original” on the cover shall be submitted in a separate sealed envelope. Refer to ATTACHMENT H of this RFP for the Price Proposal form to be used.
- 13.3.3. The Price Proposal shall be signed by an individual or individuals authorized to execute legal documents on behalf of the Design-Builder.
- 13.3.4. The lowest proposed price is not the determining factor for award of this contract. See ATTACHMENT G for criteria from which the proposals will be evaluated.
- 13.3.5. In case of discrepancies, written numbers will govern over numerical. The summation of all lump sum, unit prices, allowances and any other priced items will govern over the total price in case of discrepancies between the two.
- 13.3.6. Certain EOCP information (i.e., Subcontractors and Suppliers listings) that indicates the dollar value of the portions of the work to be performed by the Subcontractors and Suppliers shall be submitted as part of the Price Proposal.

13.4. Submittal Requirements

13.4.1. General

- 13.4.1.1. A corporation designated as the selected Design-Builder shall furnish evidence of its corporate existence and evidence that the officer signing the Proposal and subsequent bonds for the corporation is duly authorized to do so.
- 13.4.1.2. Price Proposal shall be made only upon the Proposal form attached to and forming a part of the specifications. The signature of each person signing shall be in longhand.
- 13.4.1.3. The Design-Builder shall complete and submit all pages in the "Proposal Documents" Section as their Price Proposal per the schedule given under “Required Documents Schedule.” The Design-Builder is requested to retain for their reference other portions of the Contract Documents that are not required to be submitted with the Proposal. The entire specifications for the proposal package do not need to be submitted with the proposal.

- 13.4.1.4. Proposals and certain other forms and documents shall be enclosed in a sealed envelope and shall bear the title of the work and name of the Design-Builder and the appropriate State Contractors License designation which the Design-Builder holds.
- 13.4.1.5. Proposals may be withdrawn by the Design-Builder prior to, but not after, any of the Proposals received by the City have been opened. The Proposal shall be signed by an individual or individuals authorized to execute legal documents on behalf of the Design-Builder.
- 13.4.1.6. Proposals or modifications received after the hour and date specified on the cover of this RFP may cause the Design-Builder's Proposal to be rejected as non-responsive.
- 13.4.1.7. Failure to comply with the requirements of this RFP may result in disqualification.

13.4.2. Technical Proposal

- 13.4.2.1. The Technical Proposal shall be received no later than the time and date shown on the cover of this RFP.
- 13.4.2.2. The Technical Proposal must contain: one executed original, clearly marked as "Original" on the cover, six (6) paper copies of the Proposal, and one (1) searchable Portable Document Format (PDF) copy of the Proposal stored on Compact Disc (CD) or Digital Video Disc (DVD). The following information will be clearly marked on the outside of each package:

Name of Design-Builder

Project Title

"Technical Proposal" Package Number (for example: "1 of 16")

Marked "**CONFIDENTIAL**" (in red)

- 13.4.2.3. Design elements which deviate from the Scope of Work, City's design guidelines, or material substitutions which differ from the Approved Material List shall be highlighted in accordance with ATTACHMENT G.

13.4.3. Price Proposal

- 13.4.3.1. The Price Proposal shall be submitted separately from the Technical Proposal and shall be received no later than the time and date shown on the cover of this RFP.
- 13.4.3.2. Submittal of the Price Proposal after the date stipulated in this section will be cause for rejection of the entire Proposal and disqualification of the Design-Builder for this selection process.

13.4.3.3. The Price Proposal shall be submitted in sealed packages with the following information clearly marked on the outside of each package:

Name of Design-Builder
Project Title
“Price Proposal” Marked “**CONFIDENTIAL**” (in red)

13.4.4. Review of Technical Proposal

13.4.4.1. Following the receipt of the Technical Proposal, the City anticipates allotting 2 weeks for review of the Technical Proposals.

13.4.4.2. NOT USED

13.4.5. Technical Presentation (NOT USED)

14. SELECTION CRITERIA

14.1. Following review of the Technical Proposals and the oral presentations/interviews (if applicable), the resulting qualitative evaluation scores will be totaled. After which, each Design-Builder’s price envelope will be opened and forwarded to EOCP for review of actual subcontractor participation and scoring. The EOCP score will then be added to the Design-Builder’s cumulative score.

14.2. Final Selection (Adjusted Low Proposal)

14.2.1. The ranking of each Design-Builder during the Technical Proposal review and the interviews will serve as a divisor of the Price Proposal submitted thereby determining weighted price.

14.2.2. Selection will be based on “Adjusted Low Proposal”. Following review of the Technical Proposals and the oral presentations/interviews, the resulting qualitative evaluation scores will be totaled on a scale of 0 to 100 (less possible EOC points), and will be converted to a decimal (e.g., score of 85 is written as 0.85). The price will be divided by the score (expressed as a decimal) to yield the “Adjusted Low Proposal”. The lowest adjusted proposal will be recommended for Contract award. The adjustment to the Price Proposal is for selection purposes only. The Price Proposal as submitted is the actual Contract Price. Design-Builders will be notified in writing of the City’s final decision.

14.2.3. The following example summarizes and illustrates the process:

Design-Builder	Qualitative Score (100 Maximum)	Price Proposal	Adjusted Price *
A	0.85	\$1,000,000.00	\$1,176,471
B	0.95	\$1,300,000.00	\$1,368,421

Design-Builder	Qualitative Score (100 Maximum)	Price Proposal	Adjusted Price *
C	0.65	\$900,000.00	\$1,384,615
* The adjustment to the Proposal is for selection only. Firm "A" has Adjusted Lowest Proposal. The Price Proposal is the actual Contract amount.			

15. OPENING OF PRICE PROPOSALS

- 15.1. After the Technical Proposals have been evaluated and scored, the City will open the Price Proposals and make the selection of the winning Design-Builder in accordance with the criteria set forth in ATTACHMENT G. The City will announce in writing the selected Design-Builder via correspondence to all participants indicating the evaluation results. The notification to the Design-Builders shall constitute the public announcement of the Apparent Winner. In the event that the Apparent Winner is subsequently deemed non-responsive or non-responsible, a new public announcement will be provided to all proposers with the name of the newly designated Apparent Winner.
- 15.2. To obtain opening of price Proposals results, attend the opening of Price Proposals, review the results on the City’s web site, or provide a self-addressed, stamped envelope, referencing Proposal number, and Proposal tabulation will be mailed to you upon verification of extensions. The results given over the telephone shall not be relied upon confirmed in writing.

16. POLICIES, PROCEDURES AND GUIDELINES

- 16.1. The Program's Selection Process is based on the policies, procedures and guidelines contained in the City Municipal Code Chapter 2, Article 2, Division 33.
- 16.2. A Ranking Panel (Panel) will be established for this Project and will include representatives from the City and may include other interested parties (e.g., Participating Agencies, representative from the Community at large, as required and other agencies e.g., the State Water Resource Control Board, etc.).
- 16.3. The Panel will review all proposals received and, when required, interview each Design-Builder in accordance with Section 13.4.5, "Technical Presentation," of this RFP. Based on the Design-Builder's Proposal, interview (if applicable) and the Project’s Evaluation Criteria, the Panel will rank the Design-Builders as to qualifications in a public meeting. The Panel will forward its ranked listing of Design-Builders to the Mayor or designee.
- 16.4. The Mayor or designee will make the final recommendation to City Council concerning the proposed agreement. The City Council has the final authority to approve the Contract.

17. ADDITIONAL TERMS AND CONDITIONS

- 17.1. Protests.** A Design-Builder may protest the award of a Task Order to another Design-Builder in accordance with San Diego Municipal Code section 22.3017.
- 17.2. Changes to Key Personnel and Substitution of Subcontractors.** The Design-Builder shall not change or substitute any individual that is identified as “key personnel” in its Statement of Qualifications (SOQ) and Proposal without the written consent of the City, which will not be unreasonably withheld. The Design-Builder shall not change or substitute any Subcontractor or Supplier identified in its SOQ and Proposal without written consent of the City.
- 17.3. Project Team.** The Design-Builder shall maintain all representations, team members, and proposed tasks and work elements as valid, except for the schedule which would be adjusted as mutually agreed upon by the City and the Design-Builder.
- 17.4. Submittal of “Or Equal” Items.** See 4-1.6, “Trade Names or Equals” in the SSP and as modified by the Scope of Work ATTACHMENT A.
- 17.5. Subcontract Limitations.** The Design-Builders shall perform not less than 30% of all work contemplated under this RFP. Failure to comply may render the Proposal **non-responsive**.
- 17.6. San Diego Business Tax Certificate.** All Contractors, including Subcontractors, not already having a City of San Diego Business Tax Certificate for the work contemplated shall secure the appropriate certificate from the City Treasurer, Civic Center Plaza, first floor, before the Contract can be executed.
- 17.7. City Standard Provisions.** The work resulting from this RFP is subject to the following standard provisions. See The WHITEBOOK for details.
- 17.7.1.** The City of San Diego Resolution No. R-277952 adopted on May 20, 1991 for a Drug-Free Workplace.
- 17.7.2.** The City of San Diego Resolution No. R-282153 adopted on June 14, 1993 related to the Americans with Disabilities Act.
- 17.7.3.** The City of San Diego Municipal Code §22.3004 for Pledge of Compliance.
- 17.7.4.** The City of San Diego’s Labor Compliance Program and the State of California Labor Code §§1771.5(b) and 1776.
- 17.7.5.** Sections 1777.5, 1777.6, and 1777.7 of the State of California Labor Code concerning the employment of apprentices by contractors and subcontractors performing public works contracts.
- 17.7.6.** The City’s Equal Benefits Ordinance (EBO), Chapter 2, Article 2, Division 43 of The San Diego Municipal Code (SDMC).
- 17.7.7.** The City’s Information Security Policy (ISP) as defined in the City’s Administrative Regulation 90.63.

17.8. Payroll Records.

17.8.1. The Design-Builder's attention is directed to the City of San Diego Labor Compliance Program, Section IV, pages 4-7, and the State of California Labor Code §§1771.5(b) and 1776. These require, in part, that the Design-Builder and Subcontractors maintain and furnish to the City, at a designated time, a certified copy of each weekly payroll containing a statement of compliance signed under penalty of perjury.

17.8.2. The Design-Builder and Subcontractors shall submit weekly certified payrolls online via Prism® i.e., the City's web-based labor compliance program. The Design-Builder shall be responsible for the compliance with these provisions by the Subcontractors. The City will withhold contract payments when payroll records are delinquent or inadequate, or when it is established after investigation that underpayment has occurred.

17.9. Prevailing Wage Rates: Prevailing wage rates apply to this contract.

17.9.1. State Prevailing Wage Requirements.

17.9.1.1. In accordance with the provisions of California Labor Code Sections 1770, et seq. as amended, the Director of the Department of Industrial Relations has determined the general prevailing rate of per diem wages in accordance with the standards set forth in such Sections for the locality in which the Work is to be performed. Copies of the prevailing rate of per diem wages may be found at http://www.dir.ca.gov/dlsr/statistics_research.html. The Contractor shall post a copy of the above determination of the prevailing rate of per diem wages at each job site and shall make them available to any interested party on request.

17.9.1.2. Pursuant to Sections 1720 et seq., and 1770 et seq., of the California Labor Code the Contractor any Subcontractor shall pay not less than said specified rates determined by the Director of the California Department of Industrial Relations to all workmen employed by them in the execution of the Work.

17.9.1.3. The wage rates determined by the Director of Industrial Relations and published in the Department of Transportation publication entitled, "General Prevailing Wage Rates", refer to expiration dates. If the published wage rate does not refer to a predetermined wage rate to be paid after the expiration date, said published rate of wage shall be in effect for the life of this contract. If the published wage rate refers to a predetermined wage rate to become effective upon expiration of the published wage rate and the predetermined wage rate is on file with the Department of Industrial Relations, such predetermined wage rate shall become effective on the date following the expiration date and shall apply to this contract in the same manner as if it had been published in said publication. If the predetermined wage rate refers to one or more additional expiration dates with

additional predetermined wage rates, which expiration dates occur during the life of this contract, each successive predetermined wage rate shall apply to this contract on the date following the expiration date of the previous wage rate. If the last of such predetermined wage rates expires during the life of this contract, such wage rate shall apply to the balance of the contract.

17.9.1.4. The successful bidder intending to use a craft or classification not shown on the prevailing rate determinations may be required to pay the rate of the craft or classification most closely related to it.

17.10. Working Hours.

17.10.1. The Design-Builder shall comply with all applicable provisions of section 1810 to 1815, inclusive, of the California Labor Code relating to working hours.

17.10.2. The Design-Builder shall forfeit \$25.00 to the City for each worker employed in the execution of the Contract by the Design-Builder or by any Subcontractor for each calendar day during which such worker is required or permitted to work more than 8 hours in any one calendar day and 40 hours in any one calendar week, unless such worker receives compensation for all hours worked in excess of 8 hours at not less than 1.5 times the basic rate of pay.

17.11. Reference Standards:

17.11.1. Except as otherwise noted or specified, the Work shall be completed in accordance with the following standards:

Title	Edition	Document Number
Standard Specifications for Public Works Construction (“The GREENBOOK”)	2012	PITS070112-01
City of San Diego Standard Specifications for Public Works Construction (“The WHITEBOOK”)*	2012	PITS070112-02
City of San Diego Standard Drawings*	2012	PITS070112-03
Caltrans Standard Specifications	2010	PITS070112-04
Caltrans Standard Plans	2010	PITS070112-05
California MUTCD	2012	PITS070112-06
City Standard Drawings - Updates Approved For Use (when specified)*	Varies	Varies
Standard Federal Equal Employment Opportunity Construction Contract Specifications and the Equal Opportunity Clause Dated 09-11-84	1984	769023

NOTE: *Available online under Engineering Documents and References at: <http://www.sandiego.gov/publicworks/edocref/index.shtml>

18. PHASE FUNDING

See Attachment B.

19. REQUIRED DOCUMENT SCHEDULE AND FORMS

19.1. REQUIRED DOCUMENT SCHEDULE - The following forms must all be completed and submitted to the City in connection with this Request for Proposal (see Required Document Schedule)

19.1.1. The Design-Builder’s or Design-Builder’s attention is directed to the City’s Municipal Code §22.0807(e), (3)-(5) for important information regarding grounds for debarment for failure to submit required documentation.

19.1.2. The specified Equal Opportunity Contracting Program (EOCP) forms are available for download from the City’s web site at:

<http://www.sandiego.gov/eoc/forms/index.shtml>

REQUIRED DOCUMENT SCHEDULE					
ITEM	WHEN DUE	FROM	DOCUMENT TO BE SUBMITTED	DOCUMENT DUE (AS CHECKED) WITH:	
				TECHNICAL PROPOSAL	PRICE PROPOSAL
1.	PROPOSAL SUBMITTAL DATE/TIME	ALL BIDDERS	Price Proposal Form		√
2.	PROPOSAL SUBMITTAL DATE/TIME	ALL BIDDERS	Non-collusion Affidavit to be Executed By Design-Builder and Submitted with Proposal under 23 USC 112 and PCC 7106		√
3.	PROPOSAL SUBMITTAL DATE/TIME	ALL BIDDERS	Contractors Certification of Pending Actions		√
4.	PROPOSAL SUBMITTAL DATE/TIME	ALL BIDDERS	Equal Benefits Ordinance Certification of Compliance		√
5.	PROPOSAL SUBMITTAL DATE/TIME	ALL BIDDERS	Form AA05 – Design-Build List of Subcontractors		√
6.	PROPOSAL SUBMITTAL DATE/TIME	ALL BIDDERS	Form AA15 - Design-Build List of Subcontractors	√	
7.	PROPOSAL SUBMITTAL DATE/TIME	ALL BIDDERS	Form AA25 - Design-Build Named Equipment/Material Supplier List		√

REQUIRED DOCUMENT SCHEDULE					
ITEM	WHEN DUE	FROM	DOCUMENT TO BE SUBMITTED	DOCUMENT DUE (AS CHECKED) WITH:	
				TECHNICAL PROPOSAL	PRICE PROPOSAL
8.	PROPOSAL SUBMITTAL DATE/TIME	ALL BIDDERS	Form AA30 - Design-Build Named Equipment/Material Supplier List	√	
9.	WITHIN 3 WORKING DAYS OF PROPOSAL DUE DATE WITH GOOD FAITH EFFORT DOCUMENTATION	ALL BIDDERS	Proof of Valid DBE-MBE-WBE-DVBE Certification Status e.g., Certs.		
10.	WITHIN 3 WORKING DAYS OF PROPOSAL DUE DATE WITH GOOD FAITH EFFORT DOCUMENTATION	ALL BIDDERS	Form AA60 – List of Work Made Available		
11.	WITHIN 3 WORKING DAYS OF PROPOSAL DUE DATE WITH GOOD FAITH EFFORT DOCUMENTATION	ALL BIDDERS	SLBE-ELBE Good Faith Documentations		
12.	WITHIN 10 WORKING DAYS AFTER RECEIPT BY PROPOSER OF CONTRACT FORMS	APPARENT LOW PROPOSER	Names of the principal individual owners of the Apparent Low Design-Builder -		
13.	WITHIN 10 WORKING DAYS AFTER RECEIPT BY PROPOSER OF CONTRACT FORMS	APPARENT LOW PROPOSER	If the Contractor is a Joint Venture, the following information must be submitted: <ul style="list-style-type: none"> • Joint Venture Agreement • Joint Venture License 		
14.	WITHIN 10 WORKING DAYS AFTER RECEIPT BY PROPOSER OF CONTRACT FORMS	APPARENT LOW PROPOSER	Contract Forms - Agreement		
15.	WITHIN 10 WORKING DAYS AFTER RECEIPT BY PROPOSER OF CONTRACT FORMS	APPARENT LOW PROPOSER	Contract Forms – Performance Bonds and Labor and Materialmen’s Bond		

REQUIRED DOCUMENT SCHEDULE					
ITEM	WHEN DUE	FROM	DOCUMENT TO BE SUBMITTED	DOCUMENT DUE (AS CHECKED) WITH:	
				TECHNICAL PROPOSAL	PRICE PROPOSAL
16.	WITHIN 10 WORKING DAYS AFTER RECEIPT BY PROPOSER OF CONTRACT FORMS	APPARENT LOW PROPOSER	Certificates of Insurance and Endorsements		
17.	WITHIN 10 WORKING DAYS AFTER RECEIPT BY PROPOSER OF CONTRACT FORMS	APPARENT LOW PROPOSER	Contractor Certification - Drug-Free Workplace		
18.	WITHIN 10 WORKING DAYS AFTER RECEIPT BY PROPOSER OF CONTRACT FORMS	APPARENT LOW PROPOSER	Contractor Certification - American with Disabilities Act		
19.	WITHIN 10 WORKING DAYS AFTER RECEIPT BY PROPOSER OF CONTRACT FORMS	APPARENT LOW PROPOSER	Contractors Standards - Pledge of Compliance		
20.	WITHIN 10 WORKING DAYS AFTER RECEIPT BY PROPOSER OF CONTRACT FORMS	APPARENT LOW PROPOSER	Phased Funding Schedule Agreement (when required)		
21.	WITHIN 10 WORKING DAYS AFTER RECEIPT BY PROPOSER OF CONTRACT FORMS	APPARENT LOW PROPOSER	Pre-Award Schedule (Phased Funded Contracts Only)		
22.	WITHIN 10 WORKING DAYS AFTER RECEIPT BY PROPOSER OF CONTRACT FORMS	APPARENT LOW PROPOSER	Form BB05 – Work Force Report		

ATTACHMENTS

ATTACHMENT A

PROJECT DESCRIPTION, SCOPE OF WORK, TECHNICAL SPECIFICATIONS, AND BRIDGING DOCUMENTS

PROJECT DESCRIPTION, SCOPE OF WORK, TECHNICAL SPECIFICATIONS, AND BRIDGING DOCUMENTS

PUBLIC UTILITIES DEPARTMENT

1. Project Description:

An on-site Sodium Hypochlorite generation system will be built that will alleviate the safety concerns associated with storing and using Chlorine gas for disinfection at the plant. Otay currently uses a multi segment approach in disinfection of the water treatment process. Hypochlorite will directly replace gas chlorine in the current treatment plan. The existing Chlorine Building was constructed in 1988. It is a 92' by 28' block building designed to house the ton containers of chlorine gas and feed equipment for Otay's ultimate built-out capacity of 60 MGD. Otay's current rated capacity is 34.2 MGD. The Public Utilities Department has no plans or projections to increase the plant's rated capacity within the 20 year life cycle of the proposed hypochlorite generation system. The Chlorine Room was modified to accommodate the installation of the chlorine dioxide system in 2010. The chlorine dioxide system will remain in the existing Chlorine Room as an important element of Otay's disinfection strategy.

2. Scope of Work:

This project will convert the existing chlorine system to on-site generation of Sodium Hypochlorite. The design and construction of on-site Sodium Hypochlorite generation system will include, but not limited to, a new on-site hypochlorite generator; hypochlorite feed pumps; hypochlorite tanks; salt storage tanks; Electrical, Mechanical, Piping improvements, integration of the project into the existing SCADA system as specified in the bridging document, and chlorine scrubber removal. The new on-site hypochlorite generator will be installed in the existing Chlorine Room, as well as the hypochlorite feed pumps. A minimum of 36 hours of hypochlorite storage at the typical flow/typical dose chlorine use rate of 868 lbs/day shall be provided. The tanks will be housed in a secondary open containment area along the south side of the Chlorine Building, which will contain three hypochlorite tanks and one salt storage tank, 10' in diameter and 14' high, capable of handling 120% of the total capacity. The existing system uses gas chlorine and a sodium hypochlorite solution to generate chlorine dioxide. Use of hypochlorite in lieu of chlorine gas requires modification of the existing system. The proposed work is summarized in Attachment A. Attachment A (the Bridging document) shall be included in the design and construction scope of work. The design consultant shall provide engineering support during construction and attend construction meetings.

2.1 The Work and Services required of the Design-Builder include those during design and construction of the Project. The Design-Builder shall provide all management, supervision, labor, services, equipment, tools, supplies, temporary facilities, and any other item of every kind and description required for the complete design and construction of the Project.

2.2 The Design-Builder shall be responsible for performing and completing, and for causing all Sub-consultants/Subcontractors to perform and complete the design and construction of the Project as set forth in the Contract Documents.

- 2.3** The Design-Builder shall provide all Work and Services required by the Contract Documents, including those described as “if required,” “if directed,” “potential,” “optional,” “may,” or similar adjectives and phrases. This work falls under the appropriate proposal items.
- 2.4** The Design-Builder covenants that the Services shall meet the performance expectations of the City as described in this Scope. The Design-Builder shall be responsible for achieving Completion of the Project as set forth in the Project Schedule, as the same may be extended from time to time pursuant to the provisions of the Contract.
- 2.5** The submission of a Proposal shall be conclusive evidence that the Design-Builder has investigated and is satisfied as to the conditions to be encountered, as to the character, quality, and scope of Work, the quantities of materials to be furnished, the local conditions under which the Work is to be performed, and as to the requirements of the Proposal Documents, Plans, and Specifications.
- 2.6** As the Engineer of Work, the Design-Builder shall refer to the City’s preliminary design information for the purpose of preparing a set of Plans and Specifications for the construction.
- 2.7** The Scope of Work and Services [Scope] shall also include but is not limited to the following:
- 2.7.1** Conducting investigations, as-built research, and additional design survey services including physical and aerial surveys if needed for the completion of design work;
 - 2.7.2** Preparing & completing 30%, 100%, and Final design drawings. The Design-Builder is solely responsible for the preparation and completion of design plans for construction;
 - 2.7.3** Obtaining plan check approvals; and providing engineering services during construction, startup, and testing;
 - 2.7.4** Monitoring for potential of any hazardous materials and coordination with local resource agencies;
 - 2.7.5** Performance and implementation of QA/QC,
 - 2.7.6** Coordinating with the City Project and Construction Managers and other utility owners/contractors; and
 - 2.7.7** The Design Builder shall coordinate all design communication through Project Manager
 - 2.7.8** The Design-Builder shall be responsible for locating all As-Builts and utility information

- 2.8 The Design-Builder shall use CADD in compliance with the City’s “Consultant Standards for Preparation of PS&E.”
- 2.9 The Design-Builder shall use the Primavera Project Management and Scheduling Software or equal. The Design-Builder shall submit and maintain a task-oriented computerized schedule for completing the Work over the life of the Project in accordance with Section 6-1, “CONSTRUCTION SCHEDULE AND COMMENCEMENT OF THE WORK.”
- 2.10 As required by California Government Code section 830.6, prior to construction, the design (including changes) for the Project and/or any portion thereof shall be approved by the Engineer.

3. City Services:

- 3.1 The City will provide only the services listed in this section. All other services necessary for complete design and construction of the Project shall be provided by The Design-Builder.
- 3.2 Project Management and Administration. The City will respond to Design- Builder’s written questions regarding Project definition and scope within 15 Working Days of receipt. See The WHITEBOOK, Chapter 3, Part 1, General Provisions (B), subsection 2-6.7.
 - 3.1.1 Submittal Review and Approval. The City will review each submittal within 20 Working Days of receipt. See The WHITEBOOK, Chapter 1, Part 1, General Provisions (A), subsection 2-5.3.1.
 - 3.1.2 Construction inspection, administration, and material testing.
 - 3.1.3 Construction Survey
 - 3.1.4 Plan checking fees.
 - 3.1.5 Permit fees

4. City Provided Information:

- 4.1 The City will provide the following information to Design- Builder. The City does not guarantee the accuracy of this information. The Design-Builder shall conduct further research as necessary to verify the information.
 - 4.1.1. Access to City As-Builts at the City Maps and Records.
 - 4.1.2. Access to As-Builts and data at Otay Water Treatment Plant.
 - 4.1.3. The City’s QA/QC checklists.
 - 4.1.4. Access to as-built drawings and available design survey information where available.

5. Review of the Design-Builder's Design Submittals:

- 5.1.** The Design-Builder shall allocate 20 Working Days for City to review and comment on each submittal and 2 weeks for the Design-Builder to respond and for final Working Days resolution of comments. To log and communicate the review comments, actions, and resolutions efficiently, the City intends to utilize a MS Access database or MS Excel spreadsheet to manage the design submittal comments for 30%, 100%, and Final Designs. The Design-Builder shall review and respond to City's comments in the format provided by City.

6. Photo Log and Videotape:

- 6.1.** The Design-Builder shall comprehensively photograph and videotape the Project Site before, during, and after construction of the Project. Prior to Acceptance, the Design-Builder shall prepare and submit the following items to City:
- 6.1.1** a still-photo log including the photographs taken;
 - 6.1.2** one copy of each of the still-log photos bound in a three-ring binder; and
 - 6.1.3** two copies of the Project CD in a form acceptable to City.
- 6.2** The Design-Builder shall request City's prior written approval for the use of digital photography and submit the relevant specifications for digital submittal with the request.

7. Coordination:

- 7.1.** The Design-Builder shall coordinate design and construction requirements with governmental entities and agencies, private utilities, and all other parties either involved in infrastructure improvements or otherwise affected by the design and construction requirements.

8. Existing Information:

- 8.1.** The City and the Design-Builder recognize that previous studies, designs and reports such as information provided in the Bridging Documents have developed a preliminary definition of the Project. However, these previous efforts have not resulted in a comprehensive and final Project definition. The Design-Builder shall verify all information provided to it by the City pertaining to the Bridging Documents, conceptual plans, Project Site's description, existing utilities, soils, hazardous wastes and geotechnical reports, etc., and shall verify the data and recommendations prior to including them into the Project design. The Design Builder shall perform the engineering tasks necessary to further refine and optimize the Project, utilizing as much previous work as possible, ultimately leading to authorization-to-proceed for Construction with Final Design.

9. Requests for Clarifications or Information:

9.1 The Design-Builder shall submit all RFI's to the Engineer in writing. Oral communications shall not be relied upon unless confirmed in writing. RFI's shall be in a format acceptable to the Engineer, and, at a minimum, shall contain: the Project name and WBS number; the request date; the desired response date; a unique numeric request identifier; a title; a reference to the pertinent part of the Bridging Documents, the Design-Build Special Provisions, or other specific part of the Contract Documents; CPM activity number affected; the written request; the Design-Builder's proposed solution, if appropriate; attachments, if any; and the name, telephone number, e-mail address, and title of the request initiator.

10. Substitutions:

10.1 Prior to receipt of the final design, the City will consider written substitution requests from the Design-Builder for substitution of products or manufacturers, and construction methods (if specified). After the City receives the final design, substitution requests will be considered only in the case of unavailability of a product or other conditions beyond control of the Design-Builder. Design-Builder shall use Material Substitution request form included as part of Bridging Documents.

10.2. The Design-Builder shall have the full burden of demonstrating that the proposed substitution is equal to the specified manufacturer, product, or construction method. By the act of submitting a substitution request, the Design-Builder warrants that:

10.2.1. The Design-Builder has investigated the proposed substitution and has determined that it is equal to or superior in all respects to the specified manufacturer, product, or construction method.

10.2.2. The Design-Builder will provide the same or better guarantees or warranties for the proposed substitution as for the specified manufacturer, product, or construction method.

10.2.3. The Design-Builder waives all claims for additional costs or extensions of time related to the proposed substitution that subsequently may become apparent.

10.3 The City will not accept a proposed substitution if any one of the following applies:

10.3.1 Acceptance will require changes in the design concept or a substantial revision of the Contract Documents.

10.3.2 Acceptance will delay completion of the Design-Builder's Work or Services or the work or services of other City contractors.

10.3.3 The Design-Builder does not specifically identify a substitution that appears on a Shop Drawing and/or does not submit a formal substitution request.

10.4 The City will determine in its sole discretion whether the proposed substitute is equal to the specified manufacturer, product, or construction method. If the City determines

that a proposed substitute is not equal to that specified, the Design- Builder shall provide the specified manufacturer, product, or construction method at no additional cost to the City or delay to the Project.

10.5 The City will consider only one substitution request for each product.

10.6 The Design-Builder shall submit a separate approved Shop Drawing for any proposed substitution that is accepted by the City. The City's acceptance of a substitution does not relieve the Design-Builder from the requirements for submission of Shop Drawings.

11. Design Criteria and Procedure for Review of Design Materials:

11.1 *General* - The design criteria presented herein shall apply to the design and new construction of sewer & water main replacement, site preparation, and restoration as outlined in the Bridging Documents. The Project shall be designed and constructed to provide a minimum service life of 50 years. Construction of the Project shall cause minimum interruptions in existing sewer & water services. Changes to the Pre-design Report recommendations shall be made only if approved by the City.

11.2 *Design Responsibilities* – The Design-Builder shall provide all Services for the Project. The Services shall include preparing the 30%, 100% and Final Design plans for the Project [Final Design], including all necessary design and/or Construction Documents. The Services shall also include those required during construction, and Project Completion. The Services shall be performed in accordance with all Applicable Laws and City policies.

11.2.1 The Design-Builder shall provide complete design for all elements of the Project (as applicable) such as: civil, physical and aerial surveys geotechnical, environmental and specialty consulting areas. Design- Builder shall evaluate alternative construction approaches to ensure economical designs which optimize constructability yet meet all requirements of this Contract, including all applicable laws and applicable architectural concepts, and conceptual designs.

11.2.2 The Design-Builder shall incorporate the requirements of permitting agencies as may become apparent in the course of Project design. The Design-Builder shall apply for and secure all permits and provide all necessary reports, studies, and support required to obtain the permits. Permit and utility fees, if any, will be paid by the City. In addition, the Design-Builder shall research and comply with all Air Pollution Control District and noise abatement requirements, along with any hazardous materials management requirements of NFPA, Cal-OSHA and the City Fire Department. The Design-Builder shall develop a noise abatement plan, (WPCP) Water Pollution Control Plan and a hazardous materials management plan, if required. If required, the Design-Builder shall incorporate appropriate facilities into the design.

11.2.3 With prior authorization from the Engineer, the Design-Builder shall provide additional geotechnical investigations and potholing to the extent the Design-Builder determines that they are necessary for Final Design.

12. Surveying:

- 12.1** The Design-Builder understands and agrees that any survey information provided by the City is preliminary in nature and may not have sufficient accuracy or scope to support Final Design.
- 12.2** Construction survey will be performed by the City with prior arrangement. The Design-Builder shall coordinate with the Engineer.

13. As-built information:

- 13.1** The Design-Builder shall obtain and review record drawings and as-built information from available public records, maintenance records, and Average Daily Traffic (ADT) counts, etc. if needed in addition to the information in the Bridging Documents.

14. Environmental and Permit Support:

- 14.1** This Scope is based on studies and reviews performed by City's Development Services Department [DSD] which are included in the Bridging Documents. The Design-Builder shall identify all permits required for the Project as well as all requirements for those permits. All permits shall be acquired by the Design-Builder and the costs thereof paid by City. At the 30%, 100% and Final Design completion levels, the Design-Builder shall submit to City a written list of permits required for the Project. The Design-Builder shall identify all permitting agencies and authorities having jurisdiction. The Design-Builder shall prepare permit applications and submit the applications to the Engineer for review. The Design-Builder shall provide technical services as required by the permitting agencies during permit acquisition. The Design-Builder shall incorporate provisions and DSD review requirements, including the certified CEQA document into the Construction Documents. The Design-Builder shall identify and estimate quantities of BMP's to comply with the City Stormwater requirements.

15. Owner/Governmental Approvals:

- 15.1** The Design-Builder shall obtain all City and other jurisdictional agency approvals as required to implement the design and construction of the Project. The City received an environmental document for the Project. During the Final Design process, if the Design-Builder modifies the Project such that a revision of the environmental document is required, the Design-Builder shall be responsible for all work required for implementing a revision, including preparation of revised documentation and coordination with City staff. The Work shall not proceed on the Project until the environmental requirements are met to the satisfaction of the City. There shall be no additional time allowed in the contract for processing and approval of revised permit documents. The cost associated with implementing both the design and construction changes as a result of the Design-Builder modifications shall be the responsibility of the Design-Builder and will not be compensated by the City.

16. Geotechnical Investigation:

16.1 If necessary the Design-Builder shall review any available geotechnical reports and provide the necessary geotechnical investigations and testing required to design and to construct the Project in accordance with the Contract requirements.

17. Corrosion Survey Report:

17.1 If applicable, the Design-Builder shall investigate the Project Site and provide a current corrosion survey report for the water portion of the Project according to City standards and guidelines (refer to the water CIP Guidelines, Book 1, Chapter 9, Corrosion Control).

18. Review of Contract Documents and Field Conditions:

18.1 The Design-Builder shall conduct field investigations, including potholing of underground facilities, take field measurements, and verify field conditions. The Design-Builder shall carefully compare such field conditions and other information known to the Design-Builder with the Contract Documents before commencing Work and/or Services. The Design-Builder is solely responsible for investigation and discovery of all field conditions notwithstanding any information provided by City in the Contract Documents or otherwise. City has made an effort to eliminate errors, omissions, and inconsistencies in the Contract Documents. The Design-Builder, however, shall bring to City's attention for clarification any errors, omissions, or inconsistencies prior to submission of the Design-Builder's Proposal. Otherwise, the Design-Builder shall take responsibility for any costs or delays associated with such error, omission, or inconsistency.

19. Local Conditions:

19.1 The Design-Builder shall take steps reasonably necessary to ascertain the nature and location of the Work, and investigate and satisfy itself as to the general and local conditions that are applicable to the Work, including but not limited to:

19.1.1 Conditions bearing on transportation, disposal, handling, and storage of materials;

19.1.2 The availability of labor, materials, water, power, and roads;

19.1.3 Weather conditions;

19.1.4 Physical conditions at the Project Site;

19.1.5 The surface conditions of the ground; and

19.1.6 The character of equipment and facilities needed prior to and during the performance of the Work.

20. Access to the Work:

20.1 The Design-Builder shall provide the City and utility owners with access to the Project Site and provide coordination and time for utility work to be accomplished at all times.

21. Supervision:

21.1 The Design-Builder shall supervise and direct the Work in accordance with accepted standards of professional skill and attention. The Design-Builder shall be solely responsible for and have control over design and construction means, methods, techniques, sequences, and procedures. The Design-Builder shall not be relieved of obligations to perform the Work in accordance with the Contract Documents by tests, inspections, acceptances, or approvals required or performed by persons other than The Design-Builder. The Design-Builder shall employ a competent superintendent and a necessary assistant who shall be present at the Project Site at all times that Work is being performed. The superintendent shall represent the Design-Builder, and communications given to the superintendent shall be as binding as if given to the Design-Builder.

22. Authorization to Proceed:

22.1 Following each design review, the Design-Builder shall meet with the Engineer to:

22.1.1 Discuss the comments and responses, and to resolve all open issues and disagreements;

22.1.2 Confirm the next level of design development; and

22.1.3 Obtain written authorization to proceed with the next design level; and

22.1.4 Obtain written authorization to proceed with construction.

23. Design Calculations:

23.1 The Design-Builder shall include design calculations, catalog cuts, computations, telephone and facsimile records, and other similar documents supporting all elements of the Design-Builder's design with the Design-Builder's final signed and stamped calculations. The Design-Builder shall provide catalog cuts and manufacturer's data included with the final Project calculations for each approved material listed in the specifications or identified on the drawings.

24. Plan Checks - At Major Completion Levels, Design:

24.1 The Design-Builder shall submit written estimates of plan checks required to complete the Project. In the written estimates, the Design-Builder shall:

24.1.1 Identify all authorities having jurisdiction, including but not limited to the City Planning Division, Development Services Department, and other utilities. City will prepare plan check applications and submit the

applications to the authorities having jurisdiction. Payment for plan check applications shall be made by City.

24.1.2 Submit hard and electronic copies of written design submittal comments from City and other utilities or agencies, annotated to indicate the Design-Builder's responses, final disposition of comments, and incorporate into the Final Design documents.

25. Shop Drawings, Material Submittals and Samples:

25.1 The Design-Builder, as the Engineer of Record, shall review and approve Shop Drawings, Material Submittals and Samples prior to procurement.

25.2 The Design-Builder shall determine and verify all of the following prior to procurement:

25.2.1 Field measurements, quantities, dimensions, specified performance criteria, installation requirements, materials, catalog numbers, and similar information with respect thereto.

25.2.2 Products with respect to intended use, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work.

25.2.3 Information relative to the Design-Builder's sole responsibilities in respect of means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto.

25.3 Prior to approving Shop Drawings, Material Submittals or Samples, the Design-Builder shall review and coordinate each Shop Drawing, Material Submittals or Sample with other Shop Drawings, Material Submittals and Samples, and with the requirements of the Work and Contract Documents.

25.4 The Design-Builder shall carefully review Shop Drawings, Material Submittals and Samples and shall date, sign, and certify each submittal as being correct and in strict conformance with the Contract Documents. In the case of Shop Drawings, each sheet shall be so dated, signed, and certified. The Engineer will require 3 copies of approved submittals prior to procurement for QA/QC purposes and will not accept any submittals which have not been certified by the Design-Builder to be in compliance with the Contract requirements, and will return any non-certified submittals to the Design-Builder. Any delays caused by the Design-Builder's failure to so certify shall be the total responsibility of the Design-Builder.

25.5 With each submittal, the Design-Builder shall give the Engineer separate specific written notice of any variations between the Shop Drawing, Material Submittals or Sample submitted and the requirements of the Contract Documents. Additionally, the Design-Builder shall include a specific notation for City's acceptance of each such variation on each Shop Drawing, Material Submittals and Sample submitted.

- 25.6** City's acceptance of Shop Drawings, Material Submittals and Samples shall be for the sole purpose of determining whether the Shop Drawings, Material Submittals and Samples will, after installation or incorporation into the Work, conform to the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole.
- 25.6.1** City's acceptance shall not extend to means, methods, techniques, sequences, or procedures of construction, except where a particular means, method, technique, sequence, or procedure of construction is specifically and expressly called for by the Contract Documents.
- 25.6.2** City's review and acceptance of a separate item as such shall not indicate approval of the assembly in which the item functions.
- 25.6.3** City's review of Shop Drawings shall not relieve Design-Builder of the entire responsibility for the correctness of details and dimensions. The Design-Builder shall assume all responsibility and risk for any misfits and/or malfunctions due to any errors in the Design-Builder's submittals. Design-Builder shall be responsible for the dimensions and the design of adequate connections and details.
- 25.7** City's acceptance of Shop Drawings, Material Submittals or Samples shall not relieve the Design-Builder from responsibility for variations from the requirements of the Contract Documents, unless:
- 25.7.1** The Design-Builder in writing called attention to each such variation at the time of submission of the Shop Drawing, Material Submittals or Sample; and
- 25.7.2** City has specifically accepted in writing, either on the Shop Drawing or accompanying the Sample or Material Submittal each such variation.
- 25.8** The Design-Builder shall be solely responsible for any costs arising from the Design-Builder's failure to submit and/or receive City's acceptance of a Shop Drawing, Material Submittal or Sample as required by the Contract Documents or the City-accepted schedule of Shop Drawings and Sample submissions.
- 25.9** **Shop Drawing Submittal Procedures:**
- 25.9.1** The Design-Builder shall submit 3 copies of each approved Shop Drawing to the Engineer for QA/QC purposes.
- 25.9.2** The Design-Builder shall use a separate transmittal form for each specific item or class of material or equipment for which a submittal is required. The Design-Builder may use a single transmittal form for multiple items only when the items taken together constitute a manufacturer's "package" or are so functionally related that expediency indicates review of the group or package as a whole. The Design-Builder shall collate a multiple-page submittal into sets, and each set shall be stapled or bound, as appropriate, prior to transmittal to the Engineer.

- 25.9.3** The Design-Builder shall use a Project-standard transmittal form accepted by the Engineer. The transmittal form shall identify the Design-Builder and include the date of the submittal, the information prescribed by the form, and a unique sequential number in a format approved by the Engineer. If applicable, the Design-Builder shall process transmittal forms to record actions regarding sample installations.
- 25.9.4** For each submittal and using a label and/or a rubber stamp, the Design-Builder shall include the following information in the same or a substantially similar form:

Submittal No.
Contract No.
Project Name:
Name of Design Builder:
Reviewed and Approved for Conformance with the Contract Documents: Printed Name: _____ By: _____ (Signature)
Reference Drawing Sheet No's:
Reference Spec Section No's:

- 25.9.5** The Engineer will return at least one copy of each submittal with City's written comments to the Design-Builder within 20 Working Days following receipt of the submittal by the Engineer. If the Design-Builder fails to provide a complete and acceptable first re-submittal, as determined by the Engineer, City may deduct from the Contract Price the costs of City review beyond the first re-submittal.
- 25.9.6** Corrections indicated on submittals shall be considered as changes necessary to meet the requirements of the Contract Documents and shall not be taken as the basis for changes to the Contract requirements. City shall not be liable for any costs associated with fabrication or manufacture of an item that occurs prior to City's acceptance of the associated shop drawing submittal.
- 25.9.7** The Design-Builder shall maintain an accurate submittal log. The log shall show the current status of submittals and the Design-Builder shall make the submittal log available for City's review upon request.

25.9.8 Submittal Format for Shop Drawings:

1. For Shop Drawings presented on sheets larger than 11 by 17 inches, the Design-Builder shall include on each drawing the drawing title, number, date, and revision numbers and dates.
2. For Shop Drawings presented on sheets 11 by 17 inches or less, the Design-Builder shall conform to the format and quantity requirements for product data, and present the Shop Drawings as a part of the bound volume for the submittals required by this Section.
3. Except for diagrams and schematic drawings, Design- Builder shall prepare dimensioned drawings to scale. The Design-Builder shall identify materials and products for work shown.
4. The Design-Builder's Shop Drawings shall be not less than 8½ by 11 inches nor more than 30 by 42 inches.
5. The Design-Builder shall submit detailed drawings and descriptions of proposed deviations from details or component arrangement indicated on the Shop Drawings.
6. The Design-Builder shall provide finished drawings for City review indicating proposed installation of Work, and materials and equipment being furnished.
7. City will not accept Shop Drawings that are either:
 - i) Copies of plans; or
 - ii) Materials or equipment identified solely by catalog numbers.
8. To enable City's acceptance, the Design-Builder shall ensure that the data shown on Shop Drawings is complete with respect to dimensions, design criteria, material of construction, and other detail. Incomplete submittals will be rejected.

25.9.9 Submittal Format for Product Data:

1. The Design-Builder shall present product data submittals for each specification section as a complete, bound volume, including a table of contents that lists page and catalog item numbers for product data.
2. The Design-Builder shall clearly indicate each product that is being proposed for use by inserting a stamped arrow, cloud, or other prominent notation that identifies the pertinent specification section and paragraph numbers. City will reject product data submittals that are not clearly marked.
3. If product data satisfying submittal requirements does not exist, the Design-Builder shall create and submit to City the required product

data, including a notation that the product data was created specifically for the Project.

4. The Design-Builder shall furnish to City catalog data that describes in detail the products being furnished and enables the Engineer to determine that the products submitted conform to the requirements of the Contract Documents.
5. If more than one style, size, capacity, etc. of a product appears on a sheet, the Design-Builder shall clearly indicate exactly which product type is being submitted for approval. City will reject any submittal that fails to conform with this requirement
6. The Design-Builder shall ensure that the catalog data identifies the manufacturer of the product.

25.9.10 Submittal Format for Samples: The Design-Builder shall label or tag each sample, identifying the specification Section number, manufacturer's name and address, brand name, product identification number, and intended use in the Work.

25.9.11 If The Design-Builder receives the prior written approval of the Engineer, the Design-Builder may submit Shop Drawings and Samples during the design process beginning at the 30 percent design level. The Design-Builder shall request such early submittal by submitting a RFI. The Design-Builder shall conform to all other requirements and procedures regarding Shop Drawings and Samples.

26. Design Development:

26.1 The Design-Builder shall design the Project in compliance with all applicable laws, City and other local, state, and federal standards, and applicable industry standards and codes, including but not limited to those specifically set forth in the Contract Documents, the Municipal Sewer Approved Materials List, City noise and air pollution emissions regulations, applicable hazardous material handling and disposal regulations, the City's policies, and all other Reference Specifications approved by City at the time of Award.

26.2 The Design-Builder shall prepare and submit design packages for review and acceptance by City in accordance with City's guidelines and the Project Schedule. The Design-Builder's use of City's guidelines shall not reduce, change, mitigate, or absolve the Design-Builder's responsibility for the Project design in any way. The Design-Builder's acts of stamping and signing the drawings, specifications, calculations, or other final design documents shall mean that the Design-Builder understands, accepts, and approves all measures contained in or implied by City's guidelines.

26.3 The Design-Builder shall use the Bridging Documents as the starting point for Project design. The Final Design shall be based on the concepts in these documents. The Design-Builder shall review the Bridging Documents and verify the data and

recommendations (i.e. conceptual plans) prior to including them in the Project design. The Design-Builder shall perform the engineering tasks necessary to refine and optimize the Project, including but not limited to reevaluation and necessary modification of questionable/pending proposed alignments contained in the Bridging Documents.

- 26.4** The Design-Builder shall submit the Final Design documents to the Engineer. In addition to the deliverables specified in subsection 39.7 the Final Design documents shall also include but not be limited to:
- 26.4.1** One complete set of full sized (24-inch x 36-inch) original mylar final drawing plots, each stamped and wet signed by qualified responsible engineers registered in the state of California. Applicable portions of the drawing title blocks shall also be signed by the Design-Builder.
 - 26.4.2** Two complete electronic file sets of all final drawings on CD-Rewritable (RW) recordable disks in Bentley MicroStation Version V8 SE format.
 - 26.4.3** One, 8½-inch by 11-inch, final specifications, including all charts, graphs, tables, data sheets, and similar inserts required for a complete and approved copy suitable for Xerox reproduction.
 - 26.4.4** Two complete electronic file sets of the final specifications in MS Word processing software format.
 - 26.4.5** One complete set of engineering calculations and quantity take-offs, including required calculations, each wet stamped and signed by qualified responsible engineers registered in the state of California. All elements of the Final Design presented shall be supported by calculations. All computer programs used in development of Project calculations shall be Windows compatible. Catalog cuts and manufacturer's data shall be provided for each approved material listed in the specifications or identified on the drawings, and shall be included with the final Project calculations.
 - 26.4.6** A written list of required Shop Drawings (construction submittals) and Samples and an electronic file of the list on a recordable CD-RW in the latest version of MS Word processing software.
 - 26.4.7** Other reports and documents as may be required by City.
- 26.5** Procedures and time allowances for City's review of the design submittal, response by the Design-Builder to City's comments, and obtaining City's authorization to proceed to the next level of design shall be as stated in this Scope and the Project Schedule.
- 26.6** The Design-Builder shall provide designs for the relocation of public or private utilities which must be constructed or relocated as a result of the Project.

- 26.7** The Design-Builder's design shall comply with the ADA and Title 24. The Design-Builder shall complete and submit an ADA Compliance Review Checklist available from the City.
- 26.8** The Design-Builder shall prepare and incorporate into the specifications, a Storm Water Pollution Plan (SWPPP) to be implemented during construction. The SWPPP shall comply with the California Regional Water Quality Control Board Statewide General Construction Storm Water permit current requirements.
- 26.9** The Design-Builder shall prepare a construction quantity takeoff at 30%, 100% and Final submittals.
- 26.10** The Design-Builder shall revise plans and specifications to incorporate comments received from the City, City-wide plan check and from the permitting agencies.
- 27. Design Submittals:**
- 27.1** General: The Design-Builder shall ensure that all design submittals conform to the requirements described in this Section. City will reject any submittal that fails to meet the requirements described in this Scope and elsewhere in the Contract. City shall not grant a schedule adjustment for the Design-Builder's failure to meet these requirements. In each submittal the Design-Builder shall identify any variances from the Contract Documents. City may reject any design submittal for the Design-Builder's failure to identify variances, regardless of the timing of the discovery of the failure. The Design- Builder shall respond in writing to all City comments on each design submittal within 15 Working Days of the date of transmittal of the comments. The Design-Builder shall submit a completed QA/QC checklist at each design submittal.
- 27.2** 30 percent design Submittal - The 30% design submittal shall include but not be limited to:
- 27.2.1** Designs for construction of new facilities and for refurbishment and demolition of existing facilities.
- 27.2.2** Incorporation of the information contained in the Bridging Documents.
- 27.2.3** Reviewed preliminary calculations and hydraulic calculations.
- 27.2.4** Drawings that shall include at a minimum:
1. Title sheet with general notes, vicinity map, key map, and legend.
 2. Preliminary list of construction drawings on cover sheet.
 3. Locations of existing public and private utilities within the Project area on plan and profile.
 4. Preliminary site plan including construction staging areas (if applicable)
 5. Other drawings, as applicable to show information from pre-design maps.

6. List of special conditions, if any.
7. Drawings shall show all existing topographic and utility information and the horizontal alignment of proposed pipeline improvements with sizes.
8. Specification table of contents prepared in The GREENBOOK format.

27.3 Drawings that shall include at a minimum:

- 27.3.1** Updated plan, profile sheets, and construction details and notes.
- 27.3.2** Identification of both special and standard details.
- 27.3.3** A complete list of construction drawings on cover sheet.
- 27.3.4** Definition of the construction method to be used.
- 27.3.5** A complete site plan including construction lay down areas, site grading, and erosion control, if applicable.
- 27.3.6** Erosion Control Plan, storm water pollution prevention BMP's.
- 27.3.7** List of special conditions, if any.
- 27.3.8** A complete draft of specifications in The GREENBOOK format including:
 1. Table of contents.
 2. The Design-Build Special Provisions.
 3. Drafts of the Design-Builder-developed specification sections.

27.4 100 percent design Submittal - The 100 percent design submittal shall include but not be limited to:

- 27.4.1** Designs for construction of new facilities, and refurbishment and demolition of existing facilities.
- 27.4.2** Updated and incorporated information and comments from the 30 percent design submittal.
- 27.4.3** Completed, reviewed, and bound calculations.
- 27.4.4** Updates to geotechnical report, if any.
- 27.4.5** Permit applications as necessary.
- 27.4.6** Completed specifications in Green-book format.
- 27.4.7** Quantity take-off.

- 27.4.8** Drawings in all disciplines, including final and traffic control Plans approved by City, if any.
- 27.4.9** A current written list of permits including environmental permits and exemption required for the Project, identifying all permitting agencies and authorities having jurisdiction, and status and copies of permit approvals.
- 27.5 Final Design Submittal** - The Design-Builder shall submit a pre-Final Design to the Engineer, which shall include but not be limited to:
- 27.5.1** Updated and incorporated information and comments from the 100 percent design Submittal.
- 27.5.2** Comments from permitting agencies, including a log of comments and responses.
- 27.5.3** A current written list of permits including environmental permits and revised MND required for the Project, identifying all permitting agencies and authorities having jurisdiction, and status and copies of permit approvals.
- 27.5.4** City will review the Pre-Final Design and return comments to the Design-Builder. The Design-Builder shall, within 20 Working Days of receipt of City's comments, submit a Final (100%) Design to the Engineer, which shall include but not be limited to:
1. Updated and incorporated comments from the Pre-Final Design Submittal.
 2. Final drawings and calculations must be stamped and signed by a professional engineer. Also, the City requires the original wet-signed mylars be held in City files as legal records of the Project.
- 27.5.5** Final design drawings for construction of new facilities, and refurbishment and demolition of existing facilities.
- 27.6 Design Submittal Deliverables:**
- 27.6.1** The Design City Engineer in the form of 6 copies of the specifications, 6 sets of half sized (11-inch x 17-inch) drawing prints, and 10 sets of full sized (24-inch x 36-inch) drawing prints.
1. Drawing format shall conform to the City of San Diego CADD Standards and City provided "T" files. The standard scales are 1"=40' for plans and 1"=4' for profiles.
 2. Drawings shall show all existing topographic and utility information and the horizontal alignment of proposed pipeline improvements.
- 27.6.2** The Design-Builder shall deliver the pre-Final Design to the Engineer in the form of 6 copies of the specifications and 8 sets of half sized (11-inch x 17-inch) drawing prints.

27.6.3 The Design-Builder shall submit all drawings in Bentley MicroStation V8 SE format per City's CADD Standards. The Design-Builder shall attend a coordination/orientation meeting with City's E&CP CADD specialist to review and discuss City's CADD standards. The Engineer will arrange for the meeting upon The Design-Builder's request. The Design-Builder shall also submit the Electronic In-Roads ALG file. The Design-Builder shall number proposed alignment points on plan views using the automated process through In-Roads Software. The Design- Builder shall also generate the Horizontal Alignment Coordinate Index report through In-Roads and place it on the last sheet of the drawings.

27.6.4 The Design-Builder shall submit the Final Design documents to the Engineer, which shall include but not be limited to:

1. One complete set of full sized (24-inch x 36-inch) original mylar final drawing plots, each stamped and wet signed by The Design-Builder's qualified responsible engineers registered in the state of California. Applicable portions of the drawing title blocks shall also be signed by The Design-Builder.
2. Six, 8½-inch by 11-inch copies of the final specifications, including all charts, graphs, tables, data sheets, and similar inserts required for a complete and approved copy suitable for Xerox reproduction.
3. Two complete electronic file sets of the final specifications.
4. Two complete electronic file sets of the final drawings on CD-RW.
5. Six complete and approved 8½-inch by 11-inch copies of the final construction cost estimate.
6. Two complete electronic files of the final construction quantity takeoffs and cost estimate.
7. Six complete sets of engineering calculations, including hydraulic, mechanical, electrical, and structural calculations, each wet stamped and signed by the Design-Builder's qualified responsible engineers registered in the state of California. The Design-Builder shall support all elements of the design presented by calculations the Design-Builder shall use only Windows compatible computer programs for Project calculations.
8. Other documents as required elsewhere in this Scope or required by the Engineer.

28. Quality Assurance and Control:

28.1 The Design-Builder shall be completely and solely responsible for Project quality assurance and quality control. The minimum acceptable quality assurance and quality

control plan is described in the Quality Assurance/Quality Control Plan Guidelines, attached hereto and incorporated herein as Attachment A, section 30 – Quality Assurance / Quality Control Guidelines.

- 28.1.1** Design QA/QC - The Design-Builder shall be completely and solely responsible for Project quality assurance and quality control [QA/QC] during design.
- 28.1.2** Checklists - As part of the QA/QC Plan, The Design-Builder shall use the City-provided checklists and attach the checklists to the plans and specifications.
- 28.1.3** Final Design - The Design-Builder shall submit QA/QC records for the final specifications and drawings to verify coordination within the engineering discipline, between engineering disciplines, between the final specifications and drawings, and to verify consistency with existing City Projects.
- 28.1.4** Construction QA/QC - The Design-Builder shall be completely and solely responsible for Project QA/QC during construction.

29. Quality Assurance / Quality Control Guidelines:

29.1 General

- 29.1.1** The Design-Builder shall be completely and solely responsible for Project quality assurance and quality control, both during design and during construction. This Attachment outlines the minimum requirements for an acceptable quality assurance and quality control plan [QA/QC Plan]. The cost for the Design-Builder's QA/QC Plan and its implementation shall be included in the Design-Builder's Proposal.
- 29.1.2** The Design-Builder shall assign a QA/QC supervisor to ensure that all Work is performed in accordance with the Contract Documents, plans, specifications, manufacturers' instructions, Applicable Laws, and to acceptable industry standards.
- 29.1.3** The Engineer will monitor the Design-Builder's Work and Services and provide independent reviews as set forth in the Contract Documents. If City's review or inspection uncovers Work or Services that do not conform to the Contract Documents or Applicable laws, City may reject that Work and/or Services and The Design-Builder shall replace or correct any deficiency at no additional cost to City.
- 29.1.4** The concept of quality has evolved from conformance with specifications to meeting Owner requirements. The Design-Builder quality assurance and control has advanced from checking deliverables to multiple reviews, evaluations, inspections, and tests, concurrent with the Public Works Department reviews, oversight inspections, witnessing of tests, and similar

quality assurance activities. Ultimately, the Design-Builder shall provide a facility that meets the requirements described in the Contract Documents.

- 29.1.5** The Design-Builder shall respond to any QA/QC review comments by ensuring that the Design-Builder's staff considers the comments and notes the actions to be taken. The Design-Builder shall submit copies of the responses to the Engineer to indicate that the QA/QC review is complete and that the reviewers concur with the response.
- 29.1.6** If The Design-Builder detects any impending deviations from the Scope, Project Schedule, or Project budget, the Design-Builder shall take appropriate action to correct such deviations or to obtain written approval from the Engineer if deviations cannot be avoided.
- 29.1.7** The Design-Builder shall implement its QA/QC Plan that was submitted to City with The Design-Builder's RFP together with any revisions required by City, all of which are incorporated herein by this reference as though fully set forth herein.

29.2 QA/QC During Design

- 29.2.1** This Section describes the mandatory QA/QC Plan philosophies and procedures that the Design-Builder shall follow during design of the Project.
- 29.2.2** The Design-Builder is the engineer of record. City's review of Design-Builder's approved submittals is for the sole purpose of determining whether the submittals conform to the requirements of the Contract and to the Bridging Documents.
- 29.2.3** The Design-Builder shall include in its Proposal all costs necessary to meet this requirement.
- 29.2.4** The following quality objectives apply to the Project design:
 - 1. The Design-Builder shall design the Project facilities to meet the scope and objectives set forth in the Bridging Documents, which describe the Project facilities in moderate detail (layout, functions, etc.), thereby establishing the design requirements. The Design-Builder shall design the Project facilities to conform to these requirements except as modified by changes approved by City during design.
 - 2. The Design-Builder shall design the Project facilities to conform to the requirements of the Contract Documents.
 - 3. The Design-Builder shall prepare the Construction Documents to the standards of best engineering practice for clarity, uniformity, accuracy, and completeness.

4. The Design-Builder shall emphasize quality in the design and construction of the Project.

29.3 QA/QC Plan:

29.3.1 Responsibilities: The Design-Builder shall ensure that all members of the Design-Builder's Project team (i.e., preparer, reviewer, checker, and approver) understand their responsibility for quality design.

29.3.2 Design QA/QC Plan: The Design-Builder shall ensure that the design component of its QA/QC Plan includes a specific comprehensive approach to Project QA/QC Plan activities and requires documentation of the actual QA/QC Plan effort and related activities.

29.3.3 Design Review: The Design-Builder shall address all plan check comments received from the City and implement its QA/QC plan prior to re-submittals to the City for review. The Design-Builder shall submit documentation of the QA/QC efforts and related activities as discussed in item E Review and Comment Form, below.

29.3.4 Implementation: The Design-Builder shall be solely responsible for quality reviews and approval of its design work, and shall ensure that all design work is thoroughly checked, reviewed, and approved by qualified, experienced, knowledgeable personnel who were not involved in the original design work. The Design-Builder shall provide the following types of QA/QC design reviews:

29.3.5 Calculations:

1. The Design-Builder shall ensure that calculation sheets are signed and dated by the personnel preparing, checking, reviewing, and approving the calculations. The Design-Builder shall index all original calculation sheets in file folders maintained in a single location so that all original calculations for the entire Project can be readily found. At the time the Final Design is accepted by City, The Design-Builder shall submit to the Engineer a legible copy of all calculations, organized in an easy to use indexed loose-leaf binder or in clearly identified file folders.
2. The Design-Builder shall clearly identify any revisions to the calculations. The Design-Builder shall ensure that all revised calculations are checked, signed and cross-referenced to the original calculations.

29.3.6 The Design-Builder's Interdisciplinary Progress Reviews: The Design-Builder shall ensure that interdisciplinary progress reviews are held at the 30%, 100%, Final Design phases and as specified in this RFP, and that the reviews include all completed calculations, drawings, and specifications. The level of detail expected for each discipline at each completion level is defined in this RFP. The Design-Builder shall ensure that all comments

receive an agreed upon response and are recorded on The Design-Builder's Review and Comment Form (described in section 32.3.8 below). Design problems may arise from inconsistencies between disciplines. The Design-Builder shall assign one or more qualified engineers to perform detailed interdisciplinary reviews to ensure consistency between disciplines, and between drawings and the specifications.

29.3.7 The Design-Builder's Final Review: The Design-Builder shall conduct the final QA/QC review after all 100% review comments have been incorporated and before printing of the Final Design submittal begins. The Design-Builder's final QA/QC review shall confirm that all previous review comments have been incorporated.

29.3.8 Review and Comment Form: The Design-Builder shall establish and maintain Review and Comment Forms which shall contain the following information:

1. The name of the Project;
2. City's contract number;
3. The type of review being conducted;
4. The name/title of the document being reviewed;
5. Identification of the page, paragraph, or drawing being reviewed;
6. The reviewer's comments;
7. The designer's response to the reviewer's comments;
8. The agreed upon resolution with respect to the comments and response;
9. The reviewer's signature and date of review;
10. The designer's signature and date of response; and
11. The signature of the Design-Builder's Project manager and date of review.

29.3.9 The Design-Builder shall ensure that each reviewer's comments are constructive and professional in tone, and that the forms are complete and appropriately filed.

29.4 QA/QC During Construction

29.4.1 The Design-Builder shall ensure that all Work meets the quality required by the Contract Documents and shall perform the QA/QC efforts necessary to ensure those requirements are met. City's inspection of any Work will

not relieve the Design-Builder of the primary responsibility for quality assurance and quality control.

29.4.2 The Design-Builder shall take the following measures to ensure that the Work is completed in accordance with the Contract Documents:

1. Certification by the designer that the submittals, materials, equipment, and Work all conform to the accepted design.
2. Certification by the vendors and suppliers that the products supplied conform to the Contract Documents, where applicable.
3. Photos and videos of the Work certified by the designer.
4. Any other measure designed to ensure that the Work is completed in accordance with the Contract Documents.

29.4.3 Specific QA/QC requirements for the Work are set forth throughout the Contract Documents. The requirements of this Section are primarily related to performance of the Work beyond the furnishing of manufactured products the Design-Builder agrees that the term “Quality Control” as used herein includes inspection, sampling and testing, and associated requirements.

29.4.4 Factory Inspections and Tests:

1. The Design-Builder agrees that all products, materials, and equipment, shall be subject to inspections, tests, and witness tests by City at the place of manufacture or fabrication.
2. The Design-Builder agrees that City may, at its option, enter into separate contracts with consultants or others to conduct inspections, tests, and witness tests on behalf of City.
3. The Design-Builder agrees that the presence of City, its employees, agents, and/or representatives at inspections, tests, and/or witness tests shall not relieve the Design-Builder of the sole responsibility for providing products, materials, and equipment that comply with all requirements of the Contract Documents. The Design-Builder agrees that compliance is the responsibility of the Design-Builder and shall not be avoided by any act or omission on the part of City or its employees, agents, and/or representatives.
4. The Design-Builder shall provide City with 10 Working Days advance notice of any testing at the place of manufacture or fabrication. At City’s option, City, its employees, agents, and/or representatives may conduct inspections and tests at the manufacturing place any time without advance notice to the Design-Builder.

29.4.5 Sampling and Testing:

1. Unless specifically provided otherwise in the Contract Documents, the Design-Builder shall conduct all sampling and testing in accordance with the methods prescribed in the current standards of the ASTM, as applicable to the class and nature of the material, product, or equipment being considered. However, City may accept any other generally-accepted system of sampling and testing that will ensure that the quality of the material, product, or equipment complies with the requirements of the Contract Documents. The Design-Builder shall obtain a Change Order from the Engineer prior to using any other generally-accepted system of sampling and testing.
2. Any waiver by City of any specific testing or other QA/QC Plan measures shall not be binding on City except when formalized by a fully executed Change Order, regardless of whether the waiver is accompanied by a guarantee of substantial performance as a relief from the specified testing or other QA/QC requirements as originally specified, and of whether the guarantee is accompanied by a performance bond to assure execution of any necessary corrective or remedial work.
3. The City may inspect and make independent investigations and tests of the Work. The Design-Builder agrees that if any portion of the Work fails to meet any of the requirements of the Contract Documents, City may require the Design-Builder to remove, correct, or reconstruct the Work in accordance with the Contract Documents.

29.4.6 Inspection and Testing Laboratory Service:

1. The City may require that Work located at the Otay Water Treatment Plant be tested by the City's testing laboratory. The Design-Builder shall coordinate with the Engineer to cause such tests to be performed.
2. Inspections, testing, and other services that are to be performed by the City, whether specified in the Contract Documents or required by the Engineer, will be performed by City's testing laboratory. The cost of these services will be paid for by City.
3. City's testing laboratory will submit reports in duplicate to the Engineer. The reports will document observations, results of tests, and compliance or non-compliance with the Contract Documents.
4. The Design-Builder shall cooperate with the Engineer and City's Testing Laboratory by furnishing samples of materials, concrete design mix, equipment, tools, and storage, and by providing other assistance as requested by City.

5. The Design-Builder shall notify the Engineer 48 hours prior to commencement of Work requiring inspection and laboratory testing services.
6. The Engineer will direct that any retesting required because of non-conformance to the Contract Documents be performed by the laboratory that performed the original test. Design- Builder shall bear all costs from any such retesting at no additional cost to City.
7. The Design-Builder shall be responsible for all tests required by the specifications or referenced codes and standards, unless specifically noted otherwise in the Contract Documents.

29.4.7 Special Inspection:

1. The Design-Builder shall provide all special inspections required by the California Building Code as currently adopted by City, including all inspections performed off the Project Site. The Design-Builder shall pay the cost of such inspections, and shall include the cost in DB's Proposal.

29.4.8 Installation:

1. Inspection: The Design-Builder shall inspect materials and/or equipment upon their arrival at the Project Site and immediately prior to installation. The Design-Builder shall reject damaged and defective materials and/or equipment. The Design-Builder's inspection shall include:
 - i) A review of the Contract requirements;
 - ii) Verification that all materials and/or equipment have been tested, submitted, and approved;
 - iii) Examination of the Work area to ascertain that all preliminary Work has been completed;
 - iv) A physical examination of materials and/or equipment to ensure that they conform to the Design-Builder approved and City-accepted Shop Drawings or other submittal data;
 - v) Instruction as necessary to ensure that Design-Builder's workers understand the requirements of the Contract as they pertain to the materials and/or equipment;
 - vi) An examination of the quality of workmanship; and
 - vii) A review of control testing for compliance with the Contract requirements.

2. Measurements: The Design-Builder shall verify measurements and dimensions of the Work as an integral step of starting each installation. The Design-Builder shall be solely responsible for proper fit up and connection of components.
3. Special Procedures: The Design-Builder shall provide methods and facilities to ensure conformance with requirements for special process specifications such as nondestructive testing of materials. The Design-Builder shall maintain certifications for personnel, procedures, and equipment as necessary to meet the requirements of the Contract Documents and all Applicable laws.
4. Manufacturer's Instructions: The Design-Builder shall comply with applicable manufacturer's instructions and recommendations for installation, if those instructions and recommendations are more explicit and/or more stringent than the requirements of the Contract Documents.
5. Storage and care: If not immediately installed, the Design-Builder shall store and care for all materials and/or equipment delivered to the Project Site according to the manufacturer's recommendations.

29.4.9 Manufacturer's Field Installation Services and Reports:

1. When required by the specifications, the Design-Builder shall cause material or product suppliers or manufacturers to provide qualified personnel to:
 - a) Observe and evaluate:
 - (i) Project Site conditions;
 - (ii) Conditions of surfaces and installation;
 - (iii) Quality of workmanship;
 - (iv) Start-up of equipment; and
 - (v) Testing, adjusting, and balancing of equipment.
 - b) Provide instructions when necessary.
2. The Design-Builder shall report in writing to the Engineer any observations and Project Site decisions or instructions given to the Design-Builder by a material or product supplier or manufacturer's personnel that are supplemental or contrary to the written instructions of the material or product supplier or manufacturer.
3. Within 10 Working Days of each field visit, The Design-Builder shall submit in duplicate to the Engineer for review and acceptance final reports from a material or product supplier or manufacturer's

personnel. If the duration of the field visit is greater than 1 week, the Design-Builder shall submit weekly reports. Each final report shall certify that equipment or system has been satisfactorily installed and is functioning correctly.

29.4.10 Sample City QA/QC Checklists:

1. Sample City Checklists are available for review and use from the Engineer.

30. Project Meetings:

30.1 Progress Meetings - Design Phase - The Design-Builder shall schedule and hold regular progress meetings at least monthly and at other times as requested by the Engineer. Prior to a progress meeting, the Design-Builder shall submit its progress meeting format to the Engineer for review and acceptance. The Design-Builder shall also submit to the Engineer for review and acceptance:

- i) A meeting agenda prior to each meeting; and
- ii) Minutes of each meeting prior to the next meeting.

The Design-Builder shall ensure that its key personnel attend the progress meetings.

30.2 Progress Meetings - Construction Phase - The Design-Builder shall schedule and hold regular weekly progress meetings and at other times as requested by the Engineer. The Design-Builder shall report in writing to the Engineer the previous week's progress and the plans for the upcoming three weeks. Twenty-four hours prior to each progress meeting, Design- Builder shall provide to the Engineer a two-week window (look-ahead) schedule showing activities from the accepted Project Schedule that are to take place during this period, activities started but not yet completed, and activities which have begun out of sequence. Prior to a progress meeting, the Design-Builder shall submit its progress meeting format to the Engineer for review and acceptance. The Design-Builder shall also submit to the Engineer for review and acceptance:

- i) A meeting agenda prior to each meeting; and
- ii) Minutes of each meeting prior to the next meeting.
- iii) The design consultant shall attend progress meetings during construction as needed (Minimum every other meeting)

The Design-Builder shall ensure that its key personnel attend the progress meetings. In addition, the Design-Builder may, at its discretion, request attendance by representatives of its suppliers, vendors, manufacturers, and other subcontractors.

30.3 Other Meetings - From time to time during the Project, the Engineer may direct the Design-Builder to attend other meetings. These may include but are not limited to meetings with environmental or regulatory agencies, meetings with Water

Operations, meetings with utility companies, and meetings with other City divisions or departments.

31. Red-lines:

31.1 The Design-Builder shall be responsible for Red-lines.

31.2 Prior to final completion, The Design-Builder shall prepare and submit one complete set of full sized (24-inch x 36-inch) original mylar final As-Built Drawing CADD plots in accordance with the City's CADD Guideline. Each CADD mylar drawing sheet shall be wet stamped and signed by qualified responsible engineers registered in the State of California, and shall be stamped and wet signed by the architect/engineer of record, as required by law. Other applicable portions of the drawing title blocks shall also be signed by the Design-Builder. Drawing mylar shall be 3 mils minimum thickness.

31.3 Prior to Final Completion, the Design-Builder shall also submit:

31.3.1 Five complete full-sized sets of blueprint or copies of the final As-Built's.

31.3.2 Two complete electronic file sets of the final As-Built's on CDs (typical) prepared in the V8 version of Bentley MicroStation Version SE CADD software in accordance with City's CADD Guideline.

32. Record Keeping:

32.1 The Design-Builder shall maintain in a safe place at the Project Site a copy of construction documents (including field test records, correspondence, daily reports, and written interpretations and clarifications), Shop Drawings, Product Data, and Samples in good order. Field Documents, Shop Drawings, Product Data, Samples, and similar submittals are not part of the Contract Documents. The purpose of these documents is to demonstrate construction conformance to the Contract Documents, and the City shall have the right to inspect, audit, review, and copy these documents at any reasonable time.

32.2 The Design-Builder shall not have the authority to approve a Sample or other submittal that is not in strict conformance with the Contract Documents or the accepted final design, unless City has accepted the substitute. No Work requiring a submittal or sample submission shall commence until the submission has been approved by the Design-Builder. A copy of each approved submittal and each approved sample shall be kept in order by the Design-Builder at the Project Site.

32.3 The Design-Builder shall list and schedule submittals to be made and upon approval of each submittal transmit to City, within 5 Working Days, 2 copies of same. Failure to deliver the copies of approved submittals may result in withholding of progress payments.

32.4 The Design-Builder shall not be relieved of responsibility for any deviations from the requirements of the Contract Documents by City's acceptance of Shop Drawings, Product Data, Samples, or similar submittals unless the Design-Builder has

specifically informed City of such deviation at the time of the submittal and City has accepted the specific deviation in writing. The Design-Builder shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples or similar submittals by City's acceptance thereof. At the time of each submission, the Design-Builder shall, in writing, specifically identify deviations that the submittals or Samples may have from the requirements of the Contract Documents.

33. Required Test/Material Certificates:

33.1 The Design-Builder shall ensure that all tests are performed in accordance with the methods prescribed in the most current applicable national standard as may be required by law and as prescribed in the Contract Documents. Materials or Work in place that fails to pass acceptability tests shall be retested, at the direction of City and at the Design-Builder's sole expense. The Design-Builder shall submit all test certificates to City in a timely manner.

34. Reference Standards:

34.1. Except as otherwise noted or specified, the Work shall be completed in accordance with the following standards:

34.1.1. Public Utilities Department Water CIP Guidelines

34.1.2. For City of San Diego Reference Standards, see sub-item 17.11.1. Reference Standards Table.

34.1.3. California Building Code

34.1.4. California Mechanical Code

34.1.5. California Electrical Code

34.1.6. California Plumbing Code

35. Bridging Documents:

35.1 Sodium Hypochlorite at Otay Water Treatment Plant Pre-Design Report:

35.1.1 Appendix A - Location Map

35.1.2 Appendix B - Conceptual Sketch of Scope

35.1.3 Appendix C - Basis of Design Report

35.1.4 Appendix D - Constraint Maps

Bridging Documents

Sodium Hypochlorite at Otay Water Treatment Plant

PRE-DESIGN REPORT
Sodium Hypochlorite at Otay WTP
WBS B-13174



August 22, 2013

Prepared by
Julian Espinoza
Associate Civil Engineer
And
Ryan Greek
Assistant Engineer-Civil

Public Works Department
Engineering & Capital Projects
Project Implementation Division
Preliminary Engineering & Program Coordination Section 1

Requested By
Engineering and Program Management Division
Public Utilities Department

PROJECT PURPOSE

The storage of large numbers of one ton cylinders of Chlorine at Otay Water Treatment Plant creates a potential hazard to both employee and community safety. Therefore, this project will convert the existing chlorine system to on-site generation of Sodium Hypochlorite.

PROJECT SCOPE OF WORK

An on-site Sodium Hypochlorite generation system will be built that will alleviate the safety concerns associated with storing and using Chlorine gas for disinfection at the plant. Otay currently uses a multi-segment approach to disinfection in the water treatment process. Hypochlorite will directly replace gas chlorine in the current treatment plan.

The existing Chlorine Building was constructed in 1988. It is a 92' by 28' block building designed to house the ton containers of chlorine gas and feed equipment for Otay's ultimate built-out capacity of 60 MGD. Otay's current rated capacity is 34.2 MGD. The Department has no plans or projections to increase the plant's rated capacity within the 20 year life cycle of the proposed hypochlorite generation system. The Chlorine Room was modified to accommodate the installation of the chlorine dioxide system in 2010. The chlorine dioxide system will remain in the existing Chlorine Room as an important element of Otay's disinfection strategy. The new on-site hypochlorite generator will be installed in the existing Chlorine Room. As well as the hypochlorite feed pumps. A minimum of 36 hours of hypochlorite storage at the typical flow/typical dose chlorine use rate of 868 lbs/day shall be provided. The tanks will be housed in a secondary area on the south side of the Chlorine Building, which will contain three hypochlorite tanks and one salt storage tank, 10' in diameter and 14' high, capable of handling 120% of the total capacity.

The existing system uses gas chlorine and a sodium hypochlorite solution to generate chlorine dioxide. Use of hypochlorite in lieu of chlorine gas requires modification of the existing system. **For details, please refer to the Attachment A (Bridging Document).**

PRELIMINARY ENVIRONMENTAL ASSESSMENT

This project lies entirely within existing developed areas of the treatment plant and work is not anticipated to occur outside of the existing developed areas. Since construction is not anticipated to disturb and native vegetation or occur within sensitive area, this project should not require any biological resources study.

Past projects at the treatment plant site have provided monitoring during the nesting season to protect listed species such as the California Gnatcatcher that are known to use the MHPA areas to the west and also nesting raptors which may use the large eucalyptus trees around the site and near the reservoir. No raptors have been found using the site during surveys for the treatment plant upgrades project over the last three years. If work will occur during the breeding season for these species, a nesting survey should be performed prior to any vegetation removal.

A review of historical sensitivity maps indicates that the project is located within the mapped area for potential Archaeological sensitive resources. However, because work is located within the existing

disturbed areas and is not expected to disturb native soils, it is unlikely that archeological mitigation or monitoring would be required during construction activities.

This project is not located in a designated historical district. This property is not considered a historical landmark and does not propose to alter resources greater than 45 years old. The project site is located on non-marine Oligocene Funglomerate deposits. It is anticipated that paleontological resources would not likely be impacted as there will not be excavation into native formation.

The project involves work at a facility designed for handling, storage, and/or treatment of hazardous materials. This requires the contact of Joy Newman at ESD, 858-573-1204, during the design to help determine the appropriate consultations, investigations, and studies needed, if any. The applicant may be required to prepare a risk assessment in conformance with the Tanner Act.

The project as currently proposed would either require an addendum to MND or may qualify as a CEQA exemption under 15301- existing facilities and 15303- New Construction or Conversion of Small Structures which allow for alteration or construction of new or existing structures involving no or negligible expansion of use and where only minor modifications are made to the exterior of the existing structure.

This project would not require a City Site Development Permit (SDP), City Coastal Development Permit (CDP), or CCC Permit/Waiver.

Based on the current project plans, there would be no wetland impacts and therefore permits will not be required from the Army Corps of Engineers (404 permit), California Department of Fish and Game (Streambed Alteration Agreement), nor Regional Water Quality Control Board (401 Certification/Waiver).

ACCESS LAW DESIGN COMPLIANCE

A preliminary assessment of the project had been completed for compliance with the access laws: Americans with Disabilities Act/Americans with Disabilities Act Accessibility Guidelines [ADA/ADAAG], California's Title 24 Disabled Access Regulations, and local standards and policies on accessibility. It is likely this project is exempt with all the access laws.

It was determined that the proposed improvements Otay WTP are part of a machinery space and the improvements are due to maintenance and safety therefore can be exempt from the provision of accessibility to people with disabilities.

PROJECT SUPPORTING DOCUMENTS

The project supporting documents are provided within the below identified appendices:

- Appendix A Project Location Map
- Appendix B Conceptual Sketch of Scope
- Appendix C Basis of Design Report
- Appendix D Constraint Maps

Appendix A

Project Location Map

PREDESIGN LOCATION MAP
ON-SITE GENERATION OF SODIUM HYPOCHLORITE AT OTAY WTP



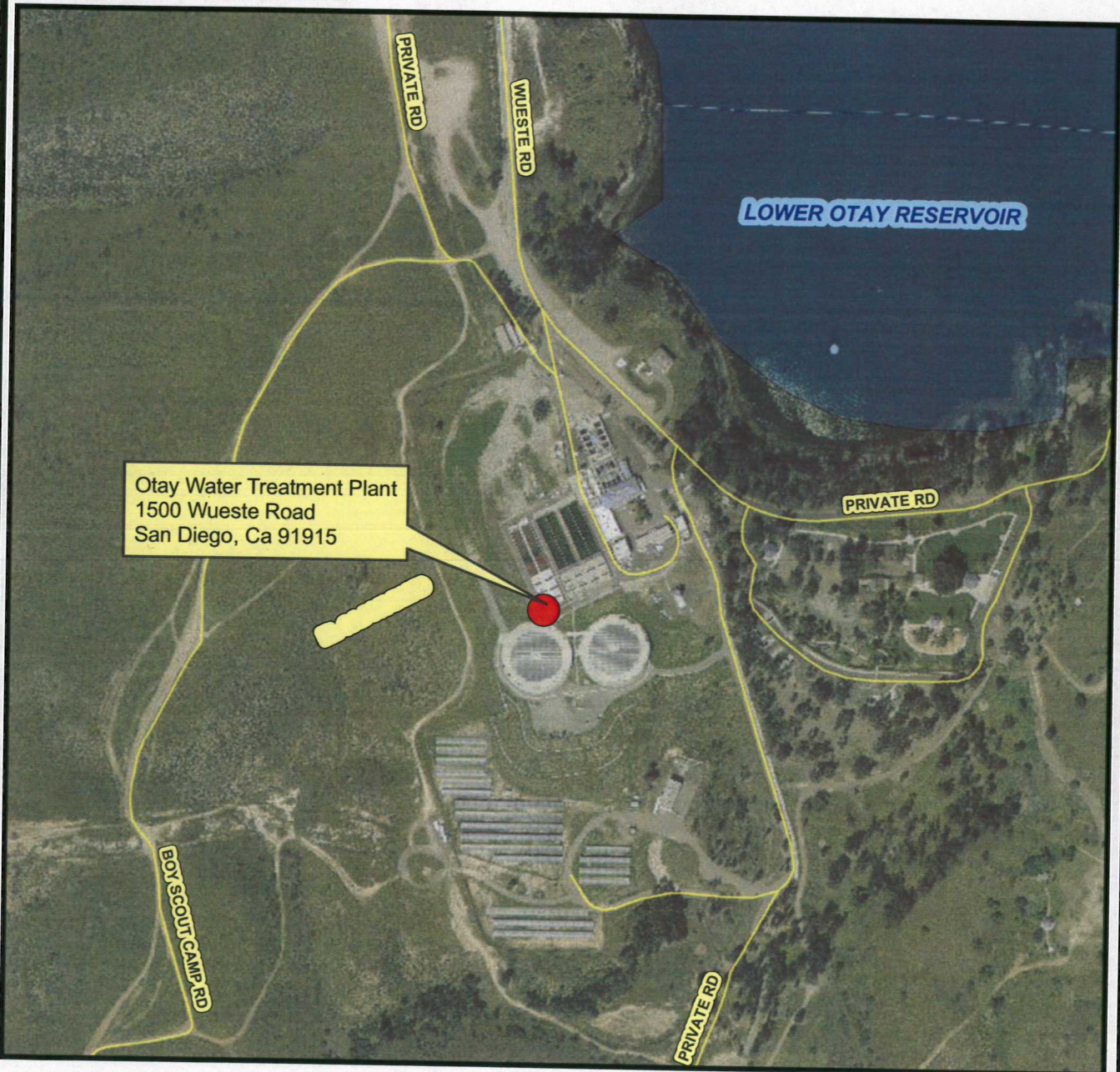
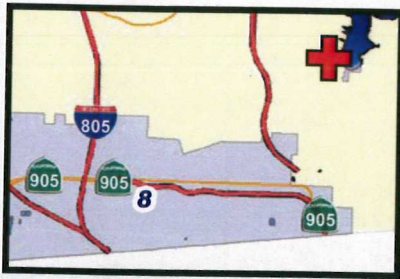
Project Implementation and Technical Services (PITS)
 CIP Preliminary Engineering and Program Coordination

SENIOR ENGINEER
 Neviene Antuon
 619-533-4852

PROJECT MANAGER
 Julian Espinoza
 619-533-4384

PROJECT ENGINEER
 Ryan Creek
 619-533-3767

PROJECT DRAFTER
 Susan Griebenow
 619-533-3652



Otay Water Treatment Plant
 1500 Wueste Road
 San Diego, Ca 91915

Legend

Project Location



No Scale

S:\PITS\PITS-CIP-Preliminary-Engineering-and-Program-Coordination\Drafting\Water & Sewer Projects\Water Projects\On-Site Gen Of Sodium Hypochlorite_Otay WTP\CIP Tracking\PDFs

COMMUNITY NAME: East Lake

COUNCIL DISTRICT: 08

SAP ID: B-13174

Date: June 13, 2013

Request for Proposal (Rev. Nov. 2013)



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Attachment A – Project Description, Scope of Work, Technical Specifications, and Bridging Documents
 Sodium Hypochlorite at Otay Water Treatment Plant Design-Build Contract

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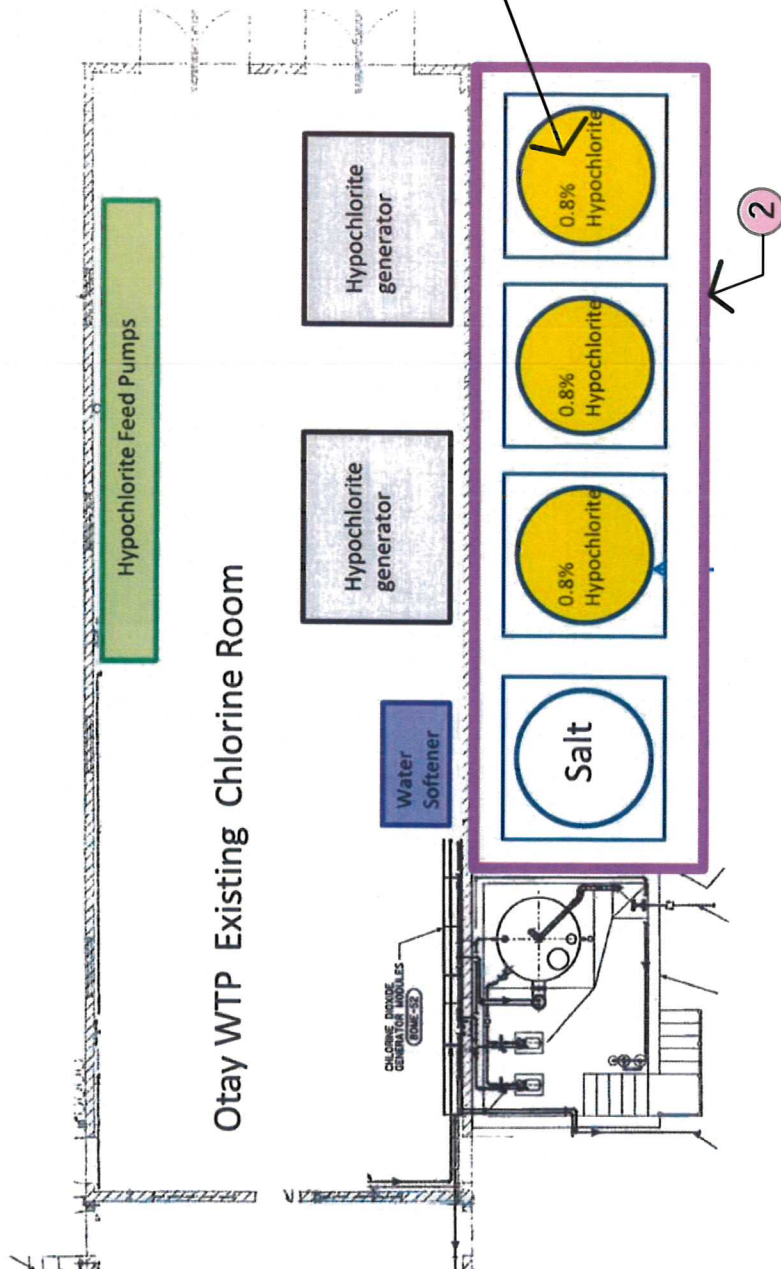
Appendix B

Conceptual Sketch of Scope

On-Site Hypochlorite Generation System Conceptual Drawing



KEY PLAN



PARTIAL PLAN VIEW

NO SCALE

KEY NOTES:

- ① (3) NEW SODIUM HYPOCHLORITE GENERATION SYSTEMS AT 10' DIA. & 14' HIGH.
- ② PROPOSE SECONDARY CONTAINMENT WALL AT 4' HIGH.

ON-SITE GENERATION OF SODIUM HYPOCHLORITE AT OTAY WTP CITY OF SAN DIEGO, CALIFORNIA PUBLIC WORKS DEPARTMENT PROJECT IMPLEMENTATION & TECHNICAL SERVICES DIVISION ALL INFORMATION SHOWN ON DRAWING ARE FOR THE PROJECT SCOPE OF WORK ONLY

Project Implementation and Technical Services (PITS)
CIP Preliminary Engineering and Program Coordination



FOR 10% PRELIMINARY DESIGN REPORT PURPOSES ONLY

SK-1

JULY 17, 2013

sjg

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CONCEPTUAL ONLY

Appendix C

Basis Of Design Report

Otay On-Site Hypochlorite Generation Project

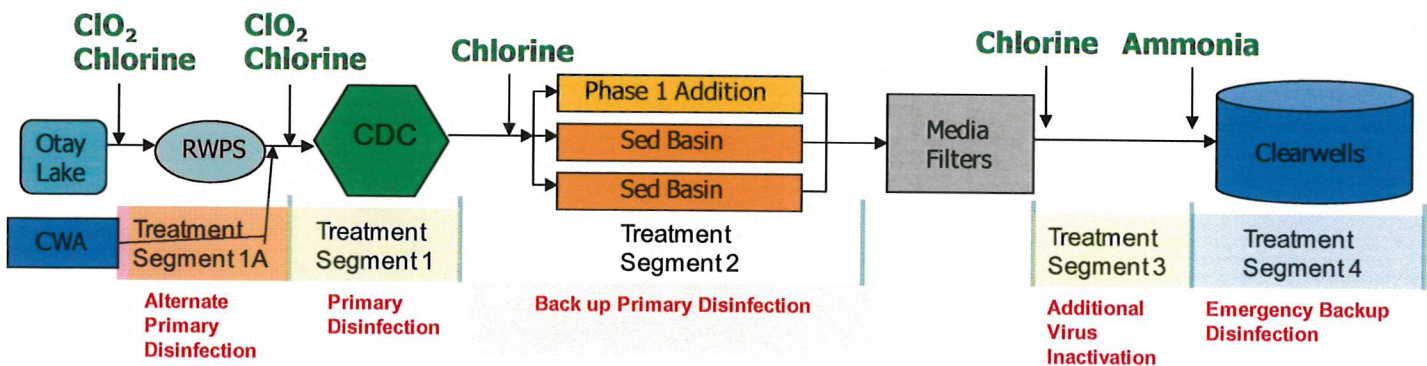
Basis of Design Report – Final

Purpose: This document is intended to provide the basis of design for the selection and size of the on-site hypochlorite generator (OSG) and ancillary equipment for this project.

Background: The existing Chlorine Building was constructed in 1988. It is a 92' by 28' block building designed to house the ton containers of chlorine gas and feed equipment for Otay's ultimate built-out capacity of 60 MGD. Otay's current rated capacity is 34.2 MGD. The Department has no plans or projections to increase the plant's rated capacity within the 20 life cycle of the proposed hypochlorite generation system. The Chlorine Room was modified to accommodate the installation of the chlorine dioxide system in 2010. Drawing attached as Appendix A. It is anticipated that the new OSG will be installed in the existing Chlorine Room. The chlorine dioxide system will remain in the existing Chlorine Room as an important element of Otay's disinfection strategy.

Otay currently uses a multi-segment approach to disinfection in the water treatment process. Figure 1, below, shows the treatment segments and disinfectant application points. Hypochlorite will directly replace gas chlorine in this treatment plan.

Figure 1 – Otay Disinfection Treatment Segments



Otay Disinfection Treatment Segments

- 1A – Pipeline from the Park manhole to the CDC – Chlorine dioxide
- 1 – Chlorine Dioxide Contactor -- Chlorine dioxide
- 2 – Back-up Primary Disinfection – Free chlorine (used in the event of ClO₂ failure)
- 3 – Filter Effluent Channel – Free chlorine
- 4 – Emergency Backup Disinfection -- Chloramines

Plant Design Parameters – Plant Flow

Maximum Plant Flow: As noted above, the current maximum instantaneous flow permitted by the California Department of Public Health is 34.2 MGD. This limitation is based on the maximum allowable filter hydraulic loading rate of 6 gal/ft²/min. Given the design depth of the filters (30" of GAC) and the historic filterability problems associated with use of 100% local water supply, it is very unlikely that up grading the filters to 7.6 gal/ft²/min (40 MGD) is possible. With the recent installation of backwash system improvements, filter performance has significantly improved opening the possibility of up-rating the filters at some point in the future. Therefore, **40 MGD** should be used as the maximum plant flow for designing the OSG system.

Minimum Plant Flow: Otay's filters use water pumped from the common filter effluent channel to supply backwash water. Because the post-filter chemicals (chlorine, caustic, and ammonia) are not flow paced, a minimum plant flow must be maintained past the application point. Even if the post-filter chemicals are flow paced, the effluent venture meter that would pace these chemicals is sized for a 60 MGD plant build-out and can only read accurately down to about 8 MGD making flow-pace operation impossible below a 14 MGD plant flow rate. This condition requires a minimum plant flow of **14 MGD**.

Typical Plant Flow: In addition to the plant maximum and minimum flow rates, the range of typical flows also should be consider when selecting equipment size. Sizing equipment exclusively for maximum flow and maximum dose can lead to oversized equipment and less than optimal control for the plant during the vast majority of operations. Typical flow for Otay was determined by analyzing the past three years of plant flows. The 99th percentile flow for this period was 24.2 MG. Given that the plant minimum flow is 14 MG, the operating flow range for the plant > 99% of the time is **14 MGD to 24.2 MGD**.

Plant Design Parameters – Chlorine Use

Chlorine Usage Data: Chlorine use at Otay has changed significantly with the introduction of chlorine dioxide. Prior to chlorine dioxide use, chlorine was applied pre-filter (either at the influent or effluent of the basin) and again at filter effluent. This double point application required a total chlorine dose of 4 to 6 mg/L. To account for all raw water quality conditions, a 50% safety factor over this range is recommended. The results in a maximum dose rate of 8 mg/L. Since Otay's Operations Plan calls for the capability Primary Back-up Disinfection (Treatment Segment #2) with free chlorination in the event of a chlorine dioxide system failure,

the OSG system must be able to produce a maximum dose rate of 8 mg/L at the maximum flow rate of 40 MGD.

In addition to the plant maximum flow/maximum dose rate, the range of typical flows also must be considered when selecting equipment size. Sizing equipment exclusively for maximum flow and maximum dose can lead to oversized equipment and less than optimal control for the plant during the vast majority of operations. Typical flow / typical dose rate for Otay is determined by analyzing the past 18 months of plant flow and chlorine usage. In normal operations, chlorine is applied post-filter and used to generate chlorine dioxide. The upper 95% confidence level dose of this treatment scheme is 4.3 mg/L. **Typical dose for Otay is therefore 4.3 mg/L.**

Table 1 – Design Flow and Chlorine Usage Rates

Design Flow / Cl₂ Use Rates	
Maximum Flow (MGD)	40
Minimum Flow (MGD)	14
Typical Flow (MGD)	24.2
Maximum Cl ₂ Dose (mg/L)	8 mg/L
Minimum Cl ₂ Dose (mg/L)	2.0 mg/L
Typical Cl ₂ Dose (mg/L)	4.3 mg/L

Design Generator Capacity	
Max Flow / Max Dose	2668 lbs/day
Min Flow / Min Dose	234 lbs/day
Typical Flow/ Typical Dose	868 lbs/day

OSG System Design Considerations:

Hypochlorite Generator System – The hypochlorite generation system shall be a Microclor System as furnished by Process Solutions, Inc, or equal.

General System Redundancy – All reasonable effort should be taken to minimize single-points-of-failure in the system. Where elimination of a single-point-of-failure is not possible, accommodation of alternate processes or replaceable spares should be indentified and provided. For example, extra hypochlorite tank storage might be considered in lieu of full redundancy of generator capacity.

The system shall be designed to provide the capability to use unloading of 12.5% commercial hypochlorite into hypochlorite storage tanks as a back-up chlorine supply. This system shall include a commercial strength sodium hypochlorite dilution panel shall including an eductor, a rotameter for potable water, a rotameter for 12% sodium hypochlorite, an outlet check valve and all other valving, piping, and equipment necessary for emergency service.

Generator System PLC -- The system shall be equipped with a Modicon PLC, or equal, similar to those used in the existing chlorine dioxide and fluoride systems. The system will be connected to the plant SCADA system to provide remote operation, monitoring and data logging. Integration of the generator PLC with the existing plant SCADA system shall be performed.

Generator Capacity Redundancy – Complete redundancy of generator capacity is required to meet the Typical Flow/ Typical Dose chlorine use rate of 868 lbs/day. The OSG supplier shall address how they intend to meet redundancy at the Maximum Flow / Maximum Dose chlorine use rate of 2668 lbs as Cl₂ for a period of 72 hours.

Generator Efficiency -- The hypochlorite generation system shall meet the following performance standards.

Hypochlorite System Performance Requirements	
Concentration of Sodium Hypochlorite Solution	0.8% 8,000 ppm +/- 0.05%
Salt Required to Produce 1 lb of Free Available Chlorine (FAC)	3.0 lbs maximum
Power Required to Produce 1 lb of Free Available Chlorine (FAC)	2.0 kW maximum
Water Required to Produce 1 lb of Free Available Chlorine (FAC)	15 gallons
The electrolytic system shall generate an aqueous solution of a minimum concentration of 0.8 percent (±0.05%) by weight sodium hypochlorite expressed as chlorine. The minimum capacity shall be demonstrated to be equal to the capacity specified while not exceeding the maximum raw material quantities.	

Hydrogen Management –The handling of this potentially dangerous by-product is an extremely important element of the generator design.

- A. The hydrogen dilution system shall dilute the hydrogen concentration to below 25 percent of LEL or 1 percent by volume.

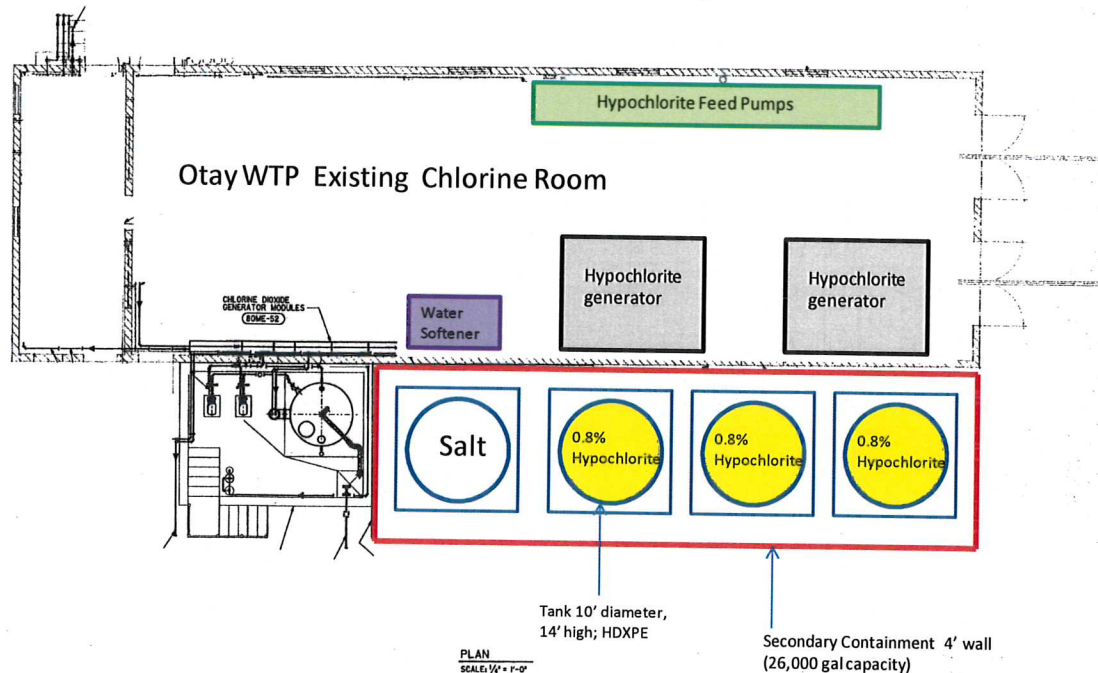
- B. Hydrogen dilution to be two step process.
 - 1. Passive vent with at each electrolytic cell. NOTE: For operator safety, the cells are operated at atmospheric pressure, so that hydrogen gas cannot be contained or pressurized. Pressurized cells can be dangerous.
 - 2. Blower assist fan installed on each generator skid.
 - 3. Forced draft blowers at the solution storage tank(s).

- C. The Solution Tank(s) hydrogen dilution blower shall be provided. There shall be two blowers installed so that if one blower fails, the second blower is activated. The hydrogen dilution system design shall incorporate the following safety features:
 - 1. Blower current sensing.
 - 2. Differential pressure switch positioned in the dilution ductwork vent stack.
 - 3. Software controlled safety interlocks to detect control system sequence failure.

- D. A Hydrogen Gas Room Monitor/Detector shall be provided.
 - 1. The hydrogen gas monitoring system shall continuously measure and display gas concentration and provide alarms when preset limits are exceeded. Transmitter will send signal to local controller and/or PLC.

Hypochlorite Storage Tanks – A minimum of 48 hours of hypochlorite storage at the Typical Flow/Typical Dose chlorine use rate (868 lbs/day) shall be provided. Hypochlorite tanks shall not be located within the Chlorine Room. All tankage shall be enclosed within a secondary containment area capable of handling 120% of the total tankage capacity.

On-Site Hypochlorite Generation System Conceptual Drawing



Hypochlorite Feed Pumps – Each hypochlorite feed pump shall be capable of feeding the entire range of Maximum Flow/ Maximum Dose (2668 lbs/day as Cl_2) to Minimum Flow /Minimum Dose (234 lbs/day as Cl_2). The system should be equipped with a redundant pump of identical capacity. Hypochlorite feed pumps should be flow-paced to either the plant influent flow or plant effluent flow based on the designated application point. The system shall use the existing chlorine solution lines at the northwest corner of the existing Chlorine Building.

The hypochlorite feed system shall have the capability to feed up to Maximum Flow/ Maximum Dose (2668 lbs/day as Cl_2) simultaneously to:

1. Basin inlet (flow paced on Plant Influent Flow)
2. Filter effluent channel (flow paced on Plant Effluent Flow)

Salt Storage – A minimum of 30 days generator capacity at Typical Flow / Typical Dose (868 lbs/day as Cl_2) shall be provided. All salt storage shall be enclosed within a secondary containment area capable of handling 120% of the total tankage capacity. Brine tank system shall include stream filters for dirt and particle removal from brine stream.

Available Electrical Capacity – There is an existing 480V, 600A service into the Chlorine Room building. Adequacy to meet Maximum flow/Maximum dose OSG chlorine requirements is not known. It is the responsibility of the Contractor to determine the adequacy of this service and to provide whatever equipment necessary to meet anticipated service requirements.

Transition Between Chlorine Gas and OSG – Between 1 November and 30 May the plant can be shut down for 5 consecutive days to convert to the OSG system. Because of the hazardous nature of chlorine gas, no demolition of any part of the chlorine gas system will be allowed while the chlorine gas system is in service.

The Contractor will remove all existing chlorine equipment from the Chlorine Room. The City shall retain ownership of this equipment. A preliminary assessment of the work finds that it is very likely that the transition work cannot be accomplished within this 5 day window. If the demolition of the existing chlorine system and installation of the new hypochlorite generation system cannot be accomplished within this 5 day shutdown window, the Contractor shall provide a temporary 12.5% hypochlorite feed system during the transition period.

Service Water Pre-filters – The Contractor shall provide two (2) duplex manifolds each with two (2) industry standard 10-inch Housings, each holding a 10” cartridge. This is for dirt, rust, and particulate matter from softener’s feed water, including four (4) Pressure Gauges to measure pressure drop across filters.

Water Softeners -- Water for use in the hypochlorite generators will be softened using two sets of twin tank ion exchange water softeners per generator skid with a hydraulically-driven, flow-controlled switchover valve. When the ion exchange capacity of one resin tank is nearly exhausted, the softener control mechanism will automatically divert flow to the alternate tank while initiating a brine backwashing of the first tank for regeneration of the ion exchange resin. Minimum efficiency will be 3,727 grains exchange per pound of salt.

Water Hardness Monitoring -- In-line hardness monitors capable of measuring hardness levels from 0.3 to 100 mg/L expressed as mg/L of CaCO₃ shall be installed downstream of each water softening system. The analyzer shall be a HACH Model SP 510 or equal.

Water Softener Backwash Water – Backwash water from the water softener shall be recycled back to the reservoir via the Chlorine Room drain line.

Generator Warranty -- Prior to acceptance of the sodium hypochlorite generation system, the Contractor shall provide written warranty from the system manufacturer that includes the following statements:

1. Contractor shall inspect the installation during and after completion and provide written certification that the sodium hypochlorite generation system is free from faults and defects and is in conformance with the Contract Documents.
2. The Contractor must provide the following after sales services:
 - a. Must provide a 24-hour 365-day toll free service hot line.
 - b. Next day technician availability.
 - c. Same day or overnight parts availability.
 - d. Must provide evidence of spare parts availability on this system such as electrolytic cells, rectifiers, control cabinets, metering pumps.
3. Sodium hypochlorite generator system will remain free of defects for a period of three (3) years from the date of final acceptance.
4. If the equipment requires repair or replacement during the three (3) year warranty period as a result of ordinary wear and tear under normal conditions, the Contractor will repair or replace such equipment as required without cost (including shipping, handling and labor) to the City.
5. The electrolytic cells including cell housing body shall have a three (3) year full replacement warranty and a prorated straight-line replacement warranty for years 4 to 7 from the date of final acceptance.
6. The Contractor shall guarantee the minimum performance of the system for electrical consumption, salt usage, and water usage for a minimum of three (3) years following final acceptance of installation.

Modifications to the existing Chlorine Dioxide Generation System:

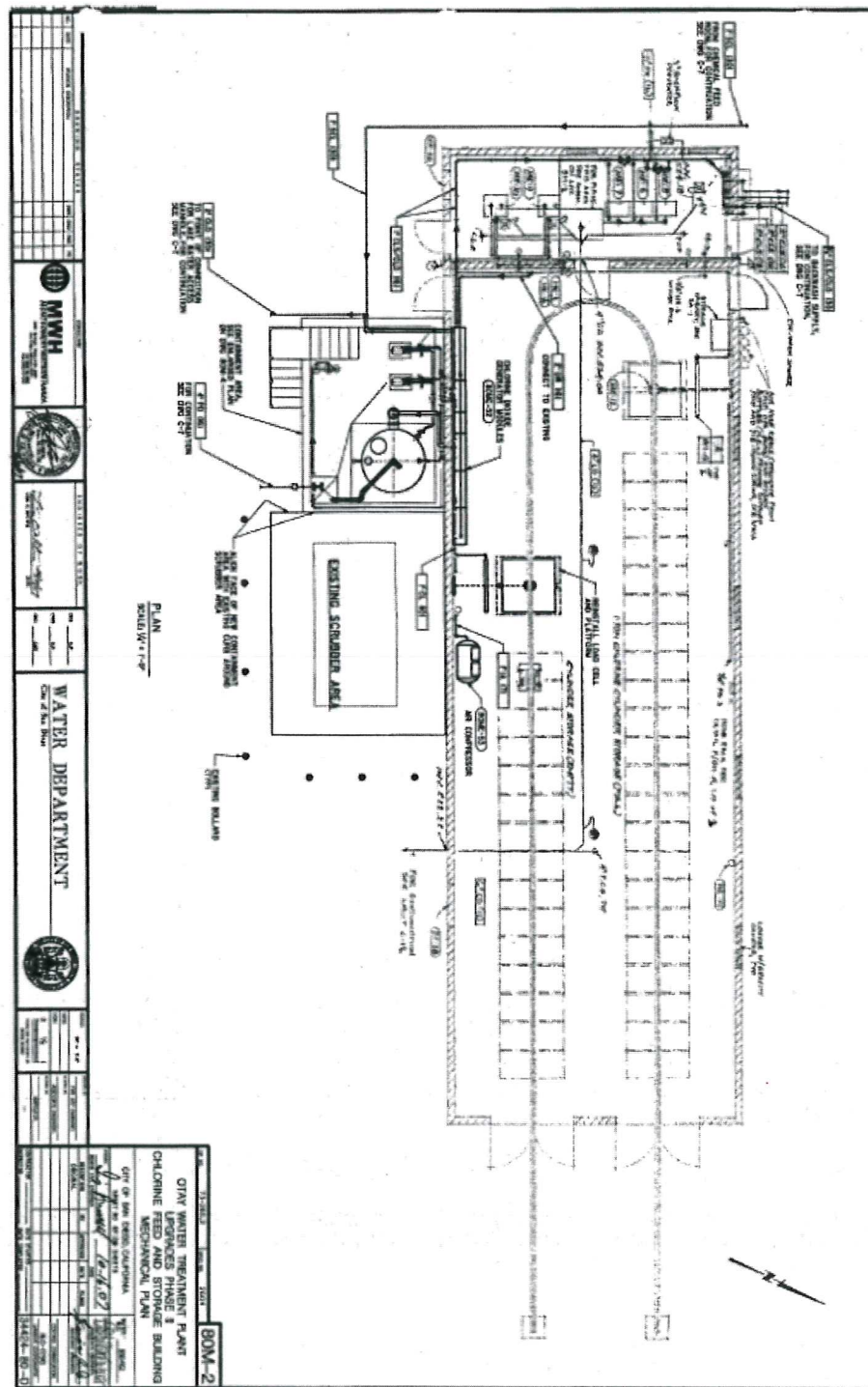
General System Considerations -- The existing system uses gas chlorine and a sodium hypochlorite solution to generate chlorine dioxide. Use of hypochlorite in lieu of chlorine gas requires modification of the existing system. A proposal for these modifications is attached as Appendix B (by Siemens). Siemens, or a contractor of equal experience in this type of modification, shall perform these modifications to the feed chlorine dioxide generator.

Hydrochloric Acid Feed – In the modified system, hydrochloric acid (15%) reacts first with the hypochlorite to produce molecular chlorine. That then reacts with the sodium chlorite to produce chlorine dioxide. The Contractor will make the modifications to the existing generator. The projected acid feed rate is ½ gallon per pound of chlorine dioxide generation. Given a maximum generation rate of 850 lbs/day of chlorine dioxide, this results in a design feed rate of 425 gallons of acid per day. At the Typical flow/ Typical dose rate the chlorine dioxide demand is 335 lbs/day resulting in an acid use of 168 gallons per day. These acid consumption rates require the use of a bulk storage tank.

Bulk hydrochloric acid (15%) will be stored in a 7,500 gallon tank. The Contractor shall determine if the existing ferrous tank can be used for this purpose. If necessary, the Contractor shall remove the existing ferrous chloride tank and provide an appropriate acid bulk tank. The Contractor will install a double walled 1' PVC line from the bulk tank to the chlorine dioxide generator. The Contractor will also provide a containment wall around the hydrochloric acid bulk tank – similar to those around the fluoride and ammonia tanks – capable of containing 120% of the contents of the acid tank.

Water Supply – The existing chlorine dioxide generator requires 30 gpm @ 50 psi. The modified system will use the existing water pressure and flow requirements. The Contractor shall provide any equipment necessary to obtain the necessary flow and/or pressure for the modified chlorine dioxide generation system.

Appendix A – Existing Chlorine Room with Chlorine Dioxide System



OTAY WTP UPGRADE

Appendix B -- Chlorine Dioxide Generator Modifications

By Siemens

UNPRICED SCOPE

May 17, 2013

Mr. James McVeigh
 Senior Water Operations Supervisor
 Otay Water Treatment Plant
 1200 Wueste Road
 Chula Vista, CA 91915 USA
 Email: JMcveigh@sandiego.gov
 Phone: 619-980-2908

**RE: CHLORINE DIOXIDE GENERATOR UTILIZING 0.8% SODIUM HYPOCHLORITE SUPPLY
 OTAY WATER TREATMENT PLANT – CHULA VISTA, CALIFORNIA
 Siemens Industry Quote No. Q130430JM1**

Siemens is pleased to offer the following proposal for the supply of a **Millennium III™ T-850 CWS** chlorine dioxide generator. The **Millennium III™ T-850 CWS** is a manual three-chemical (sodium chlorite / hydrochloric acid / sodium hypochlorite) chlorine dioxide generator that will allow the Otay Water Treatment Plant to eliminate chlorine gas as a chlorine dioxide precursor chemical.

This generator would replace one of the existing two-chemical chlorine dioxide generators currently located at the Otay Water Treatment Plant. The existing distribution equipment to include the batch tank, flow control valves, chlorine dioxide solution pump, and related piping and appurtenances would remain in place.

The objective is to generate chlorine dioxide with 95% efficiency utilizing 25% sodium chlorite, 15% hydrochloric acid, and 0.8% sodium hypochlorite. Design inputs are summarized in Table 1 as follows:

1. DESIGN INPUTS

San Diego – Otay Water Treatment Plant	
Peak Flow, MGD	34
Average Flow Rate, MGD	18
Approximate ClO ₂ Dose Rate mg/L	0.6 – 3.0 continuous feed average dose, nominally 1.0 PPM
ClO ₂ Use Rate lbs/day	65 – 850 based on seasonal variations
Current Average ClO ₂ use rate	~340 lbs/day
Current Service Rate	Generator set-point of 675 lbs/day, approximate 50% run time

Table 1 – Design Inputs

2. EQUIPMENT PROPOSAL

Siemens recommends the replacement of one of the existing two-chemical generators with a **Millennium III™ T CWS** designed to utilize a 0.8% sodium hypochlorite supply. When compared to retro-fitting an existing generator, the benefits of a new generator are:

1. **Ease of installation:** a new generator provides a fully-engineered, factory-built, modular design that can be easily placed into operation at the site.
2. **Reduced site time:** a new generator requires less site time to bring to operational status when compared to the field work involved in retrofitting an existing generator.
3. **Full factory warranty:** Siemens warrants the Chemical Feed System complete for a period of twelve (12) months from acceptance or eighteen (18) months from shipment, whichever occurs first.
4. **Cost Effective:** as a result of the benefits listed above, a new generator is a more cost effective option when compared to field-installed parts.

Siemens Industry, Inc.

2650 Tallevast Road
 Sarasota, FL 34243
 USA

Tel: +1 941-355-2971
 Fax: +1 941-359-7985
www.water.siemens.com

2.1 Equipment Description

Siemens shall provide a **Millennium III™ T850-CWS** three chemical manual chlorine dioxide generator capable of producing up to a maximum of 850 lbs/day of chlorine dioxide for delivery to the chlorine dioxide batch tank. The production range of this generator is 65 to 850 lbs of ClO₂ per day. The generator comprises principally:

Qty	Description
1	Chlorine Dioxide Generator Siemens Millennium III™ T850-CWS chlorine dioxide generation system capable of 10:1 turndown range, with production capability from 65-850 lbs/day of ClO ₂ each. Skid mounted design constructed of stainless square tube. Includes 5 HP motive water booster pump capable of delivering up to 50 gal/min at 100 psi. Logic Relay Control Panel, with King rotameters.

Table 2 – T-CWS Major Components (standard system)

2.2 Controls Impacts

Existing controls shall be integrated with the proposed unit. The following controls impacts are identified:

1. Power supply and electrical disconnect for new 5HP, 480 VAC, 3 phase water booster pump

The existing sodium chlorite magnetic flow meter shall be incorporated into the sodium chlorite supply piping for the new generator.

The new generator will require 240/480 VAC, 20 amp, three phase power to the water booster pump. This booster pump is necessary to provide sufficient motive water to the eductor that is required to move the volume of 0.8% sodium hypochlorite indicated in Table 3.

2.3 Distribution System Impacts

The current standard production rate of chlorine dioxide at the Otay Water Treatment Plant is 675 lbs/day. At this production rate, the chlorine dioxide generator runs approximately 50% of the time, per Otay WTP personnel. The water booster pump that is currently installed on the existing generator produces a flow rate of 35 gallons per minute. At a production rate of 675 lbs of ClO₂ per day and a generator water flow rate of 35 gallons per minute, the concentration of the chlorine dioxide solution produced is approximately 1,600 ppm.

A conversion of the generator to function with 0.8% sodium hypochlorite will have an impact on the concentration of chlorine dioxide produced at all points in the generator production range. The weak bleach conversion will require a larger eductor to handle the approximate sixteen-fold (12.5% / 0.8% = 15.6) increase in precursor chemicals being drawn through the eductor. A larger capacity water booster pump will be necessary to provide sufficient motive water to run the eductor efficiently. The new water booster pump will have an output of 50 gallons per minute. At a production rate of 675 lbs/day the concentration of the chlorine dioxide solution produced by the generator will be approximately 1,000 ppm. The consequence of this is that the generator will have to run approximately 80% of the time. If the ClO₂ production rate is set to 850 lbs/day, the generator will run approximately 65% of the time.

Table 3 summarizes the production rate and subsequent precursor demands at various rates needed as follows:

Production Rate (lbs/day ClO ₂)	Precursor Demand (gal/day)		
	25% Sodium Chlorite	15% Hydrochloric Acid	0.8% Sodium Hypochlorite
850	475	360	7,252
675	377	286	5,759
340	190	144	2,901
85	48	36	725

Table 3 - ClO₂ Precursor Use Rates

2.4. Sodium Hypochlorite Dilution

Please be aware that there are several implications that result from the use of 0.8% sodium hypochlorite use as a chlorine dioxide precursor chemical. These implications are summarized as follows:

1. Low chemical concentration means high supply volume - Otay Water Treatment plant has a current average ClO₂ use rate of approximately 340 lbs/day. At this use rate approximately 2,900 gallons of 0.8% sodium hypochlorite will be required on a daily basis.
2. 0.8% sodium hypochlorite storage - a 2,900 gallon/day use rate, a bulk storage tank of approximate 3,500 gallon capacity will be necessary to provide an uninterrupted precursor supply to the generator.
3. Sodium hypochlorite dilution system - a system to dilute 12.5% sodium hypochlorite to 0.8% will be necessary. Since the ClO₂ requires a constant supply of 0.8% bleach, there are two options:
 - a. Use two bulk storage tanks and a batch process to dilute approximately 186 gallons of 12.5% sodium hypochlorite to 2,900 gallons of 0.8% sodium hypochlorite
 - b. Use a bleach dilution system that provides a supply of 0.8% sodium hypochlorite to the bulk storage tank
4. Dilution of sodium hypochlorite manually will be a time consuming task - if dilution water is supplied at 30 gallons per minute, it will take in excess of 1 ½ hours per day to fill the bulk storage tanks.

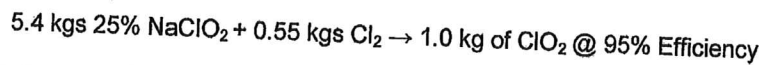
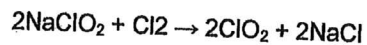
2.5 Process Description

As you are aware, the existing chlorine dioxide generator utilizes sodium chlorite and chlorine gas to produce chlorine dioxide. Siemens **Millennium III™ T-Series** generators produce chlorine dioxide (ClO₂) in a two stage continuous process under vacuum conditions to generate chlorine dioxide safely and efficiently. In the first stage, molecular chlorine gas is generated *in situ* by the reaction of a 12.5% solution of sodium hypochlorite and a 15% solution of hydrochloric acid. In the second stage, the chlorine gas is reacted with a 25% sodium chlorite solution to produce chlorine dioxide.

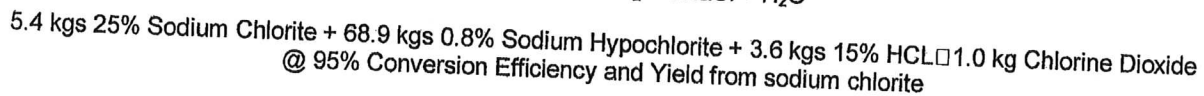
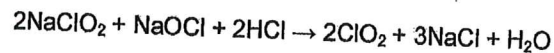
Efficiency and yield in both cases discussed herein is maximized by reaction of chemical reactants in their concentrated form under vacuum. These reaction conditions favor the immediate formation of chlorine dioxide, thereby minimizing byproduct formation found in other types of generators. **Millennium III™** generators are capable of consistently producing chlorine dioxide with a yield efficiency of 95 percent based on the stoichiometric reactions shown.

The first stage of the **Millennium III™ T-Series** generator reaction process combines the sodium hypochlorite solution with the hydrochloric acid solution to produce chlorine in-situ under vacuum according to the reaction:

NaOCl + 2HCl → Cl₂ + NaCl + H₂O
 subsequent second stage reaction follows immediately and is between the sodium chlorite solution and the in situ produced chlorine gas (produced under vacuum) according to the reaction:



The first and second stage reaction chemistry of the **Millennium III™ T-Series** generator process is a continuous inline combined reaction process that occurs in milliseconds under vacuum, and the overall combined reaction is described by the following:



As chlorine dioxide is formed in the reaction column (under vacuum) it is immediately ejected into the generator's motive/dilution water stream that drives the generator's vacuum eductor. The motive water stream is at a constant flow rate and constant pressure (using the water booster pump and pressure regulator provided as a standard part of the generator assembly skid).

Exiting the generator is an aqueous chlorine dioxide solution of variable but adjustable strength (can be for example a 200 to 3000 PPM ClO₂ aqueous feed solution - the actual concentration produced is based on the PLC settings and the reagent feed rate rotameter settings).

- Unlike other generation systems, the Millennium III process does not require reagent metering pumps or pH control, or feed of excess chlorine (above the stoichiometric requirements of the above reaction) or acid addition to the motive water stream driving the generator's eductor.
- Unlike other generation systems, the Millennium III process does not require that molecular chlorine gas first be injected to the motive water stream to pre-dissolve chlorine in the motive water to create hypochlorous acid (always in an equilibrium with hypochlorite at pH 7.0), the latter of which can precipitate an alternate and less efficient pathway to chlorine dioxide formation which also leads to much higher by-product levels (chlorate, un-reacted by-product chlorite, caustic, and THM's/THAA's) in the produced chlorine dioxide aqueous feed stream.
- The pH of the Millennium III produced aqueous chlorine dioxide feed stream is greater than 6.0 and less than 7.0, and nominally averages 6.5 to 6.8. The pH of the produced aqueous chlorine dioxide feed solution from most other competitive chlorine gas/chlorite based ClO₂ systems is typically < 5.0 and nominally closer to 4.0 which can create a more corrosive environment.

2.6 Yield Determination Analysis

Yield shall be determined as the ratio of chlorine dioxide, chlorite and chlorate generated to the theoretical stoichiometric maximum. The yield shall be demonstrated by an amperometric analysis capable of differentiating between chlorine, chlorine dioxide, chlorite and chlorate. The theoretical stoichiometric maximum shall be determined from the feed rates of the two reacting chemicals. Analysis shall be confirmed by the procedure as described in Standard Methods for the Examination of Water and Wastewater, APHA-AWWA-WPCF, 20th edition 1998, Amperometric Method II, 4500-ClO₂E.

3. PROGRAM SCHEDULE

A tentative program schedule is outlined in Table 4 below.

Task Name	Duration
Receive Signed Proposal	Less than 1 Week
Generate & Receive Approved Submittals	4 – 6 Weeks
Fabricate & Test Equipment	8 – 10 Weeks
Deliver & Install Equipment	2 Weeks
Startup	1 week
Performance Test	8 Weeks
Report	1 Week

Table 4 – Program Schedule

- Submittals: 4-6 weeks after contract acceptance
- Set up bleach dilution system (Responsibility of Otay Water Treatment Plant)
- Equipment: 8-12 weeks after receipt of approved submittals pending production approval at the time of order

Siemens shall provide 3 electronic copies and 1 hard copies of the operating manual with the shipment of the generator.

The above delivery schedule is based on credit approval and receipt of approved contract and submittals.

4. STORAGE/ SITE

The unit must be shielded from direct sunlight and rain, and protected from electrical surges such as lightning. Siemens requires the chlorine dioxide equipment to be located in a building with proper ventilation in a non-condensing environment. Operating temperature range is 40°F-104°F. Sites not meeting these minimum requirements may invalidate the equipment warranty. The generation system and precursors should also be protected from freezing.

The customer shall be responsible for all civil works, mechanical, electrical, and plumbing at the site, including the following as shown in Table 5:

Potable Water	50 gpm at a minimum 30 psi
Safety	Provide and install a safety shower and eye wash within easy access of each generator
Dedicated Power Source	240/480 VAC, Three Phase; Dedicated 20 Amp circuit breaker AND; 120 VAC, with Dedicated 20 Amp circuit breaker
Floor Space/Door Allowance	72" H x 96" W x 34" D
Drain	2"
Sodium Hypochlorite	Dilution System
Sodium Chlorite – 25%	475 gpd (at generator maximum)
Sodium Hypochlorite – 0.8%	7,252 gpd (at generator maximum)
Hydrochloric Acid – 15%	360 gpd (at generator maximum)

Table 5 – Customer Responsibilities

5. CHEMICALS

Siemens can provide a supply of **AKTA KLOR 25** (sodium chlorite, 25% aqueous solution) in drum, tote or bulk quantities. **AKTA KLOR 25** is registered with EPA (No. 21164-6) and meets requirements of NSF/ANSI Standard 60 and AWWA B303-05. A separate quotation for **AKTA KLOR 25** can be provided upon request.

6. SERVICES

6.1 Installation

Siemens will provide installation services with the provision of the equipment described above. It is anticipated that installation of the new generator will require two Siemens personnel for two days.

6.2 Start-up and Training Services

Siemens shall provide a service representative for three (3) eight hour day during the start up phase of the project. Two days shall be dedicated to equipment inspection, start up and process verification. One day shall be dedicated for training on the safe and proper handling of chlorine dioxide, operation of the equipment, and analytical methods to the owner's operations and laboratory personnel. Startup, training and installation supervision are set up for a single visit.

6.3 Ongoing Services

A Siemens service technician can also visit the site to perform regular routine maintenance on the generator, optimize chemical dosing, provide safety training for the Water Plant staff, if requested, and provide emergency

technical or mechanical response as necessary. A separate quotation for ongoing services as described can be provided upon request.

7. PRICE

Siemens is pleased to offer:

- One (1) **Millennium III™ T850-CWS** chlorine dioxide generator for a total of \$XX,XXX F.O.B factory with freight allowed to jobsite. This price includes Siemens start-up and training services. This training program includes analytical, applications support and safety reviews with operators and lab staff.
- Additional days required on site will be charged at \$1,200/day plus travel expense.

The price associated with this quote will remain in effect for a period of ninety (90) days. If we are not in receipt of an order by the end of this firm price period, we reserve the right to modify the prices quoted.

Should a purchase order result from this proposal, please return the *entire* proposal, signed where indicated below, and address the order to:

Siemens Industry, Inc.
2650 Tallevast Road
Sarasota, FL 34243

Or, the entire proposal may be faxed to the attention of Sheri Whalen at 941-359-7985.

Terms of payment are NET 30 days from date of invoice. These prices do not include any applicable taxes.

Siemens warrants the Chemical Feed System complete for a period of twelve (12) months from acceptance or eighteen (18) months from shipment, whichever occurs first.

The attached Siemens Industry, Inc. Terms of Sale are considered part of this proposal and shall prevail.

Thank you again for this opportunity to allow Siemens Industry Inc. to quote on your chlorine dioxide requirements. If you have any questions or need additional information, please contact me at 909-837-9908.

Sincerely,

Siemens Industry, Inc.

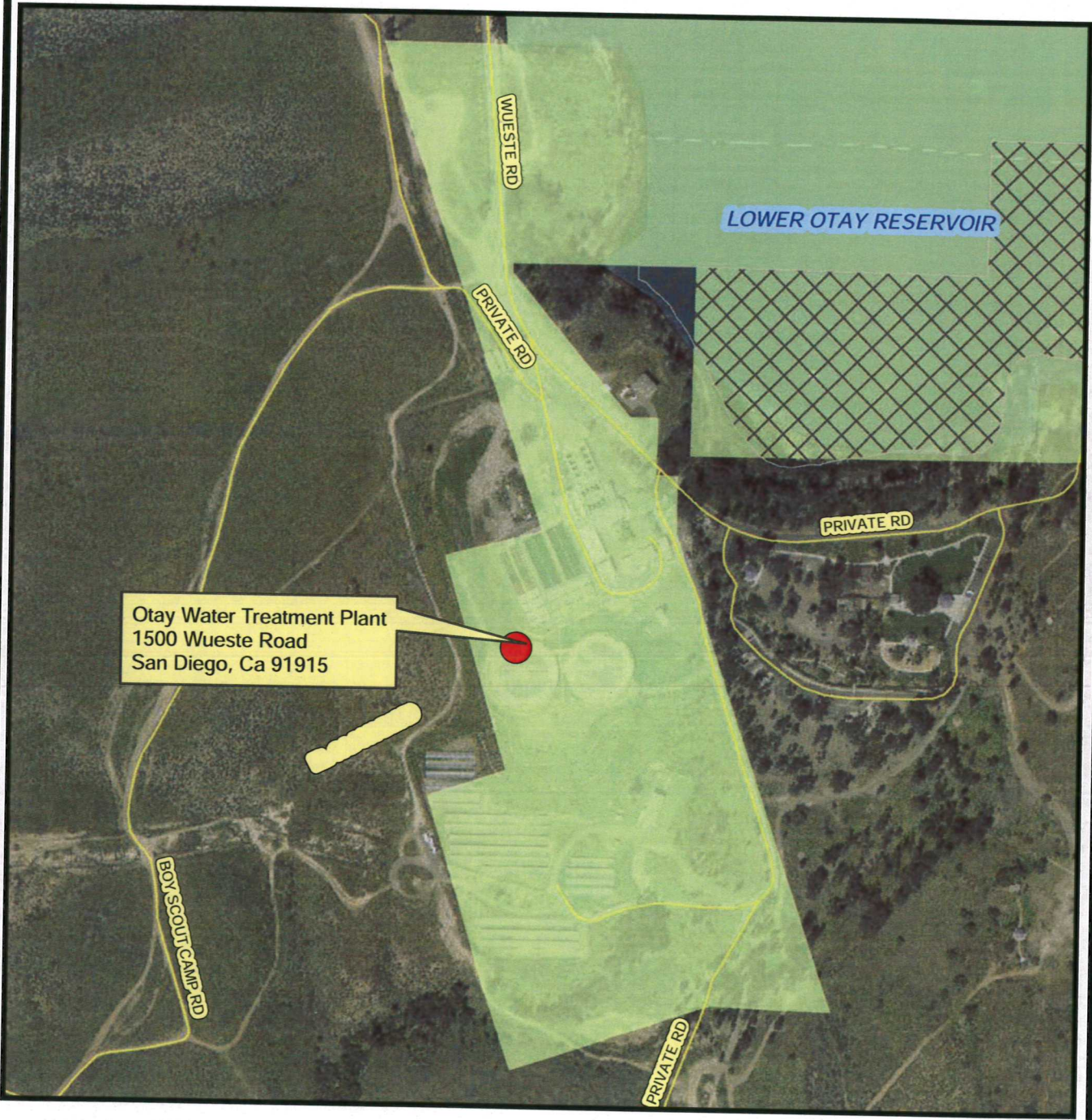
Dan Trybulski

Dan Trybulski
Technical Sales Representative, Municipal Services

Appendix D




Constraints Maps

PREDESIGN CONSTRAINTS MAP
 ON-SITE GENERATION OF SODIUM HYPOCHLORITE AT OTAY WTP



Otay Water Treatment Plant
 1500 Wueste Road
 San Diego, Ca 91915

Legend

-  Project Location
-  ECP Sensitive Construction Area
-  MHPA - Multi Habitat Planning Areas



No Scale

S:\PITS\PITS-CIP-Preliminary-Engineering-and-Program-Coordination\Drafting\Water & Sewer Projects\Water Projects\On-Site Gen Of Sodium Hypochlorite_Otay WTP\CIP Tracking\Contraints Map

Date: June 13, 2013

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PREDESIGN PROJECT COORDINATION MAP

ON-SITE GENERATION OF SODIUM HYPOCHLORITE AT OTAY WTP



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Legend

- Project Location
- Otay WTP Concrete Work
- Lower Otay Reservoir Emerg Outlet Improvement
- Lower Otay Reservoir Emerg Outlet Improvement



No Scale

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Date: June 13, 2013



Project Implementation and Technical Services (PITS)
 CIP Preliminary Engineering and Program Coordination



SAP ID: B-13174

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PREDESIGN CMP STORM DRAIN MAP

ON-SITE GENERATION OF SODIUM HYPOCHLORITE AT OTAY WTP



Legend

 Project Location

**NO CMP STORM DRAIN
IN THIS AREA**



No Scale

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Date: June 13, 2013



Project Implementation and Technical Services (PITS)
CIP Preliminary Engineering and Program Coordination



SAP ID: B-13174

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Request for Proposal (Rev. Nov. 2013)
Attachment A – Project Description, Scope of Work, Technical Specifications, and Bridging Documents
Sodium Hypochlorite at Otay Water Treatment Plant Design-Build Contract

ATTACHMENT B

PHASED FUNDING PROVISIONS

ATTACHMENT B PHASED FUNDING PROVISIONS

1. PHASED FUNDING

- 1.1. The selected The Design-Builder will be required to provide a Pre-award Schedule in accordance with sections 9-3 and 6-1 of the Supplementary Special Provisions (SSP) prior to award of Contract.
- 1.2. For phased funded contracts, the City typically secures enough funds for the first 90 Days of the contract prior to award. Within 10 Working Days after announcement of the Apparent Winner, the Design-Builder must contact the Project Manager to discuss fund availability and the duration of the first phase and submit the Pre-Award Schedule to the City for approval and preparation of the first Phased Funding Schedule Agreement.
- 1.3. The Design-Builder will be required to provide a Pre-award Schedule in accordance with 6-1, “CONSTRUCTION SCHEDULE AND COMMENCEMENT OF THE WORK” and 9-3, “PAYMENT” prior to award of Contract.
- 1.4. If the Proposal submitted by the Apparent Winner is rejected by the City for any reason, then within 5 Working Days after receiving notice, the next Apparent Winner must provide the Pre-Award Schedule. This process will continue until the City has selected a Design-Builder or has decided to reject all Proposals.
- 1.5. The first Phased Funding Schedule Agreement must show the fund availability for the first phase. Within 22 Working Days from the date of the announcement of, or notice to the next Apparent Low Design-Builder (whichever occurs last) and once a Pre-Award Schedule is accepted by the City, the City will present the first Phased Funding Schedule Agreement to you when you are selected as the Apparent Low Design-Builder.
- 1.6. At the City’s request, you must meet with the City’s Project manager before execution of the first Phased Funding Schedule Agreement to discuss his or her comments and requests for revision to the Pre-Award Schedule.
- 1.7. Your failure to perform the following may result in the Proposal being rejected as **non-responsive**:
 - 1.7.1. meet with the City’s Project manager, if requested to do so, to discuss and respond to the City’s comments regarding the Pre-Award Schedule,
 - 1.7.2. revise the Pre-Award Schedule as requested by the City within the specified 22 Working Days timeframe, or
 - 1.7.3. execute the first Phased Funding Schedule Agreement within a Day after receipt.

PHASE FUNDING SCHEDULE

CONTRACT NUMBER: K-14-1195-DBA-3

CONTRACT TITLE: SODIUM HYPOCHLORITE GENERATION AT OTAY WTP

DESIGN BUILDER: ORION CONSTRUCTION CORPORATION

Funding Phase	Phase Description	Phase Start	Phase Finish	Not-to Exceed Amount
1	Preparing plans and specifications including 30%, 75% and final submittal of construction documents; equipment purchase and start of Construction	NTP (Dec 17,2014)	Aug 31, 2015	\$1,011,375.00
2	Construction, BOBU, NOC, Project Close out	Sep 1, 2015	NOC (Nov 4, 2016)	\$1,876,225
Total			\$	2,887,600.00

NOTES:

1. Section 9-3.7 **COMPENSATION UNDER EACH PHASE**, applies.
2. The total of all funding phases shall be equal to the **TOTAL AGREED PRICE** as shown on the **AGREEMENT**.
3. The **PHASE FUNDING SCHEDULE** will be incorporated into the **AGREEMENT** and shall only be revised by a written modification to the **AGREEMENT**.

OWNER: CITY OF SAN DIEGO

DES/BUILDER: ORION CONSTRUCTION CORP.

By: F. M. Bafana

By: [Signature]

Date: 10-01-2014

Date: 8/22/14

ATTACHMENT C
EQUAL OPPORTUNITY CONTRACTING PROGRAM

EQUAL OPPORTUNITY CONTRACTING PROGRAM

1. **To The WHITEBOOK**, Chapter 10, Sections D and E, DELETE each in its entirety, and SUBSTITUTE with the following:

D. CITY'S EQUAL OPPORTUNITY COMMITMENT.

1. Nondiscrimination in Contracting Ordinance.

1. The Contractor, Subcontractors and Suppliers shall comply with requirements of the City's Nondiscrimination in Contracting Ordinance, San Diego Municipal Code §§22.3501 through 22.3517.

The Contractor shall not discriminate on the basis of race, gender, religion, national origin, ethnicity, sexual orientation, age, or disability in the solicitation, selection, hiring, or treatment of subcontractors, vendors, or suppliers. The Contractor shall provide equal opportunity for subcontractors to participate in subcontracting opportunities. The Contractor understands and agrees that violation of this clause shall be considered a material breach of the contract and may result in contract termination, debarment, or other sanctions.

The Contractor shall include the foregoing clause in all contracts between the Contractor and Subcontractors and Suppliers.

2. **Disclosure of Discrimination Complaints.** As part of its Bid or Proposal, the Bidder shall provide to the City a list of all instances within the past 10 years where a complaint was filed or pending against Bidder in a legal or administrative proceeding alleging that Bidder discriminated against its employees, subcontractors, vendors, or suppliers, and a description of the status or resolution of that complaint, including any remedial action taken.
3. Upon the City's request, the Contractor agrees to provide to the City, within 60 days, a truthful and complete list of the names of all Subcontractors and Suppliers that the Contractor has used in the past 5 years on any of its contracts that were undertaken within San Diego County, including the total dollar amount paid by the Contractor for each subcontract or supply contract.
4. The Contractor further agrees to fully cooperate in any investigation conducted by the City pursuant to the City's Nondiscrimination in Contracting Ordinance, Municipal Code §§22.3501 through 22.3517. The Contractor understands and agrees that violation of this clause shall be considered a material breach of the Contract and may result in remedies being ordered against the Contractor up to and including contract termination, debarment and other sanctions for violation of the provisions of the Nondiscrimination in Contracting Ordinance. The Contractor further understands and agrees that the procedures, remedies and sanctions provided for in the Nondiscrimination in Contracting Ordinance apply only to violations of the Ordinance.

E. EQUAL EMPLOYMENT OPPORTUNITY OUTREACH PROGRAM.

1. The Contractor, Subcontractors and Suppliers shall comply with the City's Equal Employment Opportunity Outreach Program, San Diego Municipal Code §§22.2701 through 22.2707.

The Contractor shall not discriminate against any employee or applicant for employment on any basis prohibited by law. Contractor shall provide equal opportunity in all employment practices. Prime Contractor shall ensure their subcontractors comply with this program. Nothing in this section shall be interpreted to hold a prime contractor liable for any discriminatory practice of its subcontractors.

The Contractor shall include the foregoing clause in all contracts between the Contractor and Subcontractors and Suppliers.

2. If the Contract is competitively solicited, the selected Bidder shall submit a Work Force Report (Form BB05), within 10 Working Days after receipt by the Bidder of Contract forms to the City for approval as specified in the Notice of Intent to Award letter from the City.
3. If a Work Force Report is submitted, and the City determines there are under-representations when compared to County Labor Force Availability data, the selected Bidder shall submit an Equal Employment Opportunity Plan.
4. If the selected Bidder submits an Equal Employment Opportunity Plan, it shall include the following assurances:
 1. The Contractor shall maintain a working environment free of discrimination, harassment, intimidation and coercion at all sites and in all facilities at which the Contractor's employees are assigned to work.
 2. The Contractor reviews its EEO Policy, at least annually, with all on-site supervisors involved in employment decisions.
 3. The Contractor disseminates and reviews its EEO Policy with all employees at least once a year, posts the policy statement and EEO posters on all company bulletin boards and job sites, and documents every dissemination, review and posting with a written record to identify the time, place, employees present, subject matter, and disposition of meetings.
 4. The Contractor reviews, at least annually, all supervisors' adherence to and performance under the EEO Policy and maintains written documentation of these reviews.
 5. The Contractor discusses its EEO Policy Statement with subcontractors with whom it anticipates doing business, includes the EEO Policy Statement in its subcontracts, and provides such documentation to the City upon request.
 6. The Contractor documents and maintains a record of all bid solicitations and outreach efforts to and from subcontractors, contractor associations and other business associations.

7. The Contractor disseminates its EEO Policy externally through various media, including the media of people of color and women, in advertisements to recruit, maintains files documenting these efforts, and provides copies of these advertisements to the City upon request.
8. The Contractor disseminates its EEO Policy to union and community organizations.
9. The Contractor provides immediate written notification to the City when any union referral process has impeded the Contractor's efforts to maintain its EEO Policy.
10. The Contractor maintains a current list of recruitment sources, including those outreaching to people of color and women, and provides written notification of employment opportunities to these recruitment sources with a record of the organizations' responses.
11. The Contractor maintains a current file of names, addresses and phone numbers of each walk-in applicant, including people of color and women, and referrals from unions, recruitment sources, or community organizations with a description of the employment action taken.
12. The Contractor encourages all present employees, including people of color and women employees, to recruit others.
13. The Contractor maintains all employment selection process information with records of all tests and other selection criteria.
14. The Contractor develops and maintains documentation for on-the-job training opportunities, participates in training programs, or both for all of its employees, including people of color and women, and establishes apprenticeship, trainee, and upgrade programs relevant to the Contractor's employment needs.
15. The Contractor conducts, at least annually, an inventory and evaluation of all employees for promotional opportunities and encourages all employees to seek and prepare appropriately for such opportunities.
16. The Contractor ensures the company's working environment and activities are non-segregated except for providing separate or single-user toilets and necessary changing facilities to assure privacy between the sexes.

ATTACHMENT D
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ATTACHMENT E
SUPPLEMENTARY SPECIAL PROVISIONS

SUPPLEMENTARY SPECIAL PROVISIONS

The following Supplementary Special Provisions (SSP) modifies the following documents:

- 1) Standard Specifications for Public Works Construction (The GREENBOOK) currently in effect.
 - 2) The City of San Diego Standard Specifications for Public Works Construction (The WHITEBOOK).
-

SECTION 2 - SCOPE AND CONTROL OF WORK

2-3.2 Self Performance. DELETE in its entirety and SUBSTITUTE with the following:

1. You must perform, with your own organization, Contract work amounting to at least 30% of the base bid alone or base bid and any additive or deductive alternate(s) that together when added or deducted form the basis of award.
2. The self performance percentage requirement will be waived for contracts when a “B” License is required or allowed.

SECTION 4 - CONTROL OF MATERIALS

4-1.3.4 Inspection Paid For By the Contractor. To the City Supplement, ADD the following:

Special inspections shall be for the plans and specification but not limited to Concrete Inspection, Welding Inspection, and Coating Inspection.

4-1.6 Trade Names or Equals. ADD the following:

You must submit your list of proposed substitutions for “an equal” (“or equal”) item(s) **no later than 5 Working Days after the determination of the Apparent Low Bidder** and on a City form when provided by the City.

SECTION 7 - RESPONSIBILITIES OF THE CONTRACTOR

7-3 LIABILITY INSURANCE. DELETE in its entirety and SUBSTITUTE with the following:

The insurance provisions herein must not be construed to limit your indemnity obligations contained in the Contract.

7-3.1 Policies and Procedures.

1. You must procure the insurance described below, at its sole cost and expense, to provide coverage against claims for loss including injuries to persons or damage to property, which may arise out of or in connection with the performance of the Work by you, your agents, representatives, officers, employees or Subcontractors.
2. Insurance coverage for property damage resulting from your operations is on a replacement cost valuation. The market value will not be accepted.
3. You must maintain this insurance for the duration of this contract and at all times thereafter when you are correcting, removing, or replacing Work in accordance with this contract. Your liabilities under the Contract, e.g., your indemnity obligations, is not deemed limited to the insurance coverage required by this contract.
4. Payment for insurance is included in the various items of Work as bid by you, and except as specifically agreed to by the City in writing, you are not entitled to any additional payment. Do not begin any work under this contract until you have provided and the City has approved all required insurance.
5. Policies of insurance must provide that the City is entitled to 30 days (10 days for cancellation due to non-payment of premium) prior written notice of cancellation or non-renewal of the policy. Maintenance of specified insurance coverage is a material element of the Contract. Your failure to maintain or renew coverage or to provide evidence of renewal during the term of the Contract may be treated by the City as a material breach of the Contract.

7-3.2 Types of Insurance.

7-3.2.1 Commercial General Liability Insurance.

1. Commercial General Liability Insurance must be written on the current version of the ISO Occurrence form CG 00 01 07 98 or an equivalent form providing coverage at least as broad.
2. The policy must cover liability arising from premises and operations, XCU (explosions, underground, and collapse), independent contractors, products/completed operations, personal injury and advertising injury, bodily injury, property damage, and liability assumed under an insured's contract (including the tort liability of another assumed in a business contract).
3. There must be no endorsement or modification limiting the scope of coverage for either "insured vs. insured" claims or contractual liability. You must maintain the same or equivalent insurance for at least 10 years following completion of the Work.
4. All costs of defense must be outside the policy limits. Policy coverage must be in liability limits of not less than the following:

<u>General Annual Aggregate Limit</u>	<u>Limits of Liability</u>
Other than Products/Completed Operations	\$2,000,000
Products/Completed Operations Aggregate Limit	\$2,000,000
Personal Injury Limit	\$1,000,000
Each Occurrence	\$1,000,000

7-3.2.2 Commercial Automobile Liability Insurance.

1. You must provide a policy or policies of Commercial Automobile Liability Insurance written on the current version of the ISO form CA 00 01 12 90 or later version or equivalent form providing coverage at least as broad in the amount of \$1,000,000 combined single limit per accident, covering bodily injury and property damage for owned, non-owned, and hired automobiles (“Any Auto”).
2. All costs of defense must be outside the limits of the policy.

7-3.3 Rating Requirements. Except for the State Compensation Insurance Fund, all insurance required by this contract as described herein must be carried only by responsible insurance companies with a rating of, or equivalent to, at least “A-, VI” by A.M. Best Company, that are authorized by the California Insurance Commissioner to do business in the State, and that have been approved by the City.

7-3.3.1 Non-Admitted Carriers. The City will accept insurance provided by non-admitted, “surplus lines” carriers only if the carrier is authorized to do business in the State and is included on the List of Approved Surplus Lines Insurers (LASLI list).

All policies of insurance carried by non-admitted carriers must be subject to all of the requirements for policies of insurance provided by admitted carriers described herein.

7-3.4 Evidence of Insurance. Furnish to the City documents e.g., certificates of insurance and endorsements evidencing the insurance required herein, and furnish renewal documentation prior to expiration of this insurance. Each required document must be signed by the insurer or a person authorized by the insurer to bind coverage on its behalf. We reserve the right to require complete, certified copies of all insurance policies required herein.

7-3.5 Policy Endorsements.

7-3.5.1 Commercial General Liability Insurance.

7-3.5.1.1 Additional Insured.

- a) You must provide at your expense policy endorsement written on the current version of the ISO Occurrence form CG 20 10 11 85 or an equivalent form providing coverage at least as broad.
- b) To the fullest extent allowed by law e.g., California Insurance Code §11580.04, the policy must be endorsed to include the City and its respective elected officials, officers, employees, agents, and representatives as additional insured.

- c) The additional insured coverage for projects for which the Engineer's Estimate is \$1,000,000 or more must include liability arising out of: (a) Ongoing operations performed by you or on your behalf, (b) your products, (c) your work, e.g., your completed operations performed by you or on your behalf, or (d) premises owned, leased, controlled, or used by you.
- d) The additional insured coverage for projects for which the Engineer's Estimate is less than \$1,000,000 must include liability arising out of: (a) Ongoing operations performed by you or on your behalf, (b) your products, or (c) premises owned, leased, controlled, or used by you.

7-3.5.1.2 Primary and Non-Contributory Coverage. The policy must be endorsed to provide that the coverage with respect to operations, including the completed operations, if appropriate, of the Named Insured is primary to any insurance or self-insurance of the City and its elected officials, officers, employees, agents and representatives. Further, it must provide that any insurance maintained by the City and its elected officials, officers, employees, agents and representatives must be in excess of your insurance and must not contribute to it.

7-3.5.1.3 Project General Aggregate Limit.

The policy or policies must be endorsed to provide a Designated Construction Project General Aggregate Limit that will apply only to the Work. Only claims payments which arise from the Work must reduce the Designated Construction Project General Aggregate Limit. The Designated Construction Project General Aggregate Limit must be in addition to the aggregate limit provided for the products-completed operations hazard.

7-3.5.2 Commercial Automobile Liability Insurance.

7-3.5.2.1 Additional Insured. Unless the policy or policies of Commercial Auto Liability Insurance are written on an ISO form CA 00 01 12 90 or a later version of this form or equivalent form providing coverage at least as broad, the policy must be endorsed to include the City and its respective elected officials, officers, employees, agents, and representatives as additional insured, with respect to liability arising out of automobiles owned, leased, hired or borrowed by you or on your behalf. This endorsement is limited to the obligations permitted by California Insurance Code §11580.04.

7-3.6 Deductibles and Self-Insured Retentions. You must pay for all deductibles and self-insured retentions. You must disclose deductibles and self-insured retentions to the City at the time the evidence of insurance is provided.

7-3.7 Reservation of Rights. The City reserves the right, from time to time, to review your insurance coverage, limits, deductibles and self-insured retentions to determine if they are acceptable to the City. The City will reimburse you, without overhead, profit, or any other markup, for the cost of additional premium for any coverage requested by the Engineer but not required by this contract.

7-3.8 Notice of Changes to Insurance. You must notify the City 30 days prior to any material change to the policies of insurance provided under this contract.

7-3.9 Excess Insurance. Policies providing excess coverage must follow the form of the primary policy or policies e.g., all endorsements.

7-3.10 Architects and Engineers Professional Insurance (Errors and Omissions Insurance).

1. For contracts with required engineering services (e.g., Design-Build, preparation of engineered Traffic Control Plans (TCP), etc. by the Contractor) for all of your employees or Subcontractors who provide professional engineering services under this contract, you must keep or must require its Subcontractor keep in full force and effect, Professional Liability coverage with a limit of **\$1,000,000** per claim and **\$2,000,000** annual aggregate.
2. You must ensure both that: (a) the policy retroactive date is on or before the date of commencement of the Project; and (b) the policy will be maintained in force for a period of 3 years after completion of the Project or termination of this contract whichever occurs last. You agree that for the time period specified above, there will be no changes or endorsements to the policy that affect the specified coverage.
3. If professional engineering services are to be provided solely by the Subcontractor, you must (a) certify this to the City in writing and (b) agree in writing to require the Subcontractor to procure Professional Liability coverage in accordance with the requirements set forth above.

7-4 WORKERS' COMPENSATION INSURANCE. DELETE in its entirety and SUBSTITUTE with the following:

7-4.1 Workers' Compensation Insurance and Employers Liability Insurance.

1. In accordance with the provisions of §3700 of the California Labor Code, you must provide at your expense Workers' Compensation Insurance and Employers Liability Insurance to protect you against all claims under applicable state workers compensation laws. The City, its elected officials, and employees will not be responsible for any claims in law or equity occasioned by your failure to comply with the requirements of this section.
2. Limits for this insurance must be not less than the following:

<u>Workers' Compensation</u>	<u>Statutory Employers Liability</u>
Bodily Injury by Accident	\$1,000,000 each accident
Bodily Injury by Disease	\$1,000,000 each employee
Bodily Injury by Disease	\$1,000,000 policy limit

3. By signing and returning the Contract you certify that you are aware of the provisions of §3700 of the Labor Code which require every employer to be insured against liability for worker's compensation or to undertake self-insurance in accordance with the provisions of that code and you must comply with such provisions before commencing the Work as required by §1861 of the California Labor Code.

7-4.1.1 Waiver of Subrogation. The policy or policies must be endorsed to provide that the insurer will waive all rights of subrogation against the City, and its respective elected officials, officers, employees, agents, and representatives for losses paid under the terms of the policy or policies and which arise from work performed by the Named Insured for the City.

7-5 PERMITS, FEES, AND NOTICES. To the City Supplement, ADD the following:
The City will obtain, at no cost to the Contractor; the following permits:

1. Building Permit
2. Electrical, Mechanical, Plumbing Permits

7-8.6 Water Pollution Control. ADD the following:

1. Based on a preliminary assessment by the City, the Contract is subject to WPCP.

7-15 INDEMNIFICATION AND HOLD HARMLESS AGREEMENT. To the City Supplement, fourth paragraph, last sentence, DELETE in its entirety and SUBSTITUTE with the following:

Your duty to indemnify and hold harmless does not include any claims or liability arising from the established active or sole negligence, or willful misconduct of the City, its officers, or employees.

SECTION 9 - MEASUREMENT AND PAYMENT

9-3.2.5 Withholding of Payment. To the City Supplement, item i), DELETE in its entirety and SUBSTITUTE with the following:

- i) Your failure to comply with 7-2.3, "PAYROLL RECORDS" and 2-16, "CONTRACTOR REGISTRATION AND ELECTRONIC REPORTING SYSTEM."

ADD:

9-3.7 Compensation Adjustments for Price Index Fluctuations. This Contract is not subject to the provisions of The WHITEBOOK for Compensation Adjustments for Price Index Fluctuations for the paving asphalt.

SECTION 207 – PIPE

207-17.2.3 Pipe Manufacturer. To the City Supplement, DELETE in its entirety and SUBSTITUTE with the following:

PVC products as manufactured or distributed by J-M Manufacturing Company shall not be used on the Contract for pressurized pipe **unless specified otherwise.**

SECTION 700 – EXTENDED REVEGETATION, MAINTENANCE, AND MONITORING

700-1.2 **Environmental Protection.** To the City Supplement, ADD the following:

The City will retain a qualified Project Biologist to perform biological monitoring work for this contract. You must coordinate your activities and Schedule with the activities and schedules of the Biologist Monitor.

Prior to any work between December 1 and July 31, the area of work must be surveyed by a qualified biologist for nesting raptor species. If the surveys determine that construction activities generating noise above 60 dB(A) will occur within 300 ft of an active copper's Hawk nest, 900 feet of a Northern harrier nest, or within 100 ft of any raptor nest, all work shall be suspended until the nests area no longer active or until the appropriate measures are in place to avoid disturbance to nesting raptors or reduce noise levels to below 60 dB(A). The contractor shall be responsible for securing a consultant to perform the noise testing or elect to suspend work until the nesting activity has ceased.

No construction work generating noise above 60 dB(A) will be allowed between March 1 and August 15. If work will occur after March 1, the contractor will be responsible for implementing any measures necessary to reduce noise levels to below 60 dB(A) or existing ambient noise levels within 500 ft of the project.

SECTION 705 – WATER DISCHARGES

705-2.6.1 **General.** Paragraph (3), CORRECT reference to Section 803 to read “Section 703.”

705-2.6.3 **Community Health and Safety Plan.** To the City Supplement, DELETE in its entirety and SUBSTITUTE with the following:

705-2.6.3 **Community Health and Safety Plan.** See 703-2, “Community Health and Safety Plan.”

SECTION 707 – RESOURCE DISCOVERIES

ADD:

707-1.1 **Environmental Document.** The City of San Diego Environmental Analysis Section (EAS) of the Development Services Department has determined the project activity to be exempt from CEQA. See Appendix A for the Notice of Exemption.

END OF SUPPLEMENTARY SPECIAL PROVISIONS (SSP)

SUPPLEMENTARY SPECIAL PROVISIONS

APPENDICES

APPENDIX A

Notice of Exemption

NOTICE OF EXEMPTION

(Check one or both)

TO: X RECORDER/COUNTY CLERK
P.O. BOX 1750, MS A-33
1600 PACIFIC HWY, ROOM 260
SAN DIEGO, CA 92101-2422
 OFFICE OF PLANNING AND RESEARCH
1400 TENTH STREET, ROOM 121
SACRAMENTO, CA 95814

FROM: CITY OF SAN DIEGO
DEVELOPMENT SERVICES DEPARTMENT
1222 FIRST AVENUE, MS 501
SAN DIEGO, CA 92101

PROJECT NO.: **WBS # B-13174.02.06**

PROJECT TITLE: **On-Site Generation of Sodium Hypochlorite**

PROJECT LOCATION-SPECIFIC: The project is located within the Otay Water Treatment Plant Facility located at 1500 Wueste Road in Chula Vista on City of San Diego Public Utilities Department land. The treatment plant is located just west of the southwest corner of the Lower Otay Reservoir at the southern end of Wueste Road.

PROJECT LOCATION-CITY/COUNTY: Chula Vista, CA/ County of San Diego

DESCRIPTION OF NATURE AND PURPOSE OF THE PROJECT: The project includes the abandonment and removal of the existing gas chlorine system with the exception of existing chlorine building, which will be used to house the new generation facility. The project will include the installation of an on-site system for generation of hypochlorite. This system would include salt off-loading and storage, water softening, hypochlorite generators, hypochlorite storage, and chemical feed pumps. The project would also include installation of a new 3-6 foot retaining wall to provide containment for two proposed storage tanks. These would be located outside of the existing chlorine building within an existing paved area. Construction staging and access will be limited to developed areas of the treatment plant, which includes existing paved access roads.

NAME OF PUBLIC AGENCY APPROVING PROJECT: City of San Diego

NAME OF PERSON OR AGENCY CARRYING OUT PROJECT: City of San Diego, E&CP Dept/Mike Bajoua
525 B Street, Suite 750 (MS 908A)
San Diego, CA 92101
619 533-4628

EXEMPT STATUS: (CHECK ONE)

- (X) CATEGORICAL EXEMPTION: 15301 (EXISTING FACILITIES) AND 15303 (NEW CONSTRUCTION OR CONVERSION OF SMALL STRUCTURES)

REASONS WHY PROJECT IS EXEMPT: The City of San Diego has conducted an environmental review and determined that the project meets the criteria set forth in the State CEQA Guidelines Section 15301 (Existing Facilities), which allows for the demolition and minor alteration to existing structures or facilities that would involve negligible or no expansion of use and Section 15303 (New Construction or Conversion of Small Structures) which allows for new construction of small structures where the new structure will be located on the same site as the replaced structure and serve the same purpose with negligible expansion of use. The new structures will be located within the previously disturbed footprint of the existing structures and no sensitive resources would be impacted; and where the exceptions listed in Section 15300.2 would not apply.

LEAD AGENCY CONTACT PERSON: MYRA HERRMANN

TELEPHONE: 619-446-5372

IF FILED BY APPLICANT:

- 1. ATTACH CERTIFIED DOCUMENT OF EXEMPTION FINDING.
- 2. HAS A NOTICE OF EXEMPTION BEEN FILED BY THE PUBLIC AGENCY APPROVING THE PROJECT?
() YES () NO

IT IS HEREBY CERTIFIED THAT THE CITY OF SAN DIEGO HAS DETERMINED THE ABOVE ACTIVITY TO BE EXEMPT FROM CEQA



SENIOR PLANNER

October 18, 2013

SIGNATURE/TITLE

DATE

CHECK ONE:

(X) SIGNED BY LEAD AGENCY

DATE RECEIVED FOR FILING WITH COUNTY CLERK OR OPR:

() SIGNED BY APPLICANT

Request for Proposal (Rev. Nov. 2013)

APPENDIX B

Fire Hydrant Meter Program

CITY OF SAN DIEGO CALIFORNIA DEPARTMENT INSTRUCTIONS	NUMBER DI 55.27	DEPARTMENT Water Department
SUBJECT FIRE HYDRANT METER PROGRAM (FORMERLY: CONSTRUCTION METER PROGRAM)	PAGE 1 OF 10	EFFECTIVE DATE October 15, 2002
	SUPERSEDES DI 55.27	DATED April 21, 2000

1. **PURPOSE**

- 1.1 To establish a Departmental policy and procedure for issuance, proper usage and charges for fire hydrant meters.

2. **AUTHORITY**

- 2.1 All authorities and references shall be current versions and revisions.
- 2.2 San Diego Municipal Code (NC) Chapter VI, Article 7, Sections 67.14 and 67.15
- 2.3 Code of Federal Regulations, Safe Drinking Water Act of 1986
- 2.4 California Code of Regulations, Titles 17 and 22
- 2.5 California State Penal Code, Section 498B.0
- 2.6 State of California Water Code, Section 110, 500-6, and 520-23
- 2.7 Water Department Director

Reference

- 2.8 State of California Guidance Manual for Cross Connection Programs
- 2.9 American Water Works Association Manual M-14, Recommended Practice for Backflow Prevention
- 2.10 American Water Works Association Standards for Water Meters
- 2.11 U.S.C. Foundation for Cross Connection Control and Hydraulic Research Manual

3. **DEFINITIONS**

- 3.1 **Fire Hydrant Meter:** A portable water meter which is connected to a fire hydrant for the purpose of temporary use. (These meters are sometimes referred to as Construction Meters.)

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SUBJECT FIRE HYDRANT METER PROGRAM (FORMERLY: CONSTRUCTION METER PROGRAM)	PAGE 2 OF 10	EFFECTIVE DATE October 15, 2002
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- 3.2 **Temporary Water Use:** Water provided to the customer for no longer than twelve (12) months.
- 3.3 **Backflow Preventor:** A Reduced Pressure Principal Assembly connected to the outlet side of a Fire Hydrant Meter.

4. **POLICY**

- 4.1 The Water Department shall collect a deposit from every customer requiring a fire hydrant meter and appurtenances prior to providing the meter and appurtenances (see Section 7.1 regarding the Fees and Deposit Schedule). The deposit is refundable upon the termination of use and return of equipment and appurtenances in good working condition.
- 4.2 Fire hydrant meters will have a 2 ½" swivel connection between the meter and fire hydrant. The meter shall not be connected to the 4" port on the hydrant. All Fire Hydrant Meters issued shall have a Reduced Pressure Principle Assembly (RP) as part of the installation. Spanner wrenches are the only tool allowed to turn on water at the fire hydrant.
- 4.3 The use of private hydrant meters on City hydrants is prohibited, with exceptions as noted below. All private fire hydrant meters are to be phased out of the City of San Diego. All customers who wish to continue to use their own fire hydrant meters must adhere to the following conditions:
- a. Meters shall meet all City specifications and American Water Works Association (AWWA) standards.
 - b. Customers currently using private fire hydrant meters in the City of San Diego water system will be allowed to continue using the meter under the following conditions:
 1. The customer must submit a current certificate of accuracy and calibration results for private meters and private backflows annually to the City of San Diego, Water Department, Meter Shop.

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2. The meter must be properly identifiable with a clearly labeled serial number on the body of the fire hydrant meter. The serial number shall be plainly stamped on the register lid and the main casing. Serial numbers shall be visible from the top of the meter casing and the numbers shall be stamped on the top of the inlet casing flange.
3. All meters shall be locked to the fire hydrant by the Water Department, Meter Section (see Section 4.7).
4. All meters shall be read by the Water Department, Meter Section (see Section 4.7).
5. All meters shall be relocated by the Water Department, Meter Section (see Section 4.7).
6. These meters shall be tested on the anniversary of the original test date and proof of testing will be submitted to the Water Department, Meter Shop, on a yearly basis. If not tested, the meter will not be allowed for use in the City of San Diego.
7. All private fire hydrant meters shall have backflow devices attached when installed.
8. The customer must maintain and repair their own private meters and private backflows.
9. The customer must provide current test and calibration results to the Water Department, Meter Shop after any repairs.
10. When private meters are damaged beyond repair, these private meters will be replaced by City owned fire hydrant meters.

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11. When a private meter malfunctions, the customer will be notified and the meter will be removed by the City and returned to the customer for repairs. Testing and calibration results shall be given to the City prior to any re-installation.
 12. The register shall be hermetically sealed straight reading and shall be readable from the inlet side. Registration shall be in hundred cubic feet.
 13. The outlet shall have a 2 ½ “National Standards Tested (NST) fire hydrant male coupling.
 14. Private fire hydrant meters shall not be transferable from one contracting company to another (i.e. if a company goes out of business or is bought out by another company).
- 4.4 All fire hydrant meters and appurtenances shall be installed, relocated and removed by the City of San Diego, Water Department. All City owned fire hydrant meters and appurtenances shall be maintained by the City of San Diego, Water Department, Meter Services.
- 4.5 If any fire hydrant meter is used in violation of this Department Instruction, the violation will be reported to the Code Compliance Section for investigation and appropriate action. Any customer using a fire hydrant meter in violation of the requirements set forth above is subject to fines or penalties pursuant to the Municipal Code, Section 67.15 and Section 67.37.
- 4.6 Conditions and Processes for Issuance of a Fire Hydrant Meter**
- Process for Issuance
- a. Fire hydrant meters shall only be used for the following purposes:
 1. Temporary irrigation purposes not to exceed one year.

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2. Construction and maintenance related activities (see Tab 2).
 - b. No customer inside or outside the boundaries of the City of San Diego Water Department shall resell any portion of the water delivered through a fire hydrant by the City of San Diego Water Department.
 - c. The City of San Diego allows for the issuance of a temporary fire hydrant meter for a period not to exceed 12 months (365 days). An extension can only be granted in writing from the Water Department Director for up to 90 additional days. A written request for an extension by the consumer must be submitted at least 30 days prior to the 12 month period ending. No extension shall be granted to any customer with a delinquent account with the Water Department. No further extensions shall be granted.
 - d. Any customer requesting the issuance of a fire hydrant meter shall file an application with the Meter Section. The customer must complete a "Fire Hydrant Meter Application" (Tab 1) which includes the name of the company, the party responsible for payment, Social Security number and/or California ID, requested location of the meter (a detailed map signifying an exact location), local contact person, local phone number, a contractor's license (or a business license), description of specific water use, duration of use at the site and full name and address of the person responsible for payment.
 - e. At the time of the application the customer will pay their fees according to the schedule set forth in the Rate Book of Fees and Charges, located in the City Clerk's Office. All fees must be paid by check, money order or cashiers check, made payable to the City Treasurer. Cash will not be accepted.
 - f. No fire hydrant meters shall be furnished or relocated for any customer with a delinquent account with the Water Department.
 - g. After the fees have been paid and an account has been created, the

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meter shall be installed within 48 hours (by the second business day). For an additional fee, at overtime rates, meters can be installed within 24 hours (within one business day).

4.7 Relocation of Existing Fire Hydrant Meters

- a. The customer shall call the Fire Hydrant Meter Hotline (herein referred to as “Hotline”), a minimum of 24 hours in advance, to request the relocation of a meter. A fee will be charged to the existing account, which must be current before a work order is generated for the meter’s relocation.
- b. The customer will supply in writing the address where the meter is to be relocated (map page, cross street, etc). The customer must update the original Fire Hydrant Meter Application with any changes as it applies to the new location.
- c. Fire hydrant meters shall be read on a monthly basis. While fire hydrant meters and backflow devices are in service, commodity, base fee and damage charges, if applicable, will be billed to the customer on a monthly basis. If the account becomes delinquent, the meter will be removed.

4.8 Disconnection of Fire Hydrant Meter

- a. After ten (10) months a “Notice of Discontinuation of Service” (Tab 3) will be issued to the site and the address of record to notify the customer of the date of discontinuance of service. An extension can only be granted in writing from the Water Department Director for up to 90 additional days (as stated in Section 4.6C) and a copy of the extension shall be forwarded to the Meter Shop Supervisor. If an extension has not been approved, the meter will be removed after twelve (12) months of use.
- b. Upon completion of the project the customer will notify the Meter Services office via the Hotline to request the removal of the fire hydrant meter and appurtenances. A work order will be generated

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for removal of the meter.

- c. Meter Section staff will remove the meter and backflow prevention assembly and return it to the Meter Shop. Once returned to the Meter Shop the meter and backflow will be tested for accuracy and functionality.
- d. Meter Section Staff will contact and notify Customer Services of the final read and any charges resulting from damages to the meter and backflow or its appurtenance. These charges will be added on the customer's final bill and will be sent to the address of record. Any customer who has an outstanding balance will not receive additional meters.
- e. Outstanding balances due may be deducted from deposits and any balances refunded to the customer. Any outstanding balances will be turned over to the City Treasurer for collection. Outstanding balances may also be transferred to any other existing accounts.

5. **EXCEPTIONS**

- 5.1 Any request for exceptions to this policy shall be presented, in writing, to the Customer Support Deputy Director, or his/her designee for consideration.

6. **MOBILE METER**

- 6.1 Mobile meters will be allowed on a case by case basis. All mobile meters will be protected by an approved backflow assembly and the minimum requirement will be a Reduced Pressure Principal Assembly. The two types of Mobile Meters are vehicle mounted and floating meters. Each style of meters has separate guidelines that shall be followed for the customer to retain service and are described below:

- a) **Vehicle Mounted Meters:** Customer applies for and receives a City owned Fire Hydrant Meter from the Meter Shop. The customer mounts the meter on the vehicle and brings it to the Meter Shop for

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inspection. After installation is approved by the Meter Shop the vehicle and meter shall be brought to the Meter Shop on a monthly basis for meter reading and on a quarterly basis for testing of the backflow assembly. Meters mounted at the owner's expense shall have the one year contract expiration waived and shall have meter or backflow changed if either fails.

b) **Floating Meters:** Floating Meters are meters that are not mounted to a vehicle. **(Note: All floating meters shall have an approved backflow assembly attached.)** The customer shall submit an application and a letter explaining the need for a floating meter to the Meter Shop. The Fire Hydrant Meter Administrator, after a thorough review of the needs of the customer, (i.e. number of jobsites per day, City contract work, lack of mounting area on work vehicle, etc.), may issue a floating meter. At the time of issue, it will be necessary for the customer to complete and sign the "Floating Fire Hydrant Meter Agreement" which states the following:

- 1) The meter will be brought to the Meter Shop at 2797 Caminito Chollas, San Diego on the third week of each month for the monthly read by Meter Shop personnel.
- 2) Every other month the meter will be read and the backflow will be tested. This date will be determined by the start date of the agreement.

If any of the conditions stated above are not met the Meter Shop has the right to cancel the contract for floating meter use and close the account associated with the meter. The Meter Shop will also exercise the right to refuse the issuance of another floating meter to the company in question.

Any Fire Hydrant Meter using reclaimed water shall not be allowed use again with any potable water supply. The customer shall incur the cost of replacing the meter and backflow device in this instance.

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	SUPERSEDES DI 55.27	DATED April 21, 2000

7. **FEE AND DEPOSIT SCHEDULES**

7.1 **Fees and Deposit Schedules:** The fees and deposits, as listed in the Rate Book of Fees and Charges, on file with the Office of the City Clerk, are based on actual reimbursement of costs of services performed, equipment and materials. These deposits and fees will be amended, as needed, based on actual costs. Deposits, will be refunded at the end of the use of the fire hydrant meter, upon return of equipment in good working condition and all outstanding balances on account are paid. Deposits can also be used to cover outstanding balances.

All fees for equipment, installation, testing, relocation and other costs related to this program are subject to change without prior notification. The Mayor and Council will be notified of any future changes.

8. **UNAUTHORIZED USE OF WATER FROM A HYDRANT**

8.1 Use of water from any fire hydrant without a properly issued and installed fire hydrant meter is theft of City property. Customers who use water for unauthorized purposes or without a City of San Diego issued meter will be prosecuted.

8.2 If any unauthorized connection, disconnection or relocation of a fire hydrant meter, or other connection device is made by anyone other than authorized Water Department personnel, the person making the connection will be prosecuted for a violation of San Diego Municipal Code, Section 67.15. In the case of a second offense, the customer's fire hydrant meter shall be confiscated and/or the deposit will be forfeited.

8.3 Unauthorized water use shall be billed to the responsible party. Water use charges shall be based on meter readings, or estimates when meter readings are not available.

8.4 In case of unauthorized water use, the customer shall be billed for all applicable charges as if proper authorization for the water use had been obtained, including but not limited to bi-monthly service charges, installation charges and removal charges.

CITY OF SAN DIEGO CALIFORNIA DEPARTMENT INSTRUCTIONS	NUMBER DI 55.27	DEPARTMENT Water Department
SUBJECT FIRE HYDRANT METER PROGRAM (FORMERLY: CONSTRUCTION METER PROGRAM)	PAGE 10 OF 10	EFFECTIVE DATE October 15, 2002
	SUPERSEDES DI 55.27	DATED April 21, 2000

- 8.5 If damage occurs to Water Department property (i.e. fire hydrant meter, backflow, various appurtenances), the cost of repairs or replacements will be charged to the customer of record (applicant).

**Larry Gardner
Water Department Director**

- Tabs: 1. Fire Hydrant Meter Application
2. Construction & Maintenance Related Activities With No Return To Sewer
3. Notice of Discontinuation of Service

APPENDIX

Administering Division: Customer Support Division

Subject Index: Construction Meters
Fire Hydrant
Fire Hydrant Meter Program
Meters, Floating or Vehicle Mounted
Mobile Meter
Program, Fire Hydrant Meter

Distribution: DI Manual Holders



Application for Fire Hydrant Meter (EXHIBIT A)

(For Office Use Only)

NS REQ	FAC#
DATE	BY

METER SHOP (619) 527-7449

Application Date	Requested Install Date:
------------------	-------------------------

Meter Information

Fire Hydrant Location: (Attach Detailed Map//Thomas Bros. Map Location or Construction drawing.) <u>Zip:</u>	<u>T.B.</u>	<u>G.B. (CITY USE)</u>
Specific Use of Water:		
Any Return to Sewer or Storm Drain, If so, explain:		
Estimated Duration of Meter Use: <input type="text"/>	<input type="checkbox"/>	Check Box if Reclaimed Water

Company Information

Company Name:			
Mailing Address:			
City:	State:	Zip:	Phone: ()
*Business license#		*Contractor license#	
A Copy of the Contractor's license OR Business License is required at the time of meter issuance.			
Name and Title of Billing Agent: <small>(PERSON IN ACCOUNTS PAYABLE)</small>			Phone: ()
Site Contact Name and Title:			Phone: ()
Responsible Party Name:			Title:
Cal ID#			Phone: ()
Signature:		Date:	
Guarantees Payment of all Charges Resulting from the use of this Meter. Insures that employees of this Organization understand the proper use of Fire Hydrant Meter			

Fire Hydrant Meter Removal Request	Requested Removal Date:
Provide Current Meter Location if Different from Above:	
Signature:	Title: Date:
Phone: ()	Pager: ()

<input type="checkbox"/> City Meter	<input type="checkbox"/> Private Meter
Contract Acct #:	Deposit Amount: \$ 936.00 Fees Amount: \$ 62.00
Meter Serial #	Meter Size: 05 Meter Make and Style: 6-7
Backflow #	Backflow Size: Backflow Make and Style:
Name: Request for Proposal (Rev. Nov. 2013)	Signature: Date: 112 Page

WATER USES WITHOUT ANTICIPATED CHARGES FOR RETURN TO SEWER

Auto Detailing
Backfilling
Combination Cleaners (Vactors)
Compaction
Concrete Cutters
Construction Trailers
Cross Connection Testing
Dust Control
Flushing Water Mains
Hydro Blasting
Hydro Seeing
Irrigation (for establishing irrigation only; not continuing irrigation)
Mixing Concrete
Mobile Car Washing
Special Events
Street Sweeping
Water Tanks
Water Trucks
Window Washing

Note:

1. If there is any return to sewer or storm drain, then sewer and/or storm drain fees will be charges.

Date

Name of Responsible Party
Company Name and Address
Account Number: _____

Subject: Discontinuation of Fire Hydrant Meter Service

Dear Water Department Customer:

The authorization for use of Fire Hydrant Meter # _____, located at *(Meter Location Address)* ends in 60 days and will be removed on or after *(Date Authorization Expires)*. Extension requests for an additional 90 days must be submitted in writing for consideration 30 days prior to the discontinuation date. If you require an extension, please contact the Water Department, or mail your request for an extension to:

City of San Diego
Water Department
Attention: Meter Services
2797 Caminito Chollas
San Diego, CA 92105-5097

Should you have any questions regarding this matter, please call the Fire Hydrant Hotline at (619) _____ - _____.

Sincerely,

Water Department

APPENDIX C

Materials Typically Accepted by Certificate of Compliance

Materials Typically Accepted by Certificate of Compliance

1. Soil amendment
2. Fiber mulch
3. PVC or PE pipe up to 16 inch diameter
4. Stabilizing emulsion
5. Lime
6. Preformed elastomeric joint seal
7. Plain and fabric reinforced elastomeric bearing pads
8. Steel reinforced elastomeric bearing pads
9. Waterstops (Special Condition)
10. Epoxy coated bar reinforcement
11. Plain and reinforcing steel
12. Structural steel
13. Structural timber and lumber
14. Treated timber and lumber
15. Lumber and timber
16. Aluminum pipe and aluminum pipe arch
17. Corrugated steel pipe and corrugated steel pipe arch
18. Structural metal plate pipe arches and pipe arches
19. Perforated steel pipe
20. Aluminum underdrain pipe
21. Aluminum or steel entrance tapers, pipe downdrains, reducers, coupling bands and slip joints
22. Metal target plates
23. Paint (traffic striping)
24. Conductors
25. Painting of electrical equipment
26. Electrical components
27. Engineering fabric
28. Portland Cement
29. PCC admixtures
30. Minor concrete, asphalt
31. Asphalt (oil)
32. Liquid asphalt emulsion
33. Epoxy

APPENDIX D

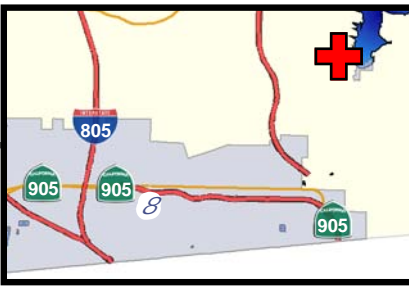
Sample City Invoice

City of San Diego, Field Engineering Div., 9485 Aero Drive, SD CA 92123						Contractor's Name:					
Project Name:						Contractor's Address:					
SAP No. (WBS/IO/CC)											
City Purchase Order No.						Contractor's Phone #:			Invoice No.		
Resident Engineer (RE):						Contractor's Fax #:			Invoice Date:		
RE Phone#:			RE Fax#:			Contact Name:			Billing Period:		
Item #	Item Description	Contract Authorization				Previous Estimate		This Estimate		Totals to Date	
		Unit	Qty	Price	Extension	%/QTY	Amount	% / QTY	Amount	% / QTY	Amount
1	2 Parallel 4" PVC C900	LF	1,380	\$34.00	\$46,920.00						
2	48" Primary Steel Casing	LF	500	\$1,000.00	\$500,000.00						
3	2 Parallel 12" Secondary Steel	LF	1,120	\$53.00	\$59,360.00						
4	Construction and Rehab of PS 49	LS	1	\$150,000.00	\$150,000.00						
5	Demo	LS	1	\$14,000.00	\$14,000.00						
6	Install 6' High Chain Link Fence	LS	1	\$5,600.00	\$5,600.00						
7	General Site Restoration	LS	1	\$3,700.00	\$3,700.00						
8	10" Gravity Sewer	LF	10	\$292.00	\$2,920.00						
9	4" Blow Off Valves	EA	2	\$9,800.00	\$19,600.00						
10	Bonds	LS	1	\$16,000.00	\$16,000.00						
11	Field Orders	AL	1	80,000	\$80,000.00						
11.1	Field Order 1	LS	5,500	\$1.00	\$5,500.00						
11.2	Field Order 2	LS	7,500	\$1.00	\$7,500.00						
11.3	Field Order 3	LS	10,000	\$1.00	\$10,000.00						
11.4	Field Order 4	LS	6,500	\$1.00	\$6,500.00						
12	Certified Payroll	LS	1	\$1,400.00	\$1,400.00						
CHANGE ORDERS											
Change Order 1			4,890								
Items 1-4					\$11,250.00						
Item 5-Deduct Bid Item 3		LF	120	-\$53.00	(\$6,360.00)						
Change Order 2			160,480								
Items 1-3					\$95,000.00						
Item 4 Deduct Bid Item 1		LF	380	-\$340.00	(\$12,920.00)						
Item 5-Encrease bid Item 9		LF	8	\$9,800.00	\$78,400.00						
Change Order 3 (Close Out)			-121,500								
Item 1 Deduct Bid Item 3			53	-500.00	(\$26,500.00)						
Item 2 Deduct Bid Item 4		LS	-1	45,000.00	(\$45,000.00)						
Items 3-9			1	-50,500.00	(\$50,500.00)						
SUMMARY								Total This	\$ -	Total Billed	\$0.00
A. Original Contract Amount						Retention and/or Escrow Payment Schedule					
B. Approved Change Order 1 Thru 3						Total Retention Required as of this billing					
C. Total Authorized Amount (A+B)						Previous Retention Withheld in PO or in Escrow					
D. Total Billed to Date						Add'l Amt to Withhold in PO/Transfer in Escrow:					
E. Less Total Retention (5% of D)						Amt to Release to Contractor from PO/Escrow:					
F. Less Total Previous Payments											
G. Payment Due Less Retention						Contractor Signature and Date:					
H. Remaining Authorized Amount											

APPENDIX E

Location Map

THIS MAP/DATA IS PROVIDED WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OR MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. Note: This product may contain information reproduced with permission granted by RAND McNALLY & COMPANY to SanGIS. This map is copyrighted by RAND McNALLY & COMPANY. It is unlawful to copy or reproduce all or any part thereof, whether for personal use or resale, without the prior, written permission of RAND McNALLY & COMPANY.



PREDESIGN LOCATION MAP

ON-SITE GENERATION OF SODIUM HYPOCHLORITE AT OTAY WTP



SENIOR ENGINEER
Neviene Antuon
619-533-4852

PROJECT ENGINEER
Ryan Greek
619-533-3767

PROJECT MANAGER
Julian Espinoza
619-533-4384

PROJECT DRAFTER
Susan Griebenow
619-533-3652

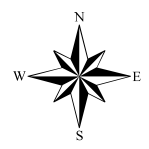
Project Implementation and Technical Services (PITS)
CIP Preliminary Engineering and Program Coordination



Otay Water Treatment Plant
1500 Wueste Road
San Diego, Ca 91915

Legend

Project Location



No Scale

S:\PITS\PITS-CIP-Preliminary-Engineering-and-Program-Coordination\Drafting\Water & Sewer Projects\Water Projects\On-Site Gen Of Sodium Hypochlorite_Otay WTP\CIP Tracking\PDFs



APPENDIX F

Hydrostatic Discharge Form

APPENDIX

Hydrostatic Discharge Requirements Certification (Discharge Events < 500,000 gpd)

All discharge activities related to this project comply with the Regional Water Quality Control Board (RWQCB) Order No. 2002-0020, General Permit for Discharges of Hydrostatic Test Water and Potable Water to Surface Water and Storm Drains as referenced by (http://www.swrcb.ca.gov/rwqcb9/board_decisions/adopted_orders/2002/2002_0020.shtml), and as follows:

Discharged water has been dechlorinated to below 0.1 (mg/l) level; and effluent has been maintained between 6 and 9 (PH) based on:							<i>is discharge within acceptable limits?</i>		<i>Comment</i>
Event #	Discharge Date & Amount (GAL)	Discharge Time	Meter Readings (at source)	Test Results (Chlorine / PH)	Name of Personnel Conducting Tests (print)	*signature of personnel	yes	no	
	Date	Start:	Start:						
	Amt:	End:	End:						
	Date	Start:	Start:						
	Amt:	End:	End:						
	Date	Start:	Start:						
	Amt:	End:	End:						
	Date	Start:	Start:						
	Amt:	End:	End:						
	Date	Start:	Start:						
	Amt:	End:	End:						
	Date	Start:	Start:						
	Amt:	End:	End:						
	Date	Start:	Start:						
	Amt:	End:	End:						
	Date	Start:	Start:						
	Amt:	End:	End:						
	Date	Start:	Start:						
	Amt:	End:	End:						
	Date	Start:	Start:						
	Amt:	End:	End:						

**By signing, I certify that all of the statements and conditions for hydrostatic discharge events are correct.*

Project Name: _____

Work Order No.(s): _____

Have any thresholds have been exceeded? Per Order No. 2002-0020, would this be a reportable discharge and must be reported **within 24 hours** of the event? [Reportable discharge would include violation of maximum gallons per day, any upset which exceeds any effluent limit]

APPENDIX G

Hazardous Labels/Forms

SAMPLE HAZARDOUS WASTE LABEL

HAZARDOUS WASTE

STATE AND FEDERAL LAW PROHIBITS IMPROPER DISPOSAL
IF FOUND, CONTACT THE NEAREST POLICE, OR PUBLIC SAFETY
AUTHORITY, OR THE U.S. ENVIRONMENTAL PROTECTION AGENCY
OR THE CALIFORNIA DEPARTMENT OF HEALTH SERVICES

GENERATOR NAME _____

ADDRESS _____ 24 HR. PHONE () _____

CITY _____ STATE _____ ZIP _____

EPA ID NO. _____ MANIFEST DOCUMENT NO. _____

EPA WASTE NO. _____ CA WASTE NO. _____ ACCUMULATION START DATE _____ / /

CONTENTS, COMPOSITION _____

PROPER DOT SHIPPING NAME _____

TECHNICAL NAME (S) _____

UN/NA NO. WITH PREFIX _____

PHYSICAL STATE HAZARDOUS PROPERTIES FLAMMABLE TOXIC
 SOLID LIQUID CORROSIVE REACTIVE OTHER _____

HANDLE WITH CARE!
CONTAINS HAZARDOUS OR TOXIC WASTES

INCIDENT/RELEASE ASSESSMENT FORM ¹

If you have an emergency, Call 911

Handlers of hazardous materials are required to report releases. The following is a tool to be used for assessing if a release is reportable. Additionally, a non-reportable release incident form is provided to document why a release is not reported (see back).

Questions for Incident Assessment:

	YES	NO
1. Was anyone killed or injured, or did they require medical care or admitted to a hospital for observation?	<input type="checkbox"/>	<input type="checkbox"/>
2. Did anyone, other than employees in the immediate area of the release, evacuate?	<input type="checkbox"/>	<input type="checkbox"/>
3. Did the release cause off-site damage to public or private property?	<input type="checkbox"/>	<input type="checkbox"/>
4. Is the release greater than or equal to a reportable quantity (RQ)?	<input type="checkbox"/>	<input type="checkbox"/>
5. Was there an uncontrolled or unpermitted release to the air?	<input type="checkbox"/>	<input type="checkbox"/>
6. Did an uncontrolled or unpermitted release escape secondary containment, or extend into any sewers, storm water conveyance systems, utility vaults and conduits, wetlands, waterways, public roads, or off site?	<input type="checkbox"/>	<input type="checkbox"/>
7. Will control, containment, decontamination, and/or clean up require the assistance of federal, state, county, or municipal response elements?	<input type="checkbox"/>	<input type="checkbox"/>
8. Was the release or threatened release involving an unknown material or contains an unknown hazardous constituent?	<input type="checkbox"/>	<input type="checkbox"/>
9. Is the incident a threatened release (a condition creating a substantial probability of harm that requires immediate action to prevent, reduce, or mitigate damages to persons, property, or the environment)?	<input type="checkbox"/>	<input type="checkbox"/>
10. Is there an increased potential for secondary effects including fire, explosion, line rupture, equipment failure, or other outcomes that may endanger or cause exposure to employees, the general public, or the environment?	<input type="checkbox"/>	<input type="checkbox"/>

If the answer is YES to any of the above questions – report the release to the California Office of Emergency Services at 800-852-7550 and the local CUPA daytime: (619) 338-2284, after hours: (858) 565-5255. Note: other state and federal agencies may require notification depending on the circumstances.

Call 911 in an emergency

If all answers are NO, complete a Non Reportable Release Incident Form (page 2 of 2) and keep readily available. Documenting why a “no” response was made to each question will serve useful in the event questions are asked in the future, and to justify not reporting to an outside regulatory agency.

If in doubt, report the release.

¹ This document is a guide for accessing when hazardous materials release reporting is required by Chapter 6.95 of the California Health and Safety Code. It does not replace good judgment, Chapter 6.95, or other state or federal release reporting requirements.

NON REPORTABLE RELEASE INCIDENT FORM

1. RELEASE AND RESPONSE DESCRIPTION

Incident # _____

Date/Time Discovered	Date/Time Discharge	Discharge Stopped <input type="checkbox"/> Yes <input type="checkbox"/> No
Incident Date / Time:		
Incident Business / Site Name:		
Incident Address:		
Other Locators (Bldg, Room, Oil Field, Lease, Well #, GIS)		
Please describe the incident and indicate specific causes and area affected. Photos Attached?: <input type="checkbox"/> Yes <input type="checkbox"/> No		
Indicate actions to be taken to prevent similar releases from occurring in the future.		

2. ADMINISTRATIVE INFORMATION

Supervisor in charge at time of incident:	Phone:
Contact Person:	Phone:

3. CHEMICAL INFORMATION

Chemical	Quantity <input type="checkbox"/> GAL <input type="checkbox"/> LBS <input type="checkbox"/> FT ³
Chemical	Quantity <input type="checkbox"/> GAL <input type="checkbox"/> LBS <input type="checkbox"/> FT ³
Chemical	Quantity <input type="checkbox"/> GAL <input type="checkbox"/> LBS <input type="checkbox"/> FT ³
Clean-Up Procedures & Timeline:	
Completed By:	Phone:
Print Name:	Title:

EMERGENCY RELEASE FOLLOW - UP NOTICE REPORTING FORM

A	BUSINESS NAME	FACILITY EMERGENCY CONTACT & PHONE NUMBER () -	
B	INCIDENT DATE MO DAY YR	TIME OES NOTIFIED (use 24 hr time)	OES CONTROL NO.
C	INCIDENT ADDRESS LOCATION	CITY / COMMUNITY	COUNTY ZIP
D	CHEMICAL OR TRADE NAME (print or type)		CAS Number
D	CHECK IF CHEMICAL IS LISTED IN 40 CFR 355, APPENDIX A <input type="checkbox"/>	CHECK IF RELEASE REQUIRES NOTIFICATION UNDER 42 U.S.C. Section 9603 (a) <input type="checkbox"/>	
D	PHYSICAL STATE CONTAINED <input type="checkbox"/> SOLID <input type="checkbox"/> LIQUID <input type="checkbox"/> GAS	PHYSICAL STATE RELEASED <input type="checkbox"/> SOLID <input type="checkbox"/> LIQUID <input type="checkbox"/> GAS	QUANTITY RELEASED
D	ENVIRONMENTAL CONTAMINATION <input type="checkbox"/> AIR <input type="checkbox"/> WATER <input type="checkbox"/> GROUND <input type="checkbox"/> OTHER	TIME OF RELEASE	DURATION OF RELEASE — DAYS — HOURS — MINUTES
E	ACTIONS TAKEN		
F	KNOWN OR ANTICIPATED HEALTH EFFECTS (Use the comments section for addition information)		
	<input type="checkbox"/> ACUTE OR IMMEDIATE (explain) _____		
	<input type="checkbox"/> CHRONIC OR DELAYED (explain) _____		
	<input type="checkbox"/> NOTKNOWN (explain) _____		
G	ADVICE REGARDING MEDICAL ATTENTION NECESSARY FOR EXPOSED INDIVIDUALS		
H	COMMENTS (INDICATE SECTION (A - G) AND ITEM WITH COMMENTS OR ADDITIONAL INFORMATION)		
I	CERTIFICATION: I certify under penalty of law that I have personally examined and I am familiar with the information submitted and believe the submitted information is true, accurate, and complete.		
	REPORTING FACILITY REPRESENTATIVE (print or type) _____		
	SIGNATURE OF REPORTING FACILITY REPRESENTATIVE _____		DATE: _____

EMERGENCY RELEASE FOLLOW-UP NOTICE REPORTING FORM INSTRUCTIONS

GENERAL INFORMATION:

Chapter 6.95 of Division 20 of the California Health and Safety Code requires that written emergency release follow-up notices prepared pursuant to 42 U.S.C. § 11004, be submitted using this reporting form. Non-permitted releases of reportable quantities of Extremely Hazardous Substances (listed in 40 CFR 355, appendix A) or of chemicals that require release reporting under section 103(a) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 [42 U.S.C. § 9603(a)] must be reported on the form, as soon as practicable, but no later than 30 days, following a release. The written follow-up report is required in addition to the verbal notification.

BASIC INSTRUCTIONS:

- The form, when filled out, reports follow-up information required by 42 U.S.C § 11004. Ensure that all information requested by the form is provided as completely as possible.
- If the incident involves reportable releases of more than one chemical, prepare one report form for each chemical released.
- If the incident involves a series of separate releases of chemical(s) at different times, the releases should be reported on separate reporting forms.

SPECIFIC INSTRUCTIONS:

Block A: Enter the name of the business and the name and phone number of a contact person who can provide detailed facility information concerning the release.

Block B: Enter the date of the incident and the time that verbal notification was made to OES. The OES control number is provided to the caller by OES at the time verbal notification is made. Enter this control number in the space provided.

Block C: Provide information pertaining to the location where the release occurred. Include the street address, the city or community, the county and the zip code.

Block D: Provide information concerning the specific chemical that was released. Include the chemical or trade name and the Chemical Abstract Service (CAS) number. Check all categories that apply. Provide best available information on quantity, time and duration of the release.

Block E: Indicate all actions taken to respond to and contain the release as specified in 42 U.S.C. § 11004(c).

Block F: Check the categories that apply to the health effects that occurred or could result from the release. Provide an explanation or description of the effects in the space provided. Use Block H for additional comments/information if necessary to meet requirements specified in 42 U.S.C. § 11004(c).

Block G: Include information on the type of medical attention required for exposure to the chemical released. Indicate when and how this information was made available to individuals exposed and to medical personnel, if appropriate for the incident, as specified in 42 U.S.C. § 11004(c).

Block H: List any additional pertinent information.

Block I: Print or type the name of the facility representative submitting the report. Include the official signature and the date that the form was prepared.

MAIL THE COMPLETED REPORT TO:

**State Emergency Response Commission (SERC)
Attn: Section 304 Reports
Hazardous Materials Unit
3650 Schriever Avenue
Mather, CA 95655**

NOTE: Authority cited: Sections 25503, 25503.1 and 25507.1, Health and Safety Code. Reference: Sections 25503(b)(4), 25503.1, 25507.1, 25518 and 25520, Health and Safety Code.

ATTACHMENT F
INTENTIONALLY LEFT BLANK

ATTACHMENT G
PROPOSAL SUBMITTAL REQUIREMENTS AND SELECTION
CRITERIA

ATTACHMENT G

PROPOSAL SUBMITTAL REQUIREMENTS AND SELECTION CRITERIA

PUBLIC WORKS DEPARTMENT

Proposals submitted in response to this RFP shall be in the following order and shall include:

1. Addenda to this RFP (PASS/FAIL)

- 1.1. The Design-Builder shall confirm the receipt of all addenda issued to this RFP. Failure to acknowledge all addenda issued, will result in the Proposal being considered **non-responsive** and ineligible for further consideration.
- 1.2. The Design-Builders are not required to include copies of the actual addenda in its Proposal.

2. Exceptions to this RFP (PASS/FAIL)

- 2.1. If the Design-Builder takes exception(s) to any portion of the RFP and its exhibits, the specific portion of the RFP or exhibits to which exception is taken shall be identified and explained to the City in writing a minimum of 10 days prior to the date established for submittal of the Technical Proposal.
- 2.2. Exceptions taken after the stipulated period to this RFP may be cause for rejection of the Proposal as being **non-responsive**. The City reserves the right to waive exception(s) as it deems in the best interests of the City.

3. Executive Summary (5 Points Max)

- 3.1. Include a 1- to 2-page overview of the entire Proposal describing the highlights of the Proposal.

4. Project Team (5 Points Max)

- 4.1. Describe the proposed management plan for this Project. Describe the strength of key proposed construction and technical personnel, Subcontractors, and Subconsultants, including, but not limited to the following disciplines:
 - 4.1.1. Civil
 - 4.1.2. Structural
 - 4.1.3. Mechanical
 - 4.1.4. Electrical
 - 4.1.5. Instrumentation and Controls
 - 4.1.6. Geotechnical
 - 4.1.7. Corrosion

5. Technical Approach and Design Concept (30 Points Max)

- 5.1.** Describe in detail the proposed design concept for this Project. Include detailed descriptions, conceptual design drawings, schematics, a list of major equipment, and any other information deemed necessary to allow the City to make an informed evaluation of the Design-Builder's technical approach. The completeness and technical merit of the design concept will be evaluated.
- 5.2.** The Technical report shall address the contents and requirements in Attachment A. The following elements shall be included but not limited to in this Technical Proposal:
- a. Water Treatment Plant System: Describe the proposed general approach to:
 - 1. Sodium Hypochlorite generators, storage tanks and containment structures for Otay Water Treatment Plant.
 - 2. Appurtenance equipments, valves, piping, metal plates and strip.
 - 3. Structural concrete pads/ foundations for storage tanks and generators.
 - 4. Instrument and Controls to integrate the project into the existing SCADA system of the water treatment plant
 - b. The Design-Builder shall submit a QA/QC Plan specifically developed for this Project. The QA/QC Plan shall address the design requirements of the contents of Attachment A.
 - c. Best Management Practices including Water Pollution control Plan (WPCP), and BMP's during construction
 - d. Environmental testing, Monitoring and Mitigation including Handling of Hazardous materials.
 - e. Corrosion protection Corrosion control methods to be considered included but not limited to design, coatings, material selection, and cathodic protection.
 - f. Proposed Design Schedule: Outline the proposed design schedule, including sequencing of each major design component (30%, 90% and final design) and proposed durations. Design-Builder shall provide in terms of calendar days from NTP for the following items but not limited to:
 - 1. Chemical Feed Pumps and associated piping
 - 2. Chemical Feed Pump layout and any proposed structural modifications.
 - 3. Stand-by power
 - 4. Ventilation system modifications if necessary
 - 5. Instrumentation and controls

6. Construction Plan (25 Points Max)

- 6.1. Describe the proposed construction plan for this Project, including the following, at a minimum:
 - 6.1.1. Construction approach and methods
 - 6.1.2. Plan for operation of facility during construction
 - 6.1.3. Plan for phasing of construction activities
 - 6.1.4. General plan for functional testing and start-up.
 - 6.1.5. Proposed safety program
 - 6.1.6. Proposed emergency response plan
 - 6.1.7. Proposed construction schedule
 - 6.1.8. Traffic Control Management

7. Extended Performance Phase (10 Points Max)

- 7.1. Describe the proposed plan for operations and maintenance of the facility after start-up, including the following, at a minimum:
 - 7.1.1. Proposed Maintenance Plan
 - 7.1.2. Proposed Operations Plan
 - 7.1.3. Proposed methods of coordination with Owner’s work force
 - 7.1.4. Proposed Operator Training Program

8. Equal Employment and Contracting Opportunity (25 Points Max)

- 8.1. Failure to submit the required EOCP information will result in Proposal being determined as **non-responsive**.
- 8.2. Subcontractor Documentation
 - 8.2.1. The Design-Builder shall, at a minimum, provide with its Technical Proposal a listing of at least 3 of the largest Subcontractors (constructors only) for the Project and all other Subcontractors (design professionals, etc.) that are known at the time it submits its Proposal using form AA15 and AA30. Note: Subcontractors include design professionals, as well.
 - 8.2.2. Any changes to the listing of the proposed Subcontractors that have occurred in the information, required data or documentation submitted in the SOQ shall be submitted in accordance this section, and shall be included in an attachment, which shall be entitled “Subcontractor Documentation” using forms AA15 and AA30.

- 8.2.3.** Work which requires Subcontractors that are not listed by Design-Builder at time of Award shall be let by Design-Builder in accordance with a competitive bidding process performed solely at Design-Builder’s expense. Design-Builder shall provide public notice of the availability of the Work to be subcontracted, obtain competitive bids, and provide a fixed date and time on which the subcontracted Work will be awarded. Subcontractors bidding on subcontracts pursuant to this provision shall be afforded the protection of all applicable laws, including Public Contract Code sections 4100 through 4114, inclusive.
- 8.2.4.** The Design-Builder may select Subcontractors and Suppliers in one of 3 competitive ways i.e., lowest responsible bidder, best value for price and qualifications, or highest qualifications. Prior to construction NTP, the Design-Builder shall do the following:
- 8.2.4.1.** Submit the selection method used to the City in accordance with 2-5.3, “Submittals.”
- 8.2.4.2.** Pre-qualify Subcontractors and Suppliers, in a manner at least as stringent as the City’s pre-qualification standards.
- 8.2.4.3.** Review the Subcontractors and Suppliers ultimately chosen to verify that that they have not been debarred and are in good standing as a licensed contractor in California.
- 8.2.5.** Open all Subcontract bids and provide to the City one copy without reservation or redaction. All records relevant to the award and performance of Subcontractors and Suppliers shall be public and provided to the City upon request and without redaction.
The City may administer bidding itself for Subcontractors and Suppliers, or to direct the bidding procedures to be used by the Design-Builder.
- 8.2.6.** The Design-Builder may use its corporate-generated subcontractor agreement to retain Subcontractors or Suppliers, provided the subcontractor agreement contains the terms required to be included in Subcontracts by this Contract.
- 8.2.7.** The points will be awarded according to the chart below, based upon actual subcontract award amounts, as set forth in the price proposals.

OUTCOME		MAXIMUM POSSIBLE POINTS
1	5% - 9% participation SLBE, ELBE, DVBE, or DBE	5
2	10%-14% participation SLBE, ELBE, DVBE or DBE	10
3	15%-19% participation SLBE, ELBE, DVBE or DBE	15

OUTCOME		MAXIMUM POSSIBLE POINTS
4	20%-24% participation SLBE, ELBE, DVBE or DBE	20
5	25% participation SLBE, ELBE, DVBE or DBE	25
In no case the points shall exceed 25.		

Total Points: 100

Proposals that do not contain the aforementioned components may be rejected as **non-responsive**. The Design-Builder's information and Proposal details provided during presentation will be part of the Proposal evaluation.

ATTACHMENT H

PROPOSAL FORMS

City of San Diego

CITY CONTACT

Contract Specialist: Claudia Abarca
Email: Cabarca@sandiego.gov
Phone No.: (619) 533-3439, Fax No.: 619-533-3633
M.Bajoua/BDoringo/egz



REQUEST FOR PROPOSAL (RFP)

FOR

SODIUM HYPOCHLORITE AT OTAY WATER TREATMENT PLANT DESIGN-BUILD CONTRACT

RFQ NO.: As-Needed Design-Build Service for the Engineering & Capital Projects Department – 5151DB
RFP NO.: K-14-1195-DBA-3
TASK ORDER NO.: 11DB07
SAP NO. (WBS/IO/CC): B-13174
CLIENT DEPARTMENT: 2013
COUNCIL DISTRICT: 8
PROJECT TYPE: BI

THIS CONTRACT IS SUBJECT TO THE FOLLOWING:

- THE CITY'S SUBCONTRACTING PARTICIPATION REQUIREMENTS FOR SLBE PROGRAM.
- PREVAILING WAGE RATES: STATE FEDERAL

PROPOSALS DUE:

12:00 NOON
FEBRUARY 26, 2014
CITY OF SAN DIEGO
PUBLIC WORKS CONTRACTING GROUP
1010 SECOND AVENUE, 14TH FLOOR, MS 614C
SAN DIEGO, CA 92101
ATTN: CONTRACT SPECIALIST

ATTACHMENT H SHALL BE SUBMITTED IN ITS ENTIRETY

PROPOSAL FORMS

Design-Builder's General Information

To the City of San Diego:

Pursuant to the "Request for Proposal", specifications, and requirements on file with the City Clerk, and subject to all provisions of the Charter and Ordinances of the City of San Diego and applicable laws and regulations of the United States and the State of California, the undersigned hereby proposes to furnish to the City of San Diego, complete at the prices stated herein, the items or services hereinafter mentioned. The undersigned further warrants that this proposal is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation; that the proposal is genuine and not collusive or sham; that the proposer has not directly or indirectly induced or solicited any other proposer to put in a false or sham proposal, and has not directly or indirectly colluded, conspired, connived, or agreed with any proposer or anyone else to put in a sham proposal, or that anyone shall refrain from proposing; that the proposer has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the proposal price of the proposer or any other proposer, or to fix any overhead, profit, or cost element of the proposal price, or of that of any other proposer, or to secure any advantage against the public body awarding the contract of anyone interested in the proposed contract; that all statements contained in the proposal are true; and, further, that the proposer has not, directly or indirectly, submitted his or her proposal price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, or paid, and will not pay, any fee to any corporation, partnership, company, association, organization, proposal depository, or to any member or agent thereof to effectuate a collusive or sham proposal. The undersigned proposer(s) further warrants that proposer(s) has thoroughly examined and understands the entire Contract Documents (plans and specifications) and the Proposal Documents therefore, and that by submitting said Proposal Documents as its proposal, proposer(s) acknowledges and is bound by the entire Contract Documents, including any addenda issued thereto, as such Contract Documents incorporated by reference in the Proposal Documents.

IF A SOLE OWNER OR SOLE CONTRACTOR SIGN HERE:

- (1) Name under which business is conducted _____
- (2) Signature (Given and surname) of proprietor _____
- (3) Place of Business (Street & Number) _____
- (4) City and State _____ Zip Code _____
- (5) Telephone No. _____ Facsimile No. _____
- (6) Email Address _____

IF A PARTNERSHIP, SIGN HERE:

- (1) Name under which business is conducted _____

PROPOSAL FORMS

(2) Name of each member of partnership, indicate character of each partner, general or special (limited):

(3) Signature (Note: Signature must be made by a general partner)

Full Name and Character of partner

(4) Place of Business (Street & Number) _____

(5) City and State _____ Zip Code _____


(6) Telephone No. _____ Facsimile No. _____

(7) Email Address _____

IF A CORPORATION, SIGN HERE:

(1) Name under which business is conducted Orion Construction Corporation

(2) Signature, with official title of officer authorized to sign for the corporation:



(Signature)

Richard Dowsing

(Printed Name)

President

(Title of Officer)

(Impress Corporate Seal Here)

(3) Incorporated under the laws of the State of California

(4) Place of Business (Street & Number) 2185 La Mirada Drive

(5) City and State Vista, CA Zip Code 92081

(6) Telephone No. (760) 597-9660 Facsimile No. (760) 597-9661

(7) Email Address richard@orionconstruction.com

PROPOSAL FORMS

THE FOLLOWING SECTIONS MUST BE FILLED IN BY ALL PROPOSERS:

In accordance with the "Request for Proposal", the proposer holds a California State Contractor's license for the following classification(s) to perform the work described in these specifications:

LICENSE CLASSIFICATION A, B, C-27, HAZ

LICENSE NO. 549309 EXPIRES 11/30/2014

This license classification must also be shown on the front of the proposal envelope. Failure to show license classification on the proposal envelope may cause return of the proposal unopened.

TAX IDENTIFICATION NUMBER (TIN): [REDACTED]

E-Mail Address: rob@orionconstruction.com

THIS PROPOSAL MUST BE NOTARIZED BELOW:

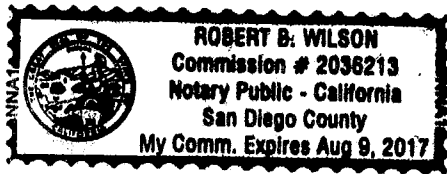
I certify, under penalty of perjury, that the representations made herein regarding my State Contractor's license number, classification and expiration date are true and correct.

Signature *[Handwritten Signature]* Title President

SUBSCRIBED AND SWORN TO BEFORE ME, THIS 2nd DAY OF APRIL, 2014

Notary Public in and for the County of SAN DIEGO, State of CALIFORNIA

[Handwritten Signature]
(NOTARIAL SEAL)



PROPOSAL FORMS

NON-COLLUSION AFFIDAVIT TO BE EXECUTED BY PROPOSER AND SUBMITTED WITH PROPOSAL UNDER 23 UNITED STATES CODE 112 AND PUBLIC CONTRACT CODE 7106

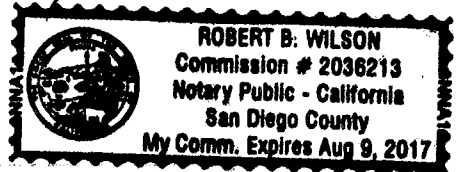
State of California)
County of San Diego) ss.

Richard Dowsing, being first duly sworn, deposes and says that he or she is President of the party making the foregoing proposal that the proposal is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation; that the proposal is genuine and not collusive or sham; that the proposer has not directly or indirectly induced or solicited any other proposer to put in a false or sham proposal, and has not directly or indirectly colluded, conspired, connived, or agreed with any proposer or anyone else to put in a sham proposal, or that anyone shall refrain from proposing; that the proposer has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the proposal price of the proposer or any other proposer, or to fix any overhead, profit, or cost element of the proposal price, or of that of any other proposer, or to secure any advantage against the public body awarding the contract of anyone interested in the proposed contract; that all statements contained in the proposal are true; and further, that the proposer has not, directly or indirectly, submitted his or her proposal price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, or paid, and will not pay, any fee to any corporation, partnership, company association, organization, proposal depository, or to any member or agent thereof to effectuate a collusive or sham proposal.

Signed: [Signature]
Title: President

Subscribed and sworn to before me this 2nd day of APRIL, 2014
[Signature]
Notary Public

(SEAL)



PROPOSAL FORMS

CONTRACTORS CERTIFICATION OF PENDING ACTIONS

As part of its bid or proposal (Non-Price Proposal in the case of Design-Build contracts), the Bidder shall provide to the City a list of all instances within the past 10 years where a complaint was filed or pending against the Bidder in a legal or administrative proceeding alleging that Bidder discriminated against its employees, subcontractors, vendors or suppliers, and a description of the status or resolution of that complaint, including any remedial action taken.

CHECK ONE BOX ONLY.

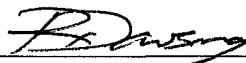
- The undersigned certifies that within the past 10 years the Bidder has NOT been the subject of a complaint or pending action in a legal administrative proceeding alleging that Bidder discriminated against its employees, subcontractors, vendors or suppliers.

- The undersigned certifies that within the past 10 years the Bidder has been the subject of a complaint or pending action in a legal administrative proceeding alleging that Bidder discriminated against its employees, subcontractors, vendors or suppliers. A description of the status or resolution of that complaint, including any remedial action taken and the applicable dates is as follows:

DATE OF CLAIM	LOCATION	DESCRIPTION OF CLAIM	LITIGATION (Y/N)	STATUS	RESOLUTION/REMEDIAL ACTION TAKEN

Contractor Name: Orion Construction Corporation

Certified By Richard Dowsing Title President
Name

 Date 04/01/2014
Signature

USE ADDITIONAL FORMS AS NECESSARY

PROPOSAL FORMS

**EQUAL BENEFITS ORDINANCE
CERTIFICATION OF COMPLIANCE**



For additional information, contact:
CITY OF SAN DIEGO
EQUAL BENEFITS PROGRAM
 202 C Street, MS 9A, San Diego, CA 92101
 Phone (619) 533-3948 Fax (619) 533-3220

COMPANY INFORMATION

Company Name: Orion Construction Corporation	Contact Name: Richard Dowsing
Company Address: 2185 La Mirada Drive, Vista, CA 92081	Contact Phone: (760) 597-9660
	Contact Email: rob@orionconstruction.com

CONTRACT INFORMATION

Contract Title: <u>SODIUM HYPOCHLORITE SYST. AT OTAY WTP</u>	Start Date: <u>7/2014</u>
Contract Number (if no number, state location): <u>K-14-1195-DBA-3</u>	End Date: <u>10/2015</u>

SUMMARY OF EQUAL BENEFITS ORDINANCE REQUIREMENTS

The Equal Benefits Ordinance [EBO] requires the City to enter into contracts only with contractors who certify they will provide and maintain equal benefits as defined in SDMC §22.4302 for the duration of the contract. To comply:

- Contractor shall offer equal benefits to employees with spouses and employees with domestic partners.
 - Benefits include health, dental, vision insurance; pension/401(k) plans; bereavement, family, parental leave; discounts, child care; travel/relocation expenses; employee assistance programs; credit union membership; or any other benefit.
 - Any benefit not offer an employee with a spouse, is not required to be offered to an employee with a domestic partner.
- Contractor shall post notice of firm's equal benefits policy in the workplace and notify employees at time of hire and during open enrollment periods.
- Contractor shall allow City access to records, when requested, to confirm compliance with EBO requirements.
- Contractor shall submit *EBO Certification of Compliance*, signed under penalty of perjury, prior to award of contract.

NOTE: This summary is provided for convenience. Full text of the EBO and Rules Implementing the EBO are available at www.sandiego.gov/administration.

CONTRACTOR EQUAL BENEFITS ORDINANCE CERTIFICATION

Please indicate your firm's compliance status with the EBO. The City may request supporting documentation.

I affirm **compliance** with the EBO because my firm (*contractor must select one reason*):

- Provides equal benefits to spouses and domestic partners.
- Provides no benefits to spouses or domestic partners.
- Has no employees.
- Has collective bargaining agreement(s) in place prior to January 1, 2011, that has not been renewed or expired.

I request the City's approval to pay affected employees a cash equivalent in lieu of equal benefits and verify my firm made a reasonable effort but is not able to provide equal benefits upon contract award. I agree to notify employees of the availability of a cash equivalent for benefits available to spouses but not domestic partners and to continue to make every reasonable effort to extend all available benefits to domestic partners.

It is unlawful for any contractor to knowingly submit any false information to the City regarding equal benefits or cash equivalent associated with the execution, award, amendment, or administration of any contract. [San Diego Municipal Code §22.4307(a)]

Under penalty of perjury under laws of the State of California, I certify the above information is true and correct. I further certify that my firm understands the requirements of the Equal Benefits Ordinance and will provide and maintain equal benefits for the duration of the contract or pay a cash equivalent if authorized by the City.

<u>Richard Dowsing/President</u>		<u>04/01/14</u>
Name/Title of Signatory	Signature	Date

FOR OFFICIAL CITY USE ONLY

Receipt Date: _____ EBO Analyst: _____ Approved Not Approved – Reason: _____

rev 02/15/2011

PROPOSAL FORMS

Design-Build Proposal

1. The undersigned The Design-Builder proposes and agrees, if this Proposal is accepted, to enter into an agreement with the City in the form included in the Contract Documents to perform the Work as specified or indicated in said Contract Documents entitled **Sodium Hypochlorite at Otay Water Treatment Plant Design-Build Contract**
2. The Design-Builder accepts all of the terms and conditions of the Contract Documents, including without limitation those in the RFP.
3. This Proposal will remain open for the period stated in the RFP unless otherwise required by law. The Design-Builder will enter into an agreement within the time and in the manner required in the RFP and will furnish the insurance certificates, Payment Bond, and Performance Bond required by the Contract Documents.
4. The Design-Builder has familiarized itself with the nature and extent of the Contract Documents, Work, site, locality where the Work is to be performed, the legal requirements (federal, state and local laws, ordinances, rules, and regulations), and the conditions affecting cost, progress or performance of the Work and has made such independent investigations as The Design-Builder deems necessary.

To all the foregoing, and including all Proposal schedule(s) and information required of the Design-Builder contained in this Proposal Form, said The Design-Builder further agrees to complete the Work and Services required under the Contract Documents within the Contract Time stipulated in said Contract Documents, and to accept in full payment therefore the Contract Price based on the Total Proposal Price(s) named in the aforementioned Proposal schedule(s).

Dated: 04/01/2014

The Design-Builder: Orion Construction Corporation

By:
(Signature)

Title: President

PROPOSAL FORMS

PRICE PROPOSAL FORMS

The Design-Builder agrees to the design and construction of **Sodium Hypochlorite at Otay Water Treatment Plant Design-Build Contract**, for the City of San Diego, in accordance with these contract documents for the lump sum price listed below. The Design-Builder guarantees the proposed prices for a period of 120 Days (90 Days for federally funded contracts and contracts valued at \$500,000 or less) from the date Proposals are due until the award of the Task Order. The duration of the price guarantee shall be extended by the number of Days required for the City to obtain all items necessary to fulfill all conditions precedent e.g., bond and insurance.

Item No.	NAICS CODE	Description	Quantity	D*	Unit	Unit Price	Extension
BASE BID							
1	524126	Bonds (Payment and Performance)	1		LS	 	\$ 30,000.-
2	541330	Engineering and Design Services	1	D	LS	 	\$ 300,000.-
3	238210	Field Construction	1		LS	 	\$ 2,309,850.-
4	541330	Storm Water Pollution Prevention	1		LS	 	\$ 5,000.-
5	238990	Disposal of Class I Regulated Waste Material	15		CY	\$ 50.-	\$ 750.-
6	238990	Disposal of Class II Regulated Waste Material	20		CY	\$ 100.-	\$ 2,000.-
7	237110	Transition Hypochlorite Tank System – Type I	1		AL	 	\$10,000
8		City Contingency – Type II	1		AL	 	\$230,000
TOTAL DESIGN-BUILD PROPOSAL (ITEMS NO 1 THROUGH 8 INCLUSIVE):							\$ 2,887,600.⁰⁰/₁₀₀

* Design Element (For City Use)

Total Price For Design-Build Proposal, (items 1 through 8, inclusive) amount written in words:

TWO MILLION EIGHT HUNDRED EIGHTY SEVEN THOUSAND,
SIX HUNDRED DOLLARS AND NO CENTS,

PROPOSAL FORMS

Design-Builder: Orion Construction Corporation

Title: Richard Dowsing

Signature: 

The names of all persons interested in the foregoing proposal as principals are as follows:

Richard Dowsing, President

IMPORTANT NOTICE: If Design-Builder or other interested person is a corporation, state secretary, treasurer, and manager thereof; if a co-partnership, state true name of firm, also names of all individual co-partners composing firm; if Design-Builder or other interested person is an individual, state first and last names in full.

NOTES:

- A. The Contract Price to be used in the selection process as described in Section 14 of the RFP will be determined on the Base Proposal alone.
- B. Prices and notations shall be in ink or typewritten. All corrections (which have been initiated by the Design-Builder using erasures, strike out, line out, or "white-out") shall be typed or written in with ink adjacent thereto, and shall be initialed in ink by the person signing the Proposal.
- C. Failure to initial all corrections made in the proposal documents may cause the Proposal to be rejected as **non-responsive** and ineligible for award.
- D. Blank spaces must be filled in. The Design-Builder's failure to submit a price may render the Proposal **non-responsive** and ineligible for award.
- E. Unit prices shall be entered for all unit price items. Unit prices shall not exceed two (2) decimal places. If the Unit prices entered exceed two (2) decimal places, the City will only use the first two digits after the decimal points without rounding up or down.
- F. All extensions of the unit prices bid will be subject to verification by the City. In the case of inconsistency or conflict between the product of the Quantity x Unit Price and the Extension, the product shall govern.

PROPOSAL FORMS

- G. In the case of inconsistency or conflict, between the sums of the Extensions with the estimated total Bid, the sum of the Extensions shall govern.
- H. Proposals shall not contain any recapitulation of the Work. Conditional Proposals will be rejected as being **non-responsive**. Alternative proposals will not be considered unless called for.

WE ACKNOWLEDGE RECEIPT OF:

ADDENDUM #1 DATED 01/27/14

ADDENDUM #2 DATED 02/14/14

ADDENDUM #3 DATED 03/05/14

ADDENDUM #4 DATED 03/18/14

BIDDING DOCUMENTS

DESIGN-BUILD LIST OF SUBCONTRACTORS TO BE INCLUDED IN THE PRICE PROPOSAL ONLY

The DOLLAR VALUE of the total Bid to be performed by the Subcontractor shall be stated for all Subcontractors listed. Failure to comply with the listing of the Subcontractors as specified shall result in the Bid being rejected as non-responsive and ineligible for award. The Design-Builder shall list all SLBE, ELBE, DBE, DVBE, MBE, WBE, OBE, WoSB, SDB, HUBZone, and SDVOSB Subcontractors that Design-Builder are seeking recognition towards achieving any subcontracting participation percentages.

NAME, ADDRESS AND TELEPHONE NUMBER OF SUBCONTRACTOR	CONSTRUCTOR or DESIGNER	TYPE OF WORK	DOLLAR VALUE OF SUBCONTRACT	MBE, WBE, DBE, DVBE, OBE, ELBE, SLBE, SDB, WoSB, HUBZone, OR SDVOSB (1)	WHERE CERTIFIED (2)	CHECK IF JOINT VENTURE PARTNERSHIP
Sapphire Electric, 1948 Don Lee Pl, Ste 1. Escondido, CA 92029	Constructor	Electrical and I/C	\$276,000.00	ELBE	City	
Christensen Structural Concrete, 9168 West Lilac, Escondido CA, 92026	Constructor	Structural Concrete	\$142,000.00	ELBE	City	
A.B. Hashmi Inc., 13066 Deer Canyon Court, San Diego, CA 92131	Constructor	Furnish and install tanks, coatings, misc. metals	\$290,000.00	ELBE	City	
Process Solutions Inc., 1077 Dell Avenue, Suite A, Campbell CA 95008	Constructor	Furnish and install OSHG system	\$549,600.00			
GHD Inc., 3750 Convoy St. Suite 220, San Diego, CA 92111	Designer	Design engineer	\$186,578.00			
Southern California Soil and Testing, 6280 Riverdale St, San Diego, CA 92120	Designer	Geotechnical engineer	\$6,000.00	SLBE	City	

- (1) As appropriate. Design-Builder shall identify Subcontractor as one of the following and shall include a valid proof of certification (except for OBE, SLBE and ELBE):
- | | | | |
|---|--------|--|---------|
| Certified Minority Business Enterprise | MBE | Certified Woman Business Enterprise | WBE |
| Certified Disadvantaged Business Enterprise | DBE | Certified Disabled Veteran Business Enterprise | DVBE |
| Other Business Enterprise | OBE | Emerging Local Business Enterprise | ELBE |
| Small Local Business Enterprise | SLBE | Small Disadvantaged Business | SDB |
| Woman-Owned Small Business | WoSB | HUBZone Business | HUBZone |
| Service-Disabled Veteran Owned Small Business | SDVOSB | | |
- (2) As appropriate. Design-Builder shall indicate if Subcontractor is certified by:
- | | | | |
|--|--------|---|----------|
| City of San Diego | CITY | State of California Department of Transportation | CALTRANS |
| California Public Utilities Commission | CPUC | San Diego Regional Minority Subcontractor Diversity Council | SRMSDC |
| State of California's Department of General Services | CADoGS | City of Los Angeles | LA |
| State of California | CA | U.S. Small Business Administration | SBA |

BIDDING DOCUMENTS

DESIGN-BUILD LIST OF SUBCONTRACTORS TO BE INCLUDED IN THE PRICE PROPOSAL ONLY

The DOLLAR VALUE of the total Bid to be performed by the Subcontractor shall be stated for all Subcontractors listed. Failure to comply with the listing of the Subcontractors as specified shall result in the Bid being rejected as non-responsive and ineligible for award. The Design-Builder shall list all SLBE, ELBE, DBE, DVBE, MBE, WBE, OBE, WoSB, SDB, HUBZone, and SDVOSB Subcontractors that Design-Builder are seeking recognition towards achieving any subcontracting participation percentages.

The Design-Builder will not receive any subcontracting participation percentages if the Design-Builder fails to submit the required proof of certification (except for OBE, SLBE, and ELBE)

BIDDING DOCUMENTS

DESIGN-BUILD NAMED EQUIPMENT/MATERIAL SUPPLIER LIST TO BE INCLUDED IN THE PRICE PROPOSAL ONLY

For credit calculations for City-funded contracts, see Chapter 11 in The WHITEBOOK. For non-City funded contracts, refer to the Funding Agency Provisions. If no indication of the supplier, manufacturer, or non-supplier is provided, listed firm will receive no credit for purpose of calculating the Subcontractor Participation Percentages.

NAME, ADDRESS AND TELEPHONE NUMBER OF VENDOR/SUPPLIER	MATERIALS OR SUPPLIES	DOLLAR VALUE OF MATERIALS OR SUPPLIES	SUPPLIER (Yes/No)	MANUFACTURER (Yes/No)	MBE, WBE, DBE, DVBE, OBE, ELBE, SLBE, SDB, WoSB, HUBZone, OR SDVOSB (1)	WHERE CERTIFIED (2)
Evoqua Water Technologies, 2650 Tallevast Rd., Sarasota, FL 34243	Chlorine dioxide generators	\$132,138.00	No	Yes		

- (1) As appropriate. Design-Builder shall identify Vendor/Supplier as one of the following and shall include a valid proof of certification (except for OBE, SLBE and ELBE):
- | | | | |
|---|--------|--|---------|
| Certified Minority Business Enterprise | MBE | Certified Woman Business Enterprise | WBE |
| Certified Disadvantaged Business Enterprise | DBE | Certified Disabled Veteran Business Enterprise | DVBE |
| Other Business Enterprise | OBE | Emerging Local Business Enterprise | ELBE |
| Small Local Business Enterprise | SLBE | Small Disadvantaged Business | SDB |
| Woman-Owned Small Business | WoSB | HUBZone Business | HUBZone |
| Service-Disabled Veteran Owned Small Business | SDVOSB | | |
- (2) As appropriate. Design-Builder shall indicate if Vendor/Supplier is certified by:
- | | | | |
|--|--------|---|----------|
| City of San Diego | CITY | State of California Department of Transportation | CALTRANS |
| California Public Utilities Commission | CPUC | San Diego Regional Minority Vendor/Supplier Diversity Council | SRMSDC |
| State of California's Department of General Services | CADoGS | City of Los Angeles | LA |
| State of California | CA | U.S. Small Business Administration | SBA |

The Design-Builder will not receive any subcontracting participation percentages if the Design-Builder fails to submit the required proof of certification (except for OBE, SLBE, and ELBE)

541611 Administrative Management and General Management Consulting Services
 541350 Building Inspection Services
 541618 Other Management Consulting Services
 541690 Other Scientific and Technical Consulting Services
 531311 Residential Property Managers

San Diego Steel Solutions

Guillermina C. Summer (760) 489-9990 Fax: (760) 489-8610

Sdsteelsolutions@yahoo.com

License Type**Business Status**

C-51

Emerging

NOTE: Specialty Construction

332323 Ornamental and Architectural Metal Work Manufacturing
 238120 Structural Steel and Precast Concrete Contractors

San Dieguito Engineering, Inc.

Barry Munson

(760) 753-5525 Fax: (760) 943-8236

Aaguilar@sdeinc.com

License Type**Business Status**

CSD-12

Small

NOTE: Subsurface Utility Engineering, Civil Engineering, Land Surveying and Planning

541330 Engineering Services
 237210 Land Subdivision
 541370 Surveying and Mapping (except Geophysical) Services

Sapphire Electric Inc.

Ernest B. Reid

(760) 796-4001 Fax: (760) 796-4020

Breid@sapphreelectric.com

License Type**Business Status**

C-10

Emerging

NOTE: Specialty Construction

238210 Electrical Contractors

Saturn Electric, Inc.

Timothy A. Dudek

(858) 271-4100 Fax: (858) 271-0230

tim@saturnelectric.com

License Type**Business Status**

A

Small

B

Small

C-10

Small

NOTE: Construction, Full service electrical contractor specializing in commercial/industrial work, lighting, and distribution T&M

238210 Electrical Contractors

Cecilias Safety Services, Inc.	Cecilia Katheleen Ostlu	(858) 793-4465	Fax: (858) 793-4495
Cecilias@pacbell.net			
	License Type	Business Status	
	C-31	Emerging	
	C-61	Emerging	
	D-42	Emerging	

NOTE:

- 561990 All Other Support Services
- 423990 Other Miscellaneous Durable Goods Merchant Wholesalers

Chang Consultants	Wayne W. Chang	(858) 692-0760	Fax: (858) 832-1402
Wayne@changconsultants.com			
	License Type	Business Status	
	CSD-12	Emerging	

NOTE: Professional Services

- 541340 Drafting Services
- 541330 Engineering Services
- 541690 Other Scientific and Technical Consulting Services

Chen Ryan Associates, Inc.	Monique Chen	(619) 318-4664	Fax: (000) 000-0000
Mchen@chenryanmobility.com			
	License Type	Business Status	
	Goods/Services	Emerging	

NOTE: Traffic Engineering and Transportation Planning

- 541330 Engineering Services

Choctaw Construction Company, Inc.	John C. Hartung III	(760) 789-8713	Fax: (760) 789-3790
Choctawco@cox.net			
	License Type	Business Status	
	B	Emerging	

NOTE: Construction

- 236220 Commercial and Institutional Building Construction
- 236210 Industrial Building Construction
- 236115 New Single-Family Housing Construction (except Operative Builders)
- 236118 Residential Remodelers

Christensen Structural Concrete	Bruce Christensen	(760) 731-7053	Fax: (760) 731-7053
Bnc1911@yahoo.com			
	License Type	Business Status	
	C-08	Emerging	

NOTE: Eligible for ALL subcontracting opportunities, eligible as a prime contractor for \$50k & below until receipt of bond letter.

A. B. Hashmi, Inc.

Ahmad B. Hashmi

(760) 672-8059 Fax: (760) 439-3998

Info@abhashmi.com

License Type**Business Status**

A

Emerging

C-27

Emerging

NOTE: A,C-27 License Contractor

238990 All Other Specialty Trade Contractors

237310 Highway, Street, and Bridge Construction

561730 Landscaping Services

238140 Masonry Contractors

237990 Other Heavy and Civil Engineering Construction

238110 Poured Concrete Foundation and Structure Contractors

238910 Site Preparation Contractors

238120 Structural Steel and Precast Concrete Contractors

237110 Water and Sewer Line and Related Structures Construction

221310 Water Supply and Irrigation Systems

221300 Water, Sewage and Other Systems

A.B. Court & Associates

Anthony B. Court

(619) 546-7050 Fax: (000) 000-0000

Abcourt@abcourtse.com

License Type**Business Status**

CSD-12

Emerging

NOTE:

541330 Engineering Services

A.D. Hinshaw Associates

Phillip L. Hinshaw

(619) 258-8213 Fax: (619) 258-8214

Phillphinshaw@cox.net

License Type**Business Status**

Goods/Services

Emerging

NOTE:

541620 Environmental Consulting Services

A-1 Fire Protection, Inc.

Jill /John McCarty

(858) 623-2733 Fax: (858) 623-2753

jill@a1fpi.com

License Type**Business Status**

C-16

Small

NOTE: Specialty Contractor

238220 Plumbing, Heating, and Air-Conditioning Contractors

NAICS NAICS_Description

Contact Person

Solid Structures, Inc Jeff@solidstructuresinc.com	Jeffrey F. Hicks	(619) 464-5210	Fax: (619) 464-5212
		License Type	Business Status
		A	Emerging

NOTE: Construction

237310 Highway, Street, and Bridge Construction

Southern California Soil and Testing, Inc. nclements@scst.com	Neal W. Clements, PE	(619) 280-4321	Fax: (619) 280-4717
		License Type	Business Status
		No License	Small

NOTE: Professional Services

541330 Engineering Services

541380 Testing Laboratories

Southland Geotechnical Consultants Sgc.geo@att.net	Susan E. Tanges	(619) 442-8022	Fax: (619) 442-7859
		License Type	Business Status
		Goods/Services	Emerging
		Goods/Services	Emerging

NOTE: Professional Services

541330 Engineering Services

541690 Other Scientific and Technical Consulting Services

541490 Other Specialized Design Services

Southland Surveying, Inc. Company@southlandsurveying.com	Scott Fitch	(858) 792-5550	Fax: (858) 792-5576
		License Type	Business Status
		LS	Small

NOTE:

541370 Surveying and Mapping (except Geophysical) Services

Southwest Geophysics, Inc. info@southwestgeophysics.com	Hans Van De Vrugt	(858) 527-0849	Fax: (858) 225-0114
		License Type	Business Status
		Goods/Services	Small
		Goods/Services	Small

NOTE: Geologist - Professional Services

541360 Geophysical Surveying and Mapping Services

ATTACHMENT I
DESIGN-BUILD AGREEMENT

DESIGN-BUILD AGREEMENT

This Design-Build agreement [Contract] is made and entered into this 31st day of JULY, 2014, by and between The City of San Diego [City], a municipal corporation, and **Orion Construction Corporation** [Design-Builder], for the purpose of designing and constructing the **Sodium Hypochlorite at Otay Water Treatment Plant Design-Build Contract** (Project) in the amount of **TWO MILLION EIGHT HUNDRED EIGHTY-SEVEN THOUSAND, SIX HUNDRED DOLLARS AND 00/100 (\$2,887,600.00)**. The City and Design-Builder are referred to herein as the "Parties".

RECITALS

- A. The City desires to construct the Project located in the City of San Diego, California.
- B. The City desires to contract with a single entity for design and construction of the Project, as set forth in this Agreement.
- C. The City has issued a Request for Proposals [RFP] for **K-14-1195-DBA-3** pursuant to which the City solicited Proposals from design-build teams to design, rehabilitate, and build the Project.
- D. In accordance with City's RFP, Design-Builder submitted a Proposal for the Project and is prepared to enter into this Agreement.
- E. The City has selected the Design-Builder to perform, either directly or pursuant to Subcontracts, hereinafter defined, the design, engineering, and construction services set forth in this Agreement and the Contract Documents, hereinafter defined.
- F. The Design-Builder is ready, willing, and able to perform the services required in accordance with the terms and conditions of this Agreement.
- G. Execution of this Agreement by the Design-Builder is a representation that the Design-Builder has visited the Site, become familiar with the local conditions under which the Work is to be performed and correlated personal observations with requirements of the Contract Documents.

In consideration of the above recitals and the mutual covenants and conditions set forth herein, and for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties hereby set forth their mutual covenants and understandings as follows.

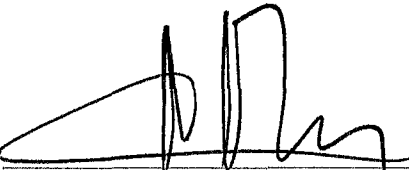
AGREEMENT

- A. Recitals and Attachments. The above referenced recitals are true and correct and are incorporated into this Agreement by this reference. All attachments referenced in this Agreement section are incorporated into the Contract by this reference.
- B. Contract Performance. The Design-Builder shall design and construct the Project in a good and workmanlike manner to the satisfaction of the City, lien free and in compliance with the Contract Documents and within the time specified, in return for timely payment by the City in accordance with the Contract.
- C. Attachments. All attachments e.g., Reference Standards in the RFP, Supplementary Special Provisions (SSP), the attached Faithful Performance and Payment Bonds, Agreement and Supplemental Agreements, and the attached Proposal included in the Proposal documents by the Contractor are incorporated into the Contract by this reference.
- D. Contract Documents. This Contract incorporates the 2012 Edition of the Standard Specifications for Public Works Construction [The GREENBOOK], including amendments set forth in the 2012 edition of the San Diego Specifications for Public Works Construction [The WHITEBOOK].

The Contract Documents shall include the items mentioned in section 2-5.2 of The WHITEBOOK and shall follow that order of precedence.


IN WITNESS WHEREOF, this Agreement is signed by the City of San Diego, acting by and through its Mayor or designee, pursuant to Municipal Code §22.3102 authorizing such execution.

THE CITY OF SAN DIEGO

By  _____
Print Name: _____
Albert P. Rechany
Deputy Director


Date: 10/7/14

APPROVED AS TO FORM AND LEGALITY

Jan I. Goldsmith, City Attorney
By  _____
Print Name: _____
Jeremy Jung
Deputy City Attorney

Date: 10/6/14

CONTRACTOR

By  _____
Print Name: Richard Dowsing

Title: President

Date: 7/31/14

City of San Diego License No.: 4B1992002970

State Contractor's License No.: 549309

ATTACHMENT J
DESIGN-BUILD AGREEMENT FORMS

CONTRACT FORMS ATTACHMENTS
PERFORMANCE BOND AND LABOR AND MATERIAL MEN'S BOND

FAITHFUL PERFORMANCE BOND AND LABOR AND MATERIAL MEN'S BOND:

Orion Construction Corporation, a corporation, as principal, and Western Surety Company, a corporation authorized to do business in the State of California, as Surety, hereby obligate themselves, their successors and assigns, jointly and severally, to The City of San Diego a municipal corporation in the sum of **TWO MILLION EIGHT HUNDRED EIGHTY-SEVEN THOUSAND, SIX HUNDRED DOLLARS AND 00/100 (\$2,887,600.00)** for the faithful performance of the annexed contract, and in the sum of **TWO MILLION EIGHT HUNDRED EIGHTY-SEVEN THOUSAND, SIX HUNDRED DOLLARS AND 00/100 (\$2,887,600.00)** for the benefit of laborers and materialmen designated below.

Conditions:

If the Principal shall faithfully perform the annexed contract **Sodium Hypochlorite at Otay Water Treatment Plant**, Bid Number **K-14-1195-DBA-3**, San Diego, California then the obligation herein with respect to a faithful performance shall be void; otherwise it shall remain in full force.

If the Principal shall promptly pay all persons, firms and corporations furnishing materials for or performing labor in the execution of this contract, and shall pay all amounts due under the California Unemployment Insurance Act then the obligation herein with respect to laborers and materialmen shall be void; otherwise it shall remain in full force.

The obligation herein with respect to laborers and materialmen shall inure to the benefit of all persons, firms and corporations entitled to file claims under the provisions of Chapter 3 of Division 5 of Title I of the Government Code of the State of California or under the provisions of Section 3082 et seq. of the Civil Code of the State of California.

Changes in the terms of the annexed contract or specifications accompanying same or referred to therein shall not affect the Surety's obligation on this bond, and the Surety hereby waives notice of same.

PERFORMANCE BOND AND LABOR AND MATERIALMEN'S BOND (Cont.)

The Surety shall pay reasonable attorney's fees should suit be brought to enforce the provisions of this bond.

Dated July 31st, 2014

Approved as to Form and Legality

Orion Construction Corporation
Principal


By 

Richard Dowsing, President
Printed Name of Person Signing for Principal

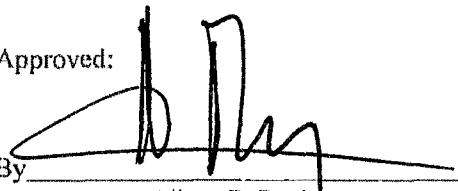
Jan I. Goldsmith, City Attorney

By 
Deputy City Attorney

Western Surety Company
Surety

By 
Maria Guise, Attorney-in-fact

Approved:


Albert P. Rechany
Deputy Director

1455 Frazee Road, Suite 801
Local Address of Surety

San Diego, CA 92108
Local Address (City, State) of Surety

619-682-3510
Local Telephone No. of Surety

Premium \$ 29,423.00
Premium is for Contract Term and Subject to Adjustment Based on Final Contract Price.

Bond No. 58716575

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

STATE OF CALIFORNIA

County of San Diego }

On JUL 31 2014 before me, Jose Lemus, Notary Public,
Date Insert Name of Notary exactly as it appears on the official seal

personally appeared Maria Guise
Name(s) of Signer(s)



Place Notary Seal Above

who proved to me on the basis of satisfactory evidence to be the person(~~s~~) whose name(~~s~~) is/~~are~~ subscribed to the within instrument and acknowledged to me that ~~he~~/she/~~it~~ executed the same in ~~his~~/her/~~its~~ authorized capacity(~~ies~~), and that by ~~his~~/her/~~its~~ signature(~~s~~) on the instrument the person(~~s~~), or the entity upon behalf of which the person(~~s~~) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

Witness my hand and official seal.

Signature: Jose Lemus
Signature of Notary Public Jose Lemus

OPTIONAL

Though the information below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent removal and reattachment of the form to another document.

Description of Attached Document

Title or Type of Document: _____

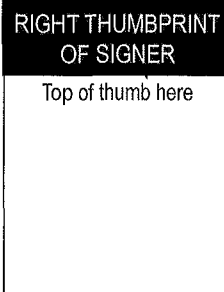
Document Date: _____ Number of Pages: _____

Signer(s) Other Than Named Above: _____

Capacity(ies) Claimed by Signer(s)

Signer's Name: _____

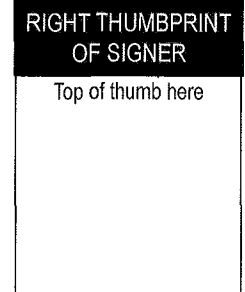
- Individual
- Corporate Officer — Title(s): _____
- Partner Limited General
- Attorney in Fact
- Trustee
- Guardian or Conservator
- Other: _____



Signer is Representing:

Signer's Name: _____

- Individual
- Corporate Officer — Title(s): _____
- Partner Limited General
- Attorney in Fact
- Trustee
- Guardian or Conservator
- Other: _____



Signer is Representing:

Western Surety Company

POWER OF ATTORNEY APPOINTING INDIVIDUAL ATTORNEY-IN-FACT

Know All Men By These Presents, That WESTERN SURETY COMPANY, a South Dakota corporation, is a duly organized and existing corporation having its principal office in the City of Sioux Falls, and State of South Dakota, and that it does by virtue of the signature and seal herein affixed hereby make, constitute and appoint

Lawrence F Mc Mahon, James Baldassare Jr, Sarah Myers, Maria Guise, Lilia Robinson, Charlotte Aquino, Jennifer L Clampert, Janice Martin, Individually

of San Diego, CA, its true and lawful Attorney(s)-in-Fact with full power and authority hereby conferred to sign, seal and execute for and on its behalf bonds, undertakings and other obligatory instruments of similar nature

- In Unlimited Amounts -

and to bind it thereby as fully and to the same extent as if such instruments were signed by a duly authorized officer of the corporation and all the acts of said Attorney, pursuant to the authority hereby given, are hereby ratified and confirmed.

This Power of Attorney is made and executed pursuant to and by authority of the By-Law printed on the reverse hereof, duly adopted, as indicated, by the shareholders of the corporation.

In Witness Whereof, WESTERN SURETY COMPANY has caused these presents to be signed by its Vice President and its corporate seal to be hereto affixed on this 30th day of January, 2013.



WESTERN SURETY COMPANY

Paul T. Bruflat

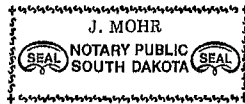
Paul T. Bruflat, Vice President

State of South Dakota }
County of Minnehaha } ss

On this 30th day of January, 2013, before me personally came Paul T. Bruflat, to me known, who, being by me duly sworn, did depose and say: that he resides in the City of Sioux Falls, State of South Dakota; that he is the Vice President of WESTERN SURETY COMPANY described in and which executed the above instrument; that he knows the seal of said corporation; that the seal affixed to the said instrument is such corporate seal; that it was so affixed pursuant to authority given by the Board of Directors of said corporation and that he signed his name thereto pursuant to like authority, and acknowledges same to be the act and deed of said corporation.

My commission expires

June 23, 2015



J. Mohr

J. Mohr, Notary Public

CERTIFICATE

I, L. Nelson, Assistant Secretary of WESTERN SURETY COMPANY do hereby certify that the Power of Attorney hereinabove set forth is still in force, and further certify that the By-Law of the corporation printed on the reverse hereof is still in force. In testimony whereof I have hereunto subscribed my name and affixed the seal of the said corporation this _____ day of JUL 31 2014.



WESTERN SURETY COMPANY

L. Nelson

L. Nelson, Assistant Secretary

CONTRACTOR CERTIFICATION

DRUG-FREE WORKPLACE

PROJECT TITLE: Sodium Hypochlorite at Otay Water Treatment Plant Design-Build Contract

I hereby certify that I am familiar with the requirements of San Diego City Council Policy No. 100-17 regarding Drug-Free Workplace as outlined in RFP, "Drug-Free Workplace", of the project specifications, and that;

Orion Construction Corporation

(Name under which business is conducted)

has in place a drug-free workplace program that complies with said policy. I further certify that each subcontract agreement for this project contains language which indicates the subcontractor's agreement to abide by the provisions of subdivisions a) through c) of the policy as outlined.

Signed *R. Dowsing*

Printed Name *Richard Dowsing*

Title *President*

CONTRACTOR ADA CERTIFICATION

AMERICAN WITH DISABILITIES ACT (ADA) COMPLIANCE CERTIFICATION

PROJECT TITLE: Sodium Hypochlorite at Otay Water Treatment Plant Design-Build Contract

I hereby certify that I am familiar with the requirements of San Diego City Council Policy No. 100-4 regarding the American With Disabilities Act (ADA) outlined in the RFP, "American With Disabilities Act", of the project specifications, and that;

Orion Construction Corporation

(Name under which business is conducted)

has in place a workplace program that complies with said policy. I further certify that each subcontract agreement for this project contains language which indicates the subcontractor's agreement to abide by the provisions of the policy as outlined.

Signed *R. Dowsing*
Printed Name *Richard Dowsing*
Title *President*

CONTRACTOR STANDARDS CERTIFICATION

CONTRACTOR STANDARDS – PLEDGE OF COMPLIANCE

PROJECT TITLE: Sodium Hypochlorite at Otay Water Treatment Plant Design-Build Contract

I declare under penalty of perjury that I am authorized to make this certification on behalf of Orion Construction Corporation, as Contractor, that I am familiar with the requirements of City of San Diego Municipal Code § 22.3224 regarding Contractor Standards as outlined in RFP ("Contractor Standards"), of the project specifications, and that Contractor has complied with those requirements.

I further certify that each of the Contractor's subcontractors whose subcontracts are greater than \$50,000 in value has completed a Pledge of Compliance attesting under penalty of perjury of having complied with City of San Diego Municipal Code § 22.3224.

Dated this 31st Day of July, 2014.

Signed Richard Dousing

Printed Name Richard Dousing

Title President

AFFIDAVIT OF DISPOSAL

WHEREAS, on the _____ DAY OF _____, _____, the undersigned entered into and executed a contract with the City of San Diego, a municipal corporation, for:

Sodium Hypochlorite at Otay Water Treatment Plant Design-Build Contract

(Name of Project)

as particularly described in said contract and identified as Bid No. **K-14-1195-DBA-3**, SAP No. (IO/CC/WBS) **B-13174** and **WHEREAS**, the specification of said contract requires the Contractor to affirm that "all brush, trash, debris, and surplus materials resulting from this project have been disposed of in a legal manner"; and **WHEREAS**, said contract has been completed and all surplus materials disposed of:

NOW, THEREFORE, in consideration of the final payment by the City of San Diego to said Contractor under the terms of said contract, the undersigned Contractor, does hereby affirm that all surplus materials as described in said contract have been disposed of at the following location(s)

and that they have been disposed of according to all applicable laws and regulations.

Dated this _____ DAY OF _____, _____.

_____ Contractor

by

ATTEST:

State of _____

County of _____

On this _____ DAY OF _____, 2_____, before the undersigned, a Notary Public in and for said County and State, duly commissioned and sworn, personally appeared _____ known to me to be the _____ Contractor named in the foregoing Release, and whose name is subscribed thereto, and acknowledged to me that said Contractor executed the said Release.

Notary Public in and for said County and State

City of San Diego

CITY CONTACT: Claudia Abarca, Contract Specialist, Email: Cabarca@saniego.gov

Phone No. (619) 533-3439, Fax No. (619) 533-3633



ADDENDUM "1"

REQUEST FOR PROPOSAL (RFP)

FOR

SODIUM HYPOCHLORITE AT OTAY WATER TREATMENT PLANT DESIGN-BUILD CONTRACT

RFQ NO.: As-Needed Design-Build Service for the Engineering & Capital Projects Department – 5151DB

RFP NO.: K-14-1195-DBA-3

TASK ORDER NO.: 11DB07

SAP NO. (WBS/IO/CC): B-13174

CLIENT DEPARTMENT: 2013

COUNCIL DISTRICT: 8

PROJECT TYPE: BI

PROPOSAL DUE:

12:00 NOON

FEBRUARY 26, 2014

CITY OF SAN DIEGO

PUBLIC WORKS CONTRACTING GROUP

1010 SECOND AVENUE, 14TH FLOOR, MS 614C

SAN DIEGO, CA 92101

A. CHANGES TO CONTRACT DOCUMENTS

The following changes to the RFP are hereby made effective as though originally issued with the RFP. The Design-Builders are reminded that all previous requirements to this solicitation remain in full force and effect.

B. CHANGES TO THE REQUEST FOR PROPOSALS

1. To Section 2, "Equal Opportunity Contracting Program," Page 5, Sub-section 2.4.2., DELETE in its entirety and SUBSTITUTE with the following:

2.4.2. The Design-Builder's are **encouraged** to attend the Pre-Proposal Meeting to better understand the Good Faith Effort requirements of this contract. See the City's document titled "SLBE Program, Instructions For Bidders Completing The Good Faith Effort Submittal" available at: <http://www.sandiego.gov/eoc/>

2. To Section 6, "Selection and Award Schedule," Page 6, Sub-section 6.1.1., DELETE in its entirety and SUBSTITUTE with the following:

6.1.1. Pre-Proposal Meeting

JANUARY 28, 2014

James Nagelvoort, Director
Public Works Department

Dated: *January 27, 2014*
San Diego, California

JN/BD/ca/egz

City of San Diego

CITY CONTACT: Claudia Abarca, Contract Specialist, Email: Cabarca@saniego.gov

Phone No. (619) 533-3439, Fax No. (619) 533-3633



ADDENDUM “2”

REQUEST FOR PROPOSAL (RFP)

FOR

SODIUM HYPOCHLORITE AT OTAY WATER TREATMENT PLANT DESIGN-BUILD CONTRACT

RFQ NO.: As-Needed Design-Build Service for the Engineering & Capital Projects Department – 5151DB

RFP NO.: K-14-1195-DBA-3

TASK ORDER NO.: 11DB07

SAP NO. (WBS/IO/CC): B-13174

CLIENT DEPARTMENT: 2013

COUNCIL DISTRICT: 8

PROJECT TYPE: BI

PROPOSAL DUE:

12:00 NOON

MARCH 5, 2014

CITY OF SAN DIEGO

PUBLIC WORKS CONTRACTING GROUP

1010 SECOND AVENUE, 14TH FLOOR, MS 614C

SAN DIEGO, CA 92101

A. CHANGES TO CONTRACT DOCUMENTS

The following changes to the RFP are hereby made effective as though originally issued with the RFP. The Design-Builders are reminded that all previous requirements to this solicitation remain in full force and effect.

THE SUBMITTAL DATE FOR THIS PROJECT HAS BEEN EXTENDED AS STATED ON THE COVER PAGE.

B. BIDDER's QUESTIONS

Q1. Page 22, item 2 of the scope of work requires 36 hours of sodium hypochlorite storage capacity. However, page 65 of the RFP (Page 5 of 11 of the Basis of Design Report) requires 48 hours of storage capacity. Is 36 hours the correct storage capacity?

A1. No, 36 hours of sodium hypochlorite storage capacity is not correct. See changes to the RFP as part of this Addendum.

Q2. Page 22, item 1 of the scope of work indicates an anticipated 20 year life cycle of the sodium hypochlorite system. However, page 27, section 11.1 requires a minimum 50 year service life. Is 20 years the correct anticipated service life?

A2. 20 year service life is correct. See changes to the RFP as part of this Addendum.

Q3. Page 28, item 12.2 indicates that the construction survey will be performed by the City. Is this correct?

A3. Yes.

Q4. Page 29 of the RFP, Section 19.1.2 indicates that the Design–Builder shall take steps reasonably necessary to ascertain.....the availability of.....power.... A Sodium Hypochlorite system requires more power than the existing chlorine gas system. Is there enough power at the existing chlorine building to supply the system proposed in the RFP?

A4. Adequacy of power at the building to supply the proposed project is not known. The RFP was intentionally non-directive in requiring a specific size and/or capacity of hypochlorite generator. It specified the required dose rates and level of redundancy but did not require a specific size or combination of sizes of generator(s). The Design-Builder shall determine the optimum size of the hypochlorite generator(s) and ancillary for the OSHG system. There are demands on MCC-12E that will remain after the removal of the gas chlorine system. Phase II of the Otay Improvements Project (2008-2010) added a panel to the south side of MCC-12E that supplies equipment at the Chlorine Dioxide Contactor and the PAC facility. Refer to Figure 7-1 and Otay Water Treatment Plant Upgrades Phase II Single Lines Diagram 2 of this Addendum. . Those demands will remain on MCC-12E.

- Q5. If the answer to the previous RFI question is no or unknown. Is it the responsibility of the Design-Builder to bring power from another location within the water treatment plant?
- A5. Yes. It is unknown. The Design-Builder shall propose power from another location within the water treatment plant if the power at MCC-12E is inadequate to service the new OSHG system. If power from another location is needed, this work will be paid from City contingency of the Proposal.
- Q6. If the answer to the previous RFI questions is yes, where is the point of connection for the power for the new facilities?
- A6. The power to MCC-12E comes from MCC-11E located in the Operations Building Electric Room.
- Q7. And, is there a spare connection to connect to?
- A7. There are two available spare bays on MCC-11E.
- Q8. What is the average and maximum power usage at the existing plant?
- A8. Currently this data is not available.
- Q9. What is the capacity of the utility service and service entrance equipment at the facility?
- A9. The label on the main power feed into the plant states: 1200A @ 480V
- Q10. The Basis of Design Report Figure 1 shows a chlorine feed point upstream of the chlorine dioxide contactor, near the County Water Authority raw water pipeline connection. Is the new sodium hypochlorite connection to this feed point located at the Chlorine Building?
- A10. No. Refer to Addendum 2, page 7, Figure 1 - Otay Disinfection Treatment Segments. The OSHG system will feed hypochlorite to two locations:
1. Post-Filter Chemical Application Point
 2. Basin Influent
- Because the existing piping to the Basin Influent is rarely used (only in the event of a failure of the chlorine dioxide system), if the Design-Builder so chooses, the existing chlorine piping from the Chemical Room to the Basin Influent application point may be used for this hypochlorite feed.
- Q11. Is a new sodium hypochlorite feed connection required for the filter backwash supply?
- A11. No. Hypochlorite will not be fed to the backwash water supply. The backwash water supply is disinfected using chlorine dioxide.

- Q12. Will pumping be required between the bulk hydrochloric acid tank and the three-chemical chlorine dioxide generator?
- A12. Pumping is not currently required for the sodium chlorite feed from the tank farm to the chlorine dioxide generators. Given an acid bulk tank located at the same elevation, it is not anticipated that a pump will be necessary to feed acid at the chlorine dioxide generators.
- Q13. Are there any spare chemical feed lines available between the chemical storage area and chemical feed room and chlorine building?
- A13. There is a line that was designed to carry chlorine to the backwash water supply that has never been used and is essentially new. The Design-Builder can consider use of this line.
- Q14. Can the bulk hydrochloric acid tank be relocated closer to the chlorine building to avoid trenching along the congested plant access roadway?
- A14. Locating the acid tank closer to the Chlorine Building to avoid trenching was considered. The tank could be located on the south side of the Chlorine Building. The drawback, however, to locating the tank away from the existing tank farm is that you could not use the existing unloading area spill containment. A new unloading spill containment would be required adjacent to the new acid tank location. There is an existing duct bank running 20' south of the Chlorine Building which could impede the construction of unloading spill containment in this area. The Design-Builder is welcome to propose alternative locations for the acid tank that include adequate unloading area spill containment.
- Q15. What water supply capacity and pressure is available for the sodium hypochlorite system?
- A15. The water supply to the Chlorine Building is shown in Figure 7-1. The Chlorine Building is supplied by two separate water sources. Either source is capable of supplying the chlorine dioxide system (30 gpm at the generator and 25 gpm for the batch tank headspace eductor) and one chlorine injector (50 gpm) at 50 psi when both systems are running.
- Q16. Where is the connection to the water supply?
- A16. Both water supplies enter at the west side of the Chlorine Building
- Q17. Section 14 of the RFP states the Design-Builder shall obtain all permits. Will the City be responsible for obtaining the Department of Public Health operating permit for the water treatment plant and updating the plant operations plan?
- A17. Yes.

C. CHANGES TO THE REQUEST FOR PROPOSALS

1. To Section 6, Selection and Award Schedule, page 6, Sub-items 6.1.2., 6.1.3., 6.1.4. and 6.1.5., **DELETE** in their entirety and **SUBSTITUTE** with the following:

6.1.2.	Proposal Due Date	MARCH 05, 2014
6.1.3.	RESERVED	
6.1.4.	Selection and Notification	APRIL 02, 2014
6.1.5.	Limited Notice to Proceed	JUNE 18, 2014

2. To Attachment A, Project Description, Scope of Work, Technical Specifications, and Bridging Documents, page 22, Item 2, “Scope of Work”, first paragraph, **DELETE** in its entirety and **SUBSTITUTE** with the following:

This project will convert the existing chlorine system to on-site generation of Sodium Hypochlorite. The design and construction of on-site Sodium Hypochlorite generation system will include, but not limited to, a new on-site hypochlorite generator; hypochlorite feed pumps; hypochlorite tanks; salt storage tanks; Electrical, Mechanical, Piping improvements, integration of the project into the existing SCADA system as specified in the bridging document, and chlorine scrubber removal. The new on-site hypochlorite generator will be installed in the existing Chlorine Room, as well as the hypochlorite feed pumps. A minimum of 48 hours of hypochlorite storage at the typical flow/typical dose chlorine use rate of 868 lbs/day shall be provided. The tanks will be housed in a secondary open containment area along the south side of the Chlorine Building, which will contain three hypochlorite tanks and one salt storage tank, 10’ in diameter and 14’ high, capable of handling 120% of the total capacity. The existing system uses gas chlorine and a sodium chlorite solution to generate chlorine dioxide. Use of hypochlorite in lieu of chlorine gas requires modification of the existing system. The proposed work is summarized in Attachment A. Attachment A (the Bridging document) shall be included in the design and construction scope of work. The design consultant shall provide engineering support during construction and attend construction meetings.

3. To Attachment A, Project Description, Scope of Work, Technical Specifications, and Bridging Documents, page 27, Item 2, Scope of Work, Sub-item 11, Design Criteria and Procedure for Review of Design Materials, Sub-part 11.1 “General”, **DELETE** in its entirety and **SUBSTITUTE** with the following:

11.1 *General* - The design criteria presented herein shall apply to the design and new construction of sewer & water main replacement, site preparation, and restoration as outlined in the Bridging Documents. The Project shall be designed and constructed to provide a minimum service life of 20 years. Construction of the Project shall cause minimum interruptions in existing sewer & water services. Changes to the Pre-design Report recommendations shall be made only if approved by the City.

4. To Attachment A, Project Description, Scope of Work, Technical Specifications, and Bridging Documents, Bridging Documents Sodium Hypochlorite at Otay Water Treatment Plant, Appendix C, "Basis of Design Report", **DELETE** pages 61 through 77 in their entirety and **SUBSTITUTE** with Pages 7 through 30 of this Addendum.
5. To Proposal Forms, Price Proposal Forms, pages 145 through 146, **DELETE** in their entirety and **SUBSTITUTE** with Pages 31 through 32 of this Addendum.

James Nagelvoort, Director
Public Works Department

Dated: *February 14, 2014*
San Diego, California

TH/BD/egz

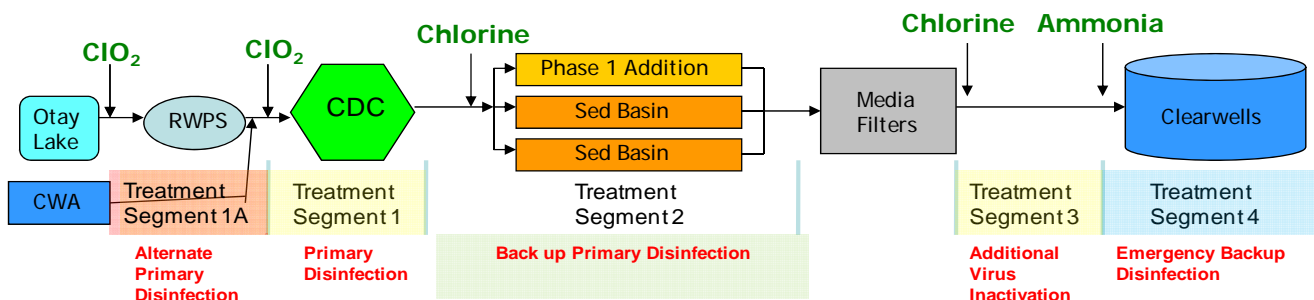
OTAY ON-SITE HYPOCHLORITE GENERATION PROJECT
BASIS OF DESIGN REPORT – FINAL – RFP SITE WALK 28 JANUARY 2014

I. Purpose: This document is intended to provide the basis of design for the selection and size of the on-site hypochlorite generator (OSHG) and ancillary equipment for this project.

II. Background: The existing Chlorine Building was constructed in 1988. It is a 92' by 28' block building designed to house the ton containers of chlorine gas and feed equipment for Otay's ultimate built-out capacity of 60 MGD. Otay's current rated capacity is 34.2 MGD. The Department has no plans or projections to increase the plant's rated capacity within the 20 life cycle of the proposed hypochlorite generation system. The Chlorine Room was modified to accommodate the installation of the chlorine dioxide system in 2010. Drawing attached as Appendix A. It is anticipated that the new OSHG will be installed in the existing Chlorine Room. The chlorine dioxide system will remain in the existing Chlorine Room as an important element of Otay's disinfection strategy.

Otay currently uses a multi-segment approach to disinfection in the water treatment process. Figure 1, below, shows the treatment segments and disinfectant application points. Hypochlorite will directly replace gas chlorine in this treatment plan.

Figure 1 – Otay Disinfection Treatment Segments



Otay Disinfection Treatment Segments

- 1A – Pipeline from the Park manhole to the CDC – Chlorine dioxide
- 1 – Chlorine Dioxide Contactor -- Chlorine dioxide
- 2 – Back-up Primary Disinfection – Free chlorine (used in the event of ClO_2 failure)
- 3 – Filter Effluent Channel – Free chlorine
- 4 – Emergency Backup Disinfection -- Chloramines

III. Plant Design Parameters – Plant Flow

Maximum Plant Flow: As noted above, the current maximum instantaneous flow permitted by the California Department of Public Health is 34.2 MGD. This limitation is based on the maximum allowable filter hydraulic loading rate of 6 gal/ft²/min. Given the design depth of the filters (30" of GAC) and the historic filterability problems associated with use of 100% local water supply, it is very unlikely that up grading the filters to 7.6 gal/ft²/min (40 MGD) is possible. With the recent installation of backwash system improvements, however, filter performance has significantly improved opening the possibility of up-rating the filters at some point in the future. Therefore, **40 MGD** should be used as the maximum plant flow for designing the OSG system.

Minimum Plant Flow: Otay's filters use water pumped from the common filter effluent channel to supply backwash water. Because the post-filter chemicals (chlorine, caustic, and ammonia) are not flow paced, a minimum plant flow must be maintained past the application point. Even if the post-filter chemicals are flow paced, the effluent venture meter that would pace these chemicals is sized for a 60 MGD plant build-out and can only read accurately down to about 8 MGD making flow-pace operation impossible below a 14 MGD plant flow rate. This condition requires a minimum plant flow of **14 MGD**.

Typical Plant Flow: In addition to the plant maximum and minimum flow rates, the range of typical flows also should be consider when selecting equipment size. Sizing equipment exclusively for maximum flow and maximum dose can lead to oversized equipment and less than optimal control for the plant during the vast majority of operations. Typical flow for Otay was determined by analyzing the past three years of plant flows. The 99th percentile flow for this period was 24.2 MG. Given that the plant minimum flow is 14 MG, the operating flow range for the plant > 99% of the time is **14 MGD to 24.2 MGD**.

IV. Plant Design Parameters – Chlorine Use

Chlorine Usage Data: Chlorine use at Otay has changed significantly with the introduction of chlorine dioxide in 2010. Prior to chlorine dioxide use, chlorine was applied pre-filter (either at the influent or effluent of the basin) and again at filter effluent. This double point application required a total chlorine dose of 4 to 6 mg/L. To account for all raw water quality conditions, a 50% safety factor over this range is recommended. The results in a maximum dose rate of 8 mg/L. Since Otay's Operations Plan calls for the capability Primary Back-up Disinfection (Treatment Segment #2) with free chlorination in the event of a chlorine dioxide system failure, **the OSHG system must be able to produce a maximum dose rate of 8 mg/L at the maximum flow rate of 40 MGD**.

In addition to the plant maximum flow/maximum dose rate, the range of typical flows also must be considered when selecting equipment size. Sizing equipment exclusively for maximum flow and maximum dose can lead to oversized equipment and less than optimal control for the plant during the vast majority of operations. Typical flow / typical dose rate for Otay is determined by analyzing the past 18 months of plant flow and

chlorine usage. In normal operations, chlorine is applied post-filter and used to generate chlorine dioxide. The upper 95% confidence level chlorine usage in this treatment scheme is 4.3 mg/L. **Typical chlorine usage for Otay is therefore 4.3 mg/L.**

Table 1 – Design Flow and Chlorine Usage Rates

Design Flow / Cl₂ Use Rates	
Maximum Flow (MGD)	40
Minimum Flow (MGD)	14
Typical Flow (MGD)	24.2
Maximum Cl ₂ Dose (mg/L)	8 mg/L
Minimum Cl ₂ Dose (mg/L)	2.0 mg/L
Typical Cl ₂ Dose (mg/L)	4.3 mg/L

Design Generator Capacity	
Max Flow / Max Dose	2668 lbs/day
Min Flow / Min Dose	234 lbs/day
Typical Flow/ Typical Dose	868 lbs/day

V. OSG System Design Considerations:

Hypochlorite Generator System – The hypochlorite generation system shall be a Microclor System as furnished by Process Solutions, Inc, or equal.

NSF 61 -- The OSHG shall comply with California Drinking Water Regulations §64591 (b) (1) Indirect Additives; which states:

If a treatment chemical is generated on site, no equipment used in the generation process shall be in contact with a drinking water, or a chemical to be applied to drinking water, after March 9, 2008, unless the equipment has been tested and certified as meeting the specifications of NSF International/American National Standard Institute (NSF/ANSI) Standard 61-2005/Addendum 1.0-2005 (Drinking Water System Components-Health Effects).

General System Redundancy – All reasonable effort should be taken to minimize single-points-of-failure in the system. Where elimination of a single-point-of-failure is not possible, accommodation of alternate processes or replaceable spares should be identified and provided. For example, extra hypochlorite tank storage might be considered in lieu of full redundancy of generator capacity.

The system shall be designed to provide the capability to use unloading of 12.5% commercial hypochlorite into hypochlorite storage tanks as a back-up chlorine supply. This system shall include a commercial strength sodium hypochlorite dilution panel shall including an eductor, a rotameter for potable water, a rotameter for 12% sodium hypochlorite, an outlet check valve and all other valving, piping, and equipment necessary for emergency service.

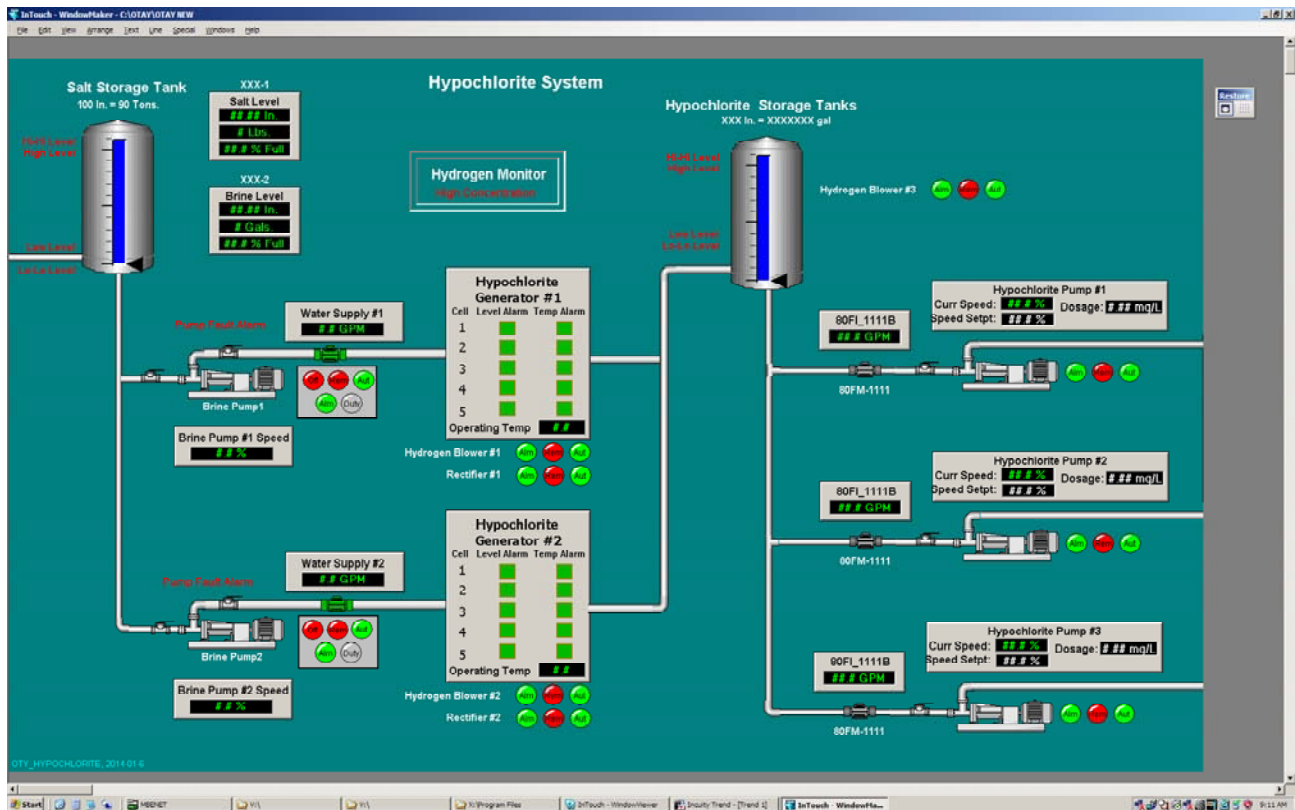
Generator Capacity Redundancy – Complete redundancy of generator capacity is required to meet the Typical Flow/ Typical Dose chlorine use rate of 868 lbs/day. The Contractor shall address how they intend to meet redundancy (assume the largest single unit of equipment out-of-service) at the Maximum Flow / Maximum Dose chlorine use rate of 2668 lbs as Cl₂ for a period of 24 hours.

Spill Containment – The Contractor shall provide spill containment around all OSHG equipment within the Chlorine Room and hypochlorite/salt tank storage areas. Storage tank spill containment requires 120% capacity of the vessels stored in those areas. Spill containment within the Chlorine Room is intended to keep incidental spills from leaving the building. A berm similar to that around the chlorine dioxide generator will be acceptable. Containment areas shall be plumbed to the drain system and equipped with valves or flexible plugs similar to those used in the Otay Chemical Feed Room. Containment areas shall be coated with an epoxy with a polyurethane topcoat. Spill containment areas shall be equipped with spill detection and alarms integrated into the Otay SCADA system.

OSHG System PLC -- The system shall be equipped with a Modicon PLC, or equal, similar to those used in the existing chlorine dioxide and fluoride systems.

Integration with Otay SCADA System -- The Contractor shall connect the OSHG system to Otay's SCADA system to provide remote operation, monitoring and data logging, including HMI screens, as required, to display data and control on the OSHG system. Figure 2 below is an example of Otay's OSHG system HMI screen showing the level of monitoring and control expected is displayed below. Integration of the system includes, but is not limited to, alarms, data logging, PLC status monitoring, and documentation. Integration of the generator PLC with the existing plant SCADA system shall be performed by EMA, or equal.

Figure 2 – Otay OSHG System Wonderware Screen



Generator Efficiency -- The hypochlorite generation system shall meet the following performance standards.

Hypochlorite System Performance Requirements	
Concentration of Sodium Hypochlorite Solution	0.8% 8,000 ppm +/- 0.05%
Salt Required to Produce 1 lb of Free Available Chlorine (FAC)	3.0 lbs maximum
Power Required to Produce 1 lb of Free Available Chlorine (FAC)	2.0 kW maximum
Water Required to Produce 1 lb of Free Available Chlorine (FAC)	15 gallons
The electrolytic system shall generate an aqueous solution of a minimum concentration of 0.8 percent ($\pm 0.05\%$) by weight sodium hypochlorite expressed as chlorine. The minimum capacity shall be demonstrated to be equal to the capacity specified while not exceeding the maximum raw material quantities.	

Hydrogen Management –The handling of this potentially dangerous by-product is an extremely important element of the generator design.

- A. The hydrogen dilution system shall dilute the hydrogen concentration to below 25 percent of LEL or 1 percent by volume.

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- B. Hydrogen dilution to be two step process.
 - 1. Passive vent with at each electrolytic cell. NOTE: For operator safety, the cells are operated at atmospheric pressure, so that hydrogen gas cannot be contained or pressurized. Pressurized cells can be dangerous.
 - 2. Blower assist fan installed on each generator skid.
 - 3. Forced draft blowers at the solution storage tank(s).

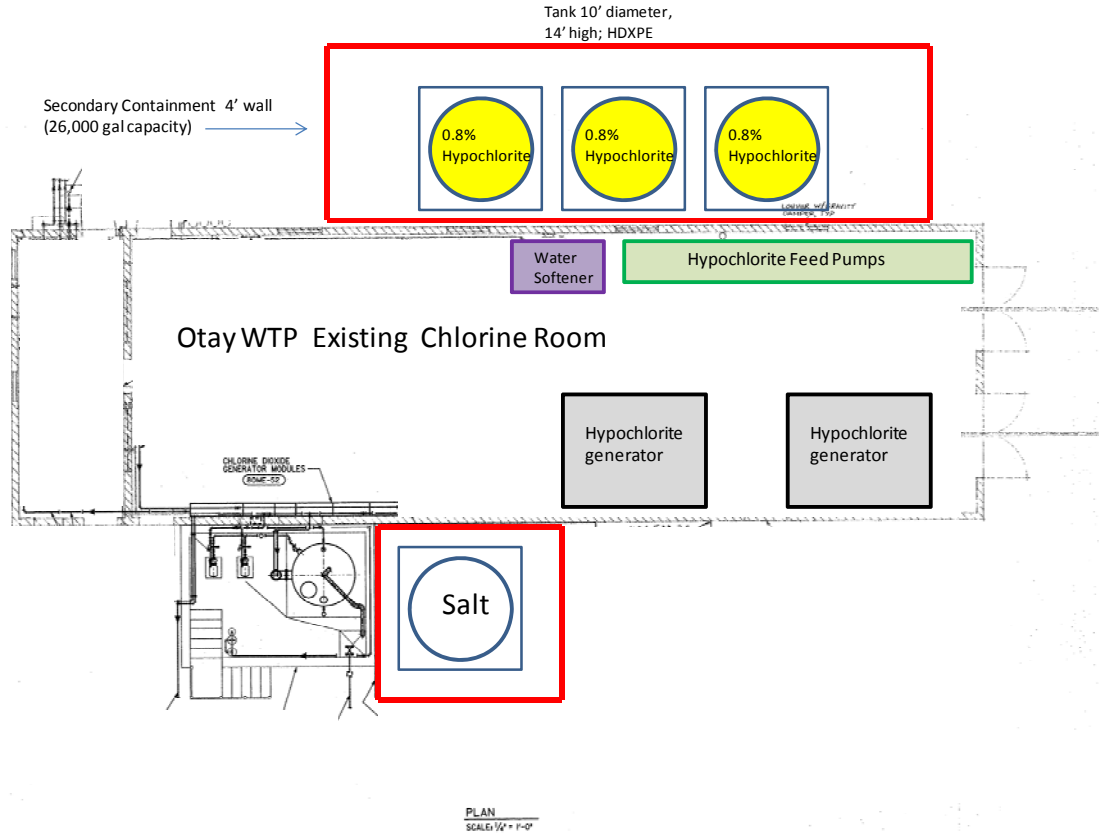
- C. The Solution Tank(s) hydrogen dilution blower shall be provided. There shall be two blowers installed so that if one blower fails, the second blower is activated. The hydrogen dilution system design shall incorporate the following safety features:
 - 1. Blower current sensing.
 - 2. Differential pressure switch positioned in the dilution ductwork vent stack.
 - 3. Software controlled safety interlocks to detect control system sequence failure.

- D. A Hydrogen Gas Room Monitor/Detector shall be provided.
 - 1. The hydrogen gas monitoring system shall continuously measure and display gas concentration and provide alarms when preset limits are exceeded. Transmitter will send signal to local controller and/or PLC.

Hypochlorite Storage Tanks – A minimum of 48 hours of hypochlorite storage at the Typical Flow/Typical Dose chlorine use rate (868 lbs/day) shall be provided. Hypochlorite tanks shall not be located within the Chlorine Room. Hypochlorite tank shall be sited to be shaded from direct sunlight. All tankage shall be enclosed within a secondary containment area capable of handling 120% of the total tankage capacity. Tanks shall be equipped with seismic restrains compliant with current earthquake standards. The Contractor is encouraged to consider alternate tankage configurations that will best suit this system.

Tanks shall be equipped with both manual and ultra sonic tank level sensors. Ultra sonic sensors shall be Endress+Hauser, or equal.

*On-Site Hypochlorite Generation System
 Conceptual Drawing*



Hypochlorite Piping – The existing plant PVC piping was not designed or intended to carry sodium hypochlorite. The glues used in existing plant PVC piping may be incompatible with sodium hypochlorite (especially after carrying acidic fluids for several years). Therefore, long term use of existing PVC pipe to carry hypochlorite solutions will not be acceptable. With the exception of the pipe temporary hypochlorite feed system and the pipe from the chemical feed room to the basin influent application point, all PVC piping used to carry sodium hypochlorite will be constructed using SCH 80 PVC and ISP 724 glue. PVC piping shall have UV protection. The Designer shall determine if a coating is to be applied or have special PVC for UV protection. If existing piping used in the temporary hypochlorite feed system fails, it shall be the Contractor’s responsibility to repair and/or replace the damaged pipe.

Hypochlorite Feed Pumps – Each hypochlorite feed pump shall be capable of accurately feeding the entire range of Maximum Flow/ Maximum Dose (2668 lbs/day as Cl₂) to Minimum Flow /Minimum Dose (234 lbs/day as Cl₂). The system should be equipped with a redundant pump of identical capacity. Hypochlorite feed pumps should be flow-paced to either the plant influent flow or plant effluent flow based on the designated application point. The system shall use the existing chlorine solution lines

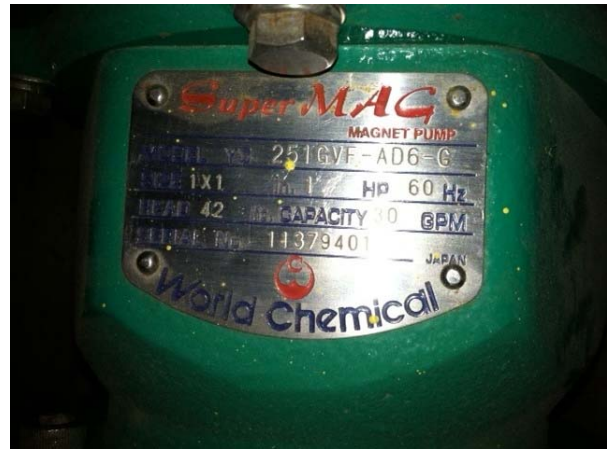
located at the northwest corner of the existing Chlorine Building.

The hypochlorite feed system shall have the capability to feed up to Maximum Flow/ Maximum Dose (2668 lbs/day as Cl_2) simultaneously to:

1. Basin inlet (flow paced on Plant Influent Flow)
2. Filter effluent channel (flow paced on Plant Effluent Flow)

The Contractor should pay particular attention to designing in the ability to isolate and flush each pump for ease and safety of maintenance.

The Contractor is welcome to consider alternate approaches to the hypochlorite feed system. Otay has two brand-new mag-drive pumps (shown below, TDH 42', capacity 30 gpm) that are available to be used in a common pump hypochlorite feed system similar to the existing chlorine dioxide feed system.



Salt Storage – A minimum of 30 days generator capacity at Typical Flow / Typical Dose (868 lbs/day as Cl_2) shall be provided. All salt storage shall be enclosed within a secondary containment area capable of handling 120% of the total tankage capacity. Secondary containment for salt storage shall have a suitable coating. Brine tank system shall include filters for dirt and particle removal from the brine stream. The salt storage system shall monitor both salt level and brine level.

Available Electrical Capacity – An existing 480V, 600A service enters the Chlorine Room building at MCC-12E. There are currently demands on this MCC which will remain after the removal of the gas chlorine system. Adequacy of this power supply to meet Maximum flow/Maximum dose OSG chlorine requirements is not known. It is the responsibility of the Contractor to determine the adequacy of this service and to provide whatever equipment necessary to meet anticipated service requirements. The Contractor must also address the adequacy of the plant's existing standby power generator and the new on-site system. The OSHG should be capable of the Typical Flow/Typical Dose chlorine use rate (868 lbs/day) capacity during the operation of the generator. If necessary, the Contractor will provide whatever load shedding switchgear

is needed to maintain hypochlorite feed during a power outage.

Service Water Pre-filters – The Contractor shall provide two (2) duplex manifolds each with two (2) industry standard 10-inch Housings, each holding a 10” cartridge. This is for dirt, rust, and particulate matter from softener’s feed water, including four (4) Pressure Gauges to measure pressure drop across filters.

Water Softeners -- Water for use in the hypochlorite generators will be softened using two sets of twin tank ion exchange water softeners per generator skid with a hydraulically-driven, flow-controlled switchover valve. When the ion exchange capacity of one resin tank is nearly exhausted, the softener control mechanism will automatically divert flow to the alternate tank while initiating a brine backwashing of the first tank for regeneration of the ion exchange resin. Minimum efficiency will be 3,727 grains exchange per pound of salt.

Water Hardness Monitoring -- In-line hardness monitors capable of measuring hardness levels from 0.3 to 100 mg/L expressed as mg/L of CaCO₃ shall be installed downstream of each water softening system. The analyzer shall be a HACH Model SP 510 or equal.

Water Softener Backwash Water – Backwash water from the water softener shall be recycled back to the reservoir via the Chlorine Room drain line. The Contractor shall be responsible for determining the adequacy of this drain line and connecting the necessary equipment to the drain.

Generator Warranty -- Prior to acceptance of the sodium hypochlorite generation system, the Contractor shall provide written warranty from the system manufacturer that includes the following statements:

1. Contractor shall inspect the installation during and after completion and provide written certification that the sodium hypochlorite generation system is free from faults and defects and is in conformance with the Contract Documents.
2. The Contractor must provide the following after sales services:
 - a. Must provide a 24-hour 365-day toll free service hot line.
 - b. Next day technician availability.
 - c. Same day or overnight parts availability.
 - d. Must provide evidence of spare parts availability on this system such as electrolytic cells, rectifiers, control cabinets, metering pumps.
3. Sodium hypochlorite generator system will remain free of defects for a period of three (3) years from the date of final acceptance.

4. If the equipment requires repair or replacement during the three (3) year warranty period as a result of ordinary wear and tear under normal conditions, the Contractor will repair or replace such equipment as required without cost (including shipping, handling and labor) to the City.
5. The electrolytic cells including cell housing body shall have a three (3) year full replacement warranty and a prorated straight-line replacement warranty for years 4 to 7 from the date of final acceptance.
6. The Contractor shall guarantee the minimum performance of the system for electrical consumption, salt usage, and water usage for a minimum of three (3) years following final acceptance of installation.

VI. Modifications to the existing Chlorine Dioxide Generation System:

General System Considerations -- The existing system uses gas chlorine and a sodium hypochlorite solution to generate chlorine dioxide. Use of hypochlorite in lieu of chlorine gas requires modification of the existing system. A proposal for these modifications is attached as Appendix B. Siemens, or a contractor of equal experience in this type of modification, shall perform these modifications to the feed chlorine dioxide generator.

Hydrochloric Acid Feed – In the modified system, hydrochloric acid (15%) reacts first with the hypochlorite to produce molecular chlorine. That then reacts with the sodium chlorite to produce chlorine dioxide. The Contractor will make the modifications to the existing generator. The projected acid feed rate is ½ gallon per pound of chlorine dioxide generation. Given a maximum generation rate of 850 lbs/day of chlorine dioxide, this results in a design feed rate of 425 gallons of acid per day. At the Typical flow/ Typical dose rate the chlorine dioxide demand is 335 lbs/day resulting in an acid use of 168 gallons per day. These acid consumption rates require the use of a bulk storage tank.

Bulk hydrochloric acid (15%) will be stored in a 7,500 gallon tank. The Contractor shall remove the existing ferrous chloride tank and provide an appropriate acid bulk tank in that location. The acid tank shall be equipped with both manual and ultra sonic tank level sensors. Ultra sonic sensor shall be Endress+Hauser, or equal, and integrated into the Otay SCADA system. The Contractor shall install new chemical unloading piping and double walled 1' PVC line from the bulk tank to the chlorine dioxide generator. The Contractor will also provide a containment wall around the hydrochloric acid bulk tank – similar to those around the fluoride and ammonia tanks – capable of containing 120% of the contents of the acid tank. Containment area shall be coated with a suitable acid-resistant coating.

Water Supply – The existing chlorine dioxide generator requires 30 gpm @ 50 psi. In addition, the Batch Tank off-gas removal system uses 20 gpm @ 40 psi. The modified system will use the existing water pressure and flow requirements. The Contractor shall provide any equipment necessary to obtain the necessary flow and/or pressure for the modified chlorine dioxide generation system.

VII. Project Phasing & Implementation:

Project Construction Planning – The project will be phased and constructed to minimize impact to plant operations. The figure below shows a “suggested” approach to the phasing of this project. This plan provides for the least disruption of plant operations and fewest shutdowns. The Contractor is welcome to propose alternative approaches to this plan.

Otay Hypochlorite Project -- Construction Phasing Plan													
Task													
Construct and commission temporary hypochlorite system	■	■											
Commission and operate temporary hypochlorite system			■	■	■	■	■	■	■	■	■		
Demo existing gas chlorine system			■	■	■	■							
Construct on-site hypochlorite generation system							■	■	■	■	■		
Commission on-site system											■		
Decommission temporary hypochlorite system												■	
Perform modifications to chlorine dioxide system													■

System Start-up & Commissioning -- The Contractor shall perform a 7 day start-up and commissioning test of the temporary hypochlorite system and the OSHG system. Should a failure occur during this test period, the 7 day test period will begin again after the correction of the problem. Successful completion of the 7 day testing is a prerequisite to moving on to the next phase of work.

Purchase of Chemicals -- Otay will purchase all treatment chemicals (salt, commercial strength sodium hypochlorite, acid) that will be used in this project.

Training -- The Contractor will provide training on the new OSHG system. At a minimum training will include:

1. General training for all Otay personnel. One training shall be delivered twice. These sessions will cover safety and handling of sodium hypochlorite (health effects, PPE, and MSDS review) and an overview of the operation of the OSHG system (including remote operation from the HMI). These sessions will be at dates and times mutually agreeable to the Contractor and the Otay supervisors. (Expected training duration: 2 hour per session.)
2. Maintenance training. Two trainings shall be provided for the Otay Maintenance section. The first training will include an overview of OSHG system equipment, daily inspection of the system, required scheduled maintenance tasks on the system, and repair & replacement of system components. The second training will focus on the hypochlorite feed system, daily inspection of the system, required scheduled maintenance tasks on the system, and repair & replacement of system components. These sessions will be at dates and times mutually agreeable to the Contractor and the Otay Maintenance Supervisor. These trainings shall be delivered by the equipment supplier or manufacturer. (Expected training duration 2 hours per session.)

3. I & C training. Two training intended for Otay's Instrumentation & Control Technicians. The first training will cover OSHG system and its interface with the Otay SCADA system. This training will include: an overview of the control system & structure and a detailed review of the structure, code and operation of this system. This session shall be delivered by the system integrator on for this project. The second training will cover the operation and maintenance of the instrumentation components of the OSHG system (level/temp sensors, hydrogen monitor, hardness analyzers, flow sensors). This session will be delivered by the OSHG system manufacturer or instrument equipment supplier(s).

Transition Between Chlorine Gas and OSG – Between 1 November and 30 May the plant can be shut down for a maximum 3 consecutive days to convert to the OSG system. Between 1 June and 30 October plant shutdowns are limited to 8 hours. Because of the hazardous nature of chlorine gas, no demolition of any part of the chlorine gas system will be allowed while the chlorine gas system is in service. Otay staff will drain and decommission the gas chlorine system and formally turn it over to the contractor.

Contractor Staging Area -- The staging area for the project is the triangular shaped area between the north side of the filters and security guard shack. The vegetated area to the south of the Chlorine Room cannot be used or disturbed.

O&M Manuals – The Contractor shall provide four copies of an O&M manual for the OSHG system including all subcomponents and instrumentation.

Gas Chlorination System Demolition – The Contractor will remove all existing chlorine equipment from the Chlorine Room. A schedule of the disposition of equipment and materials is shown below. Not included on this list, but part of the Contractor's scope-of-work is the removal of electric switchgear, breakers, and other equipment that powered the old gas chlorination equipment. The Contractor will also remove and decommission instrumentation alarm wires and circuits related to the gas chlorination equipment that is being removed.

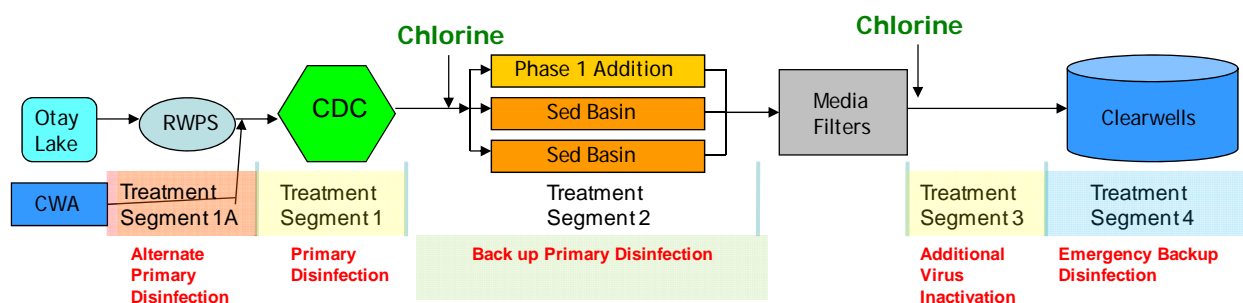
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Otay Hypochlorite Project -- Chlorine Room Equipment Removal and Demolition			
Item #	Item Description	Disposition	Comments
1	Scrubber System	Remove and transport to CW	Remove dispose of caustic in scrubber ^{1.}
2	Chlorinator #1	Remove to Alvarado ^{2.}	
3	Chlorinator #2	Remove to Alvarado ^{2.}	
4	Chlorinator #3	Remove to Alvarado ^{2.}	
5	Chlorinator Spare	Remove to Alvarado ^{2.}	
6	Evaporator #1	Remove to Alvarado ^{2.}	
7	Evaporator #2	Remove to Alvarado ^{2.}	
8	Motorized Vacuum Valves & PRV x2	Remove to Alvarado ^{2.}	
9	Expansion Tank & burst plug	Remove to Alvarado ^{2.}	
10	Vacuum sensor	Remove to Alvarado ^{2.}	
11	Halogen Valve System x 2	Remove to Alvarado ^{2.}	
12	Hoist #1 (north)	Deliver to Otay Maintenance	
13	Hoist #2 (south)	Deliver to Otay Maintenance	
14	Ton Container Roller Cradles x 72	Remove to Alvarado ^{2.}	
15	Ton Scale #1	Remove to Alvarado ^{2.}	
16	Ton Scale #2	Remove to Alvarado ^{2.}	
17	DI/Water Softener Unit	Rental - Return to Siemens	Coordinate with plant staff
18	Chlorine Alarm Buttons and conduit	Remove and dispose	
19	Chlorine Sensors and conduit	Remove and dispose	Salvage sensors and deliver to I&C
20	PVC Chlorine gas piping	Remove and dispose	
21	PVC Chlorine solution piping	Remove and dispose	
22	Iron Chlorine piping	Remove and dispose	
23	Concrete chlorine pedestal pad	Remove and dispose	
24	Concrete evaporator pedestal pad	Remove and dispose	
25	Hoist Rail (interior & exterior)	Remove and dispose	
26	Chlorine gas control panel	Remove and dispose	
27	Chlorine gas sensor panel	Remove and dispose	
28	SCBA air lines and reels (2)	Remove to Alvarado	
29	Chlorine room exhaust fan	Remove to Alvarado ^{2.}	
30	UPS Box (southwest corner)	Remove and dispose	
31	Scrubber curb & pedestal pad	Remove and dispose	
Notes:			
1. Hazardous waste disposal			
2. Alvarado Water Treatment Plant, 5540 Kiowa Drive, La Mesa, CA 91942			

Transition Chlorination Plan -- Operationally, one of the most challenging aspects of Otay's on-site hypochlorite project will be compliance with the required disinfection treatment throughout the project. The period between the complete removal of the existing gas chlorine system and the construction of an on-site hypochlorite generation system is estimated at three to five months. Since the plant cannot be taken out-of-service for this entire period, alternative operations must be implemented to maintain an adequate level of disinfection. This task is further complicated by the fact that both the chlorination system and the chlorine dioxide system will be out-of-service during this transition.

The transition period between the demolition of the current gas chlorine system and the construction of the on-site hypochlorite generation system will therefore require the construction and operation of a temporary chlorination system. The Contractor will determine the feasibility of the approach outlined below, and implement it, or propose an alternative plan that is acceptable to the City.

Requirements of the Transition Chlorination System: The Transition Chlorination System (hereafter referred to as TCS), must have be able to supply feed rate of 200 to 868 lbs/day (of chlorine equivalent) to one of both of the chlorine application locations (basin influent or post-filter). The application points are shown in the figure below. Redundancy of feed capability to the post-filter application location is also required.



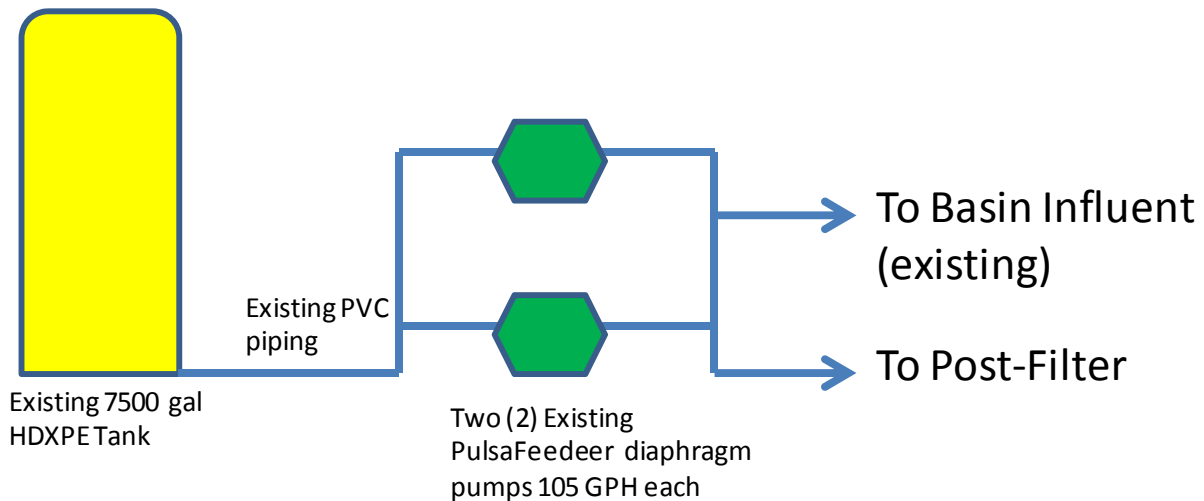
Hypochlorite Use: The TCS will use commercial strength (12.5%) sodium hypochlorite as the chlorination chemical. The City will purchase this chemical in bulk deliveries.

Proposed Transitional Chlorination System (TCS): It is proposed that the TCS will use elements of the ferrous chloride system which are no longer in use. A schematic of the proposed system is shown in the figure below.

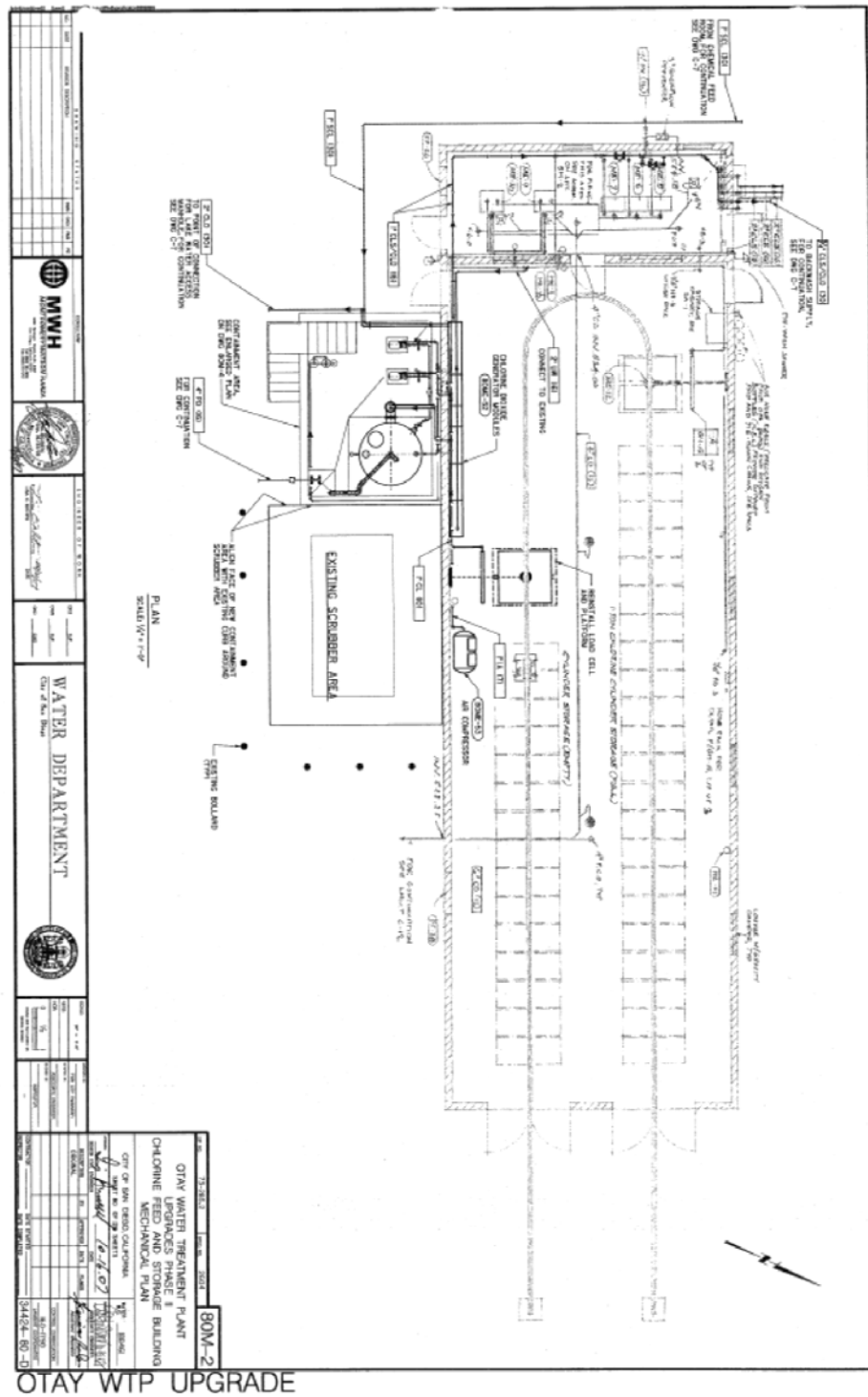
Hypochlorite Storage: The proposed system would use the existing ferrous bulk tank (10' diameter, 14' high, HDXPE) for storage of commercial strength sodium hypochlorite. The existing tank is located within Otay's bulk chemical secondary containment and has existing piping to the bulk chemical unloading station. Use of a large bulk tank will reduce materials handling and cost as the chemical can be purchased and shipped in 50,000 lb loads. At the typical dose of 500 gal/day, time between loads will be 10 to 12 days. Hypochlorite will then be carried through the existing 2" PVC line to the ferrous chloride pumps.

Otay On Site Hypochlorite Generation Project
Basis of Design Report -- Final
RFP Site Walk 28 January 2014

Chemical Feed Pumps: The two ferrous chloride pumps (PulsaFeeder Model 7120-S-E, capacity 105 GPH) are fully functional and integrated into Otay's SCADA system. The pumps are equipped with all of the necessary safety features, including: pressure relief/bypass valve, back pressure valve, pulse dampeners, pressure gauges, and shutoff valves. The pump's turndown ratio is 200:1. The discharge of the ferrous pumps is currently piped to the basin influent; temporary piping must be installed to post-filter chlorine application point.



Appendix A – Existing Chlorine Room with Chlorine Dioxide System



Appendix B -- Chlorine Dioxide Generator Modifications

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July 18, 2013

UNPRICED SCOPE

Mr. James McVeigh
 Senior Water Operations Supervisor
 Otay Water Treatment Plant
 1200 Wueste Road
 Chula Vista, CA 91915 USA
 Phone: 619-980-2908
 Email: JMcVeigh@sandiego.gov

**RE: CHLORINE DIOXIDE GENERATOR UTILIZING 0.8% SODIUM HYPOCHLORITE SUPPLY
 OTAY WATER TREATMENT PLANT – CHULA VISTA, CALIFORNIA
 Siemens Quote No. Q130716JM1**

Siemens is pleased to offer the following proposal for the supply of two **Millennium III™ T-850 WM** chlorine dioxide generators. The **Millennium III™ T-850 WM** is a manual three-chemical (sodium chlorite / hydrochloric acid / sodium hypochlorite) chlorine dioxide generator that will allow the Otay Water Treatment Plant to eliminate chlorine gas as a chlorine dioxide precursor chemical.

These generators would replace the existing two-chemical chlorine dioxide generators currently located at the Otay Water Treatment Plant. The existing distribution equipment to include the batch tank, flow control valves, chlorine dioxide solution pump, and related piping and appurtenances would remain in place.

The objective is to generate chlorine dioxide with high efficiency utilizing 25% sodium chlorite, 15% hydrochloric acid, and 0.8% sodium hypochlorite. While Siemens cannot guarantee 95% efficiency with this generator design, every effort will be made to ensure that the generators are converting sodium chlorite as efficiently as is possible. Design inputs are summarized in Table 1 as follows:

1. DESIGN INPUTS

San Diego – Otay Water Treatment Plant	
Peak Flow, MGD	34
Average Flow Rate, MGD	18
Approximate ClO ₂ Dose Rate mg/L	0.6 – 3.0 continuous feed average dose, nominally 1.0 PPM
ClO ₂ Use Rate lbs/day	65 – 850 based on seasonal variations
Current Average ClO ₂ use rate	~340 lbs/day
Current Service Rate	Generator set-point of 675 lbs/day, approximate 50% run time

Table 1 – Design Inputs

2. EQUIPMENT PROPOSAL

Siemens recommends the replacement of the existing two-chemical generators with two **Millennium III™ T-850 WM** designed to utilize a 0.8% sodium hypochlorite supply. When compared to retro-fitting the existing generators, the benefits of new generators are:

1. Ease of installation: a new generator provides a fully-engineered, factory-built, modular design that can be easily placed into operation at the site.
2. Reduced site time: a new generator requires less site time to bring to operational status when compared to the field work involved in retrofitting an existing generator.
3. Full factory warranty: Siemens warrants the Chemical Feed System complete for a period of twelve (12) months from acceptance or eighteen (18) months from shipment, whichever occurs first.

Siemens Water Technologies LLC
 Industry Sector

2650 Tallevast Road
 Sarasota, FL 34243
 USA

Tel: +1 941-355-2971
 Fax: +1 941-359-7985
www.water.siemens.com

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4. Cost Effective: as a result of the benefits listed above, a new generator is a more cost effective option when compared to field-installed parts.

2.1 Equipment Description

Siemens shall provide two Millennium III™ T850-WM three chemical manual chlorine dioxide generators capable of producing up to a maximum of 850 lbs/day of chlorine dioxide for delivery to the chlorine dioxide batch tank. The production range of these generators is 65 to 850 lbs of ClO₂ per day each. The generators comprise principally:

Qty	Description
2	Chlorine Dioxide Generator Siemens Millennium III™ T850-WM chlorine dioxide generation system capable of 10:1 turndown range, with production capability from 65-850 lbs/day of ClO ₂ each. Wall-mounted design constructed of HDPE backboard with surface-mounted components. Includes King rotameters.

Table 2 – T850-WM Major Components (standard system)

2.2 Controls Impacts

Existing controls shall be integrated with the proposed unit. Controls impacts are minimal with the following controls impacts are identified:

1. Integration of new magnetic flow meters for monitoring the supply of hydrochloric acid and sodium hypochlorite to the chlorine dioxide generators.

2.3 Distribution System Impacts

The current standard production rate of chlorine dioxide at the Otay Water Treatment Plant is 675 lbs/day. At this production rate, the chlorine dioxide generator runs approximately 50% of the time, per Otay WTP personnel. The water booster pump that is currently installed on the existing generator produces a flow rate of 35 gallons per minute. At a production rate of 675 lbs of ClO₂ per day and a generator water flow rate of 35 gallons per minute, the concentration of the chlorine dioxide solution produced is approximately 1,600 ppm.

A conversion of the generator to function with 0.8% sodium hypochlorite will have an impact on the concentration of chlorine dioxide produced at all points in the generator production range. The weak bleach conversion will require a larger eductor to handle the approximate sixteen-fold (12.5% / 0.8% = 15.6) increase in precursor chemicals being drawn through the eductor. The water booster pump that is currently in place will provide sufficient volume and pressure to run the new eductor efficiently. It may be necessary to increase the volume of water through the eductor to approximately 50 gal/minute, as discussed during our recent meeting. With the chlorine eductors being taken off line, water supply to the pump will not be an issue. At a production rate of 675 lbs/day the concentration of the chlorine dioxide solution produced by the generator will be approximately 1,000 ppm. The consequence of this is that the generator will have to run approximately 80% of the time. If the ClO₂ production rate is set to 850 lbs/day, the generator will run approximately 65% of the time.

Table 3 summarizes the production rate and subsequent precursor demands at various rates needed as follows:

Production Rate (lbs/day ClO ₂)	Precursor Demand (gal/day)		
	25% Sodium Chlorite	15% Hydrochloric Acid	0.8% Sodium Hypochlorite
850	475	360	7,252
675	377	286	5,759
340	190	144	2,901
85	48	36	725

Q130716JM1
 Page 2 of 7
 Template Rev. 5/30/12

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Table 3 - ClO₂ Precursor Use Rates

2.4. Sodium Hypochlorite Dilution

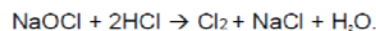
The supply of 0.8% sodium hypochlorite to the chlorine dioxide generators will be provided by on-site electrolytic generators. Provision of 0.8% sodium hypochlorite through the dilution of conventional 12.5% sodium hypochlorite is no longer under consideration.

2.5 Process Description

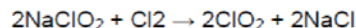
As you are aware, the existing chlorine dioxide generator utilizes sodium chlorite and chlorine gas to produce chlorine dioxide. Siemens Millennium III™ T-Series generators produce chlorine dioxide (ClO₂) in a two stage continuous process under vacuum conditions to generate chlorine dioxide safely and efficiently. In the first stage, molecular chlorine gas is generated *in situ* by the reaction of a 0.8% solution of sodium hypochlorite and a 15% solution of hydrochloric acid. In the second stage, the chlorine gas is reacted with a 25% sodium chlorite solution to produce chlorine dioxide.

Efficiency and yield in both cases discussed herein is maximized by reaction of chemical reactants in their concentrated form under vacuum. These reaction conditions favor the immediate formation of chlorine dioxide, thereby minimizing byproduct formation found in other types of generators.

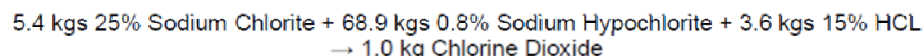
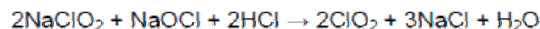
The first stage of the Millennium III™ T-Series generator reaction process combines the sodium hypochlorite solution with the hydrochloric acid solution to produce chlorine in-situ under vacuum according to the reaction:



A subsequent second stage reaction follows immediately and is between the sodium chlorite solution and the in situ produced chlorine gas (produced under vacuum) according to the reaction:



The first and second stage reaction chemistry of the Millennium III™ T-Series generator process is a continuous inline combined reaction process that occurs in milliseconds under vacuum, and the overall combined reaction is described by the following:



As chlorine dioxide is formed in the reaction column (under vacuum), it is immediately ejected into the generator's motive/dilution water stream that drives the generator's vacuum eductor. The motive water stream is at a constant flow rate and constant pressure (using the water booster pump and pressure regulator provided as a standard part of the generator assembly skid).

Exiting the generator is an aqueous chlorine dioxide solution of variable but adjustable strength (can be for example a 200 to 3,000 PPM ClO₂ aqueous feed solution - the actual concentration produced is based on the PLC settings and the reagent feed rate rotameter settings).

- Unlike other generation systems, the Millennium III process does not require reagent metering pumps or pH control, or feed of excess chlorine (above the stoichiometric requirements of the above reaction) or acid

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addition to the motive water stream driving the generator's eductor.

- Unlike other generation systems, the Millennium III process does not require that molecular chlorine gas first be injected to the motive water stream to pre-dissolve chlorine in the motive water to create hypochlorous acid (always in an equilibrium with hypochlorite at pH 7.0), the latter of which can precipitate an alternate and less efficient pathway to chlorine dioxide formation which also leads to much higher by-product levels (chlorate, un-reacted by-product chlorite, caustic, and THM's/THAA's) in the produced chlorine dioxide aqueous feed stream.
- The pH of the Millennium III produced aqueous chlorine dioxide feed stream is greater than 6.0 and less than 7.0, and nominally averages 6.5 to 6.8. The pH of the produced aqueous chlorine dioxide feed solution from most other competitive chlorine gas/chlorite based ClO₂ systems is typically < 5.0 and nominally closer to 4.0 which can create a more corrosive environment.

2.6 Yield Determination Analysis

Yield shall be determined as the ratio of chlorine dioxide, chlorite and chlorate generated to the theoretical stoichiometric maximum. The yield shall be demonstrated by an amperometric analysis capable of differentiating between chlorine, chlorine dioxide, chlorite and chlorate. The theoretical stoichiometric maximum shall be determined from the feed rates of the two reacting chemicals. Analysis shall be confirmed by the procedure as described in Standard Methods for the Examination of Water and Wastewater, APHA-AWWA-WPCF, 20th edition 1998, Amperometric Method II, 4500-ClO₂E.

3. PROGRAM SCHEDULE

A program schedule shall be provided when more information is available regarding the timing of the electrolytic supply of sodium hypochlorite at the Otay Water Treatment Plant.

- Submittals: 4-6 weeks after contract acceptance
- Provision of 0.8% electrolytically-generated sodium hypochlorite (Responsibility of Otay Water Treatment Plant)
- Equipment: 12 – 16 weeks after receipt of approved submittals pending production approval at the time of order

Siemens shall provide 3 electronic copies and 1 hard copy of the operating manual with the shipment of the generator.

The above delivery schedule is based on credit approval and receipt of approved contract and submittals.

4. STORAGE/ SITE

The unit must be shielded from direct sunlight and rain, and protected from electrical surges such as lightning. Siemens requires the chlorine dioxide equipment to be located in a building with proper ventilation in a non-condensing environment. Operating temperature range is 40°F-104°F. Sites not meeting these minimum requirements may invalidate the equipment warranty. The generation system and precursors should also be protected from freezing. The current chlorine dioxide generators are suitably located.

The customer shall be responsible for all civil works, mechanical, electrical, and plumbing at the site, including the following as shown in Table 5:

Potable Water	Up to 50 gpm at a minimum 80 psi
Safety	Provide and install a safety shower and eye wash within easy access of each

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	generator
Dedicated Power Source	240/480 VAC, Three Phase; Dedicated 20 Amp circuit breaker AND; 120 VAC, with Dedicated 20 Amp circuit breaker
Floor Space/Door Allowance	Wall-Mount Generator Backboards to be supplied are: 36" W x 62" H x 0.75" D
Drain	2"
Sodium Hypochlorite	Electrolytic Supply
Sodium Chlorite – 25%	475 gpd (at generator maximum)
Sodium Hypochlorite – 0.8%	7,252 gpd (at generator maximum)
Hydrochloric Acid – 15%	360 gpd (at generator maximum)

Table 5 – Customer Responsibilities

6. CHEMICALS

Siemens can provide a supply of **AKTA KLOR 25** (sodium chlorite, 25% aqueous solution) in drum, tote or bulk quantities. **AKTA KLOR 25** is registered with EPA (No. 21164-6) and meets requirements of NSF/ANSI Standard 60 and AWWA B303-05. A separate quotation for **AKTA KLOR 25** can be provided upon request.

7. SERVICES

7.1 Installation

Siemens will provide installation services with the provision of the equipment described above. It is anticipated that installation of the new generator will require two Siemens personnel for two days.

7.2 Start-up and Training Services

Siemens shall provide a service representative for three (3) eight hour day during the start up phase of the project. Two days shall be dedicated to equipment inspection, start up and process verification. One day shall be dedicated for training on the safe and proper handling of chlorine dioxide, operation of the equipment, and analytical methods to the owner's operations and laboratory personnel. Startup, training and installation supervision are set up for a single visit.

7.3 Ongoing Services

A Siemens service technician can also visit the site to perform regular routine maintenance on the generator, optimize chemical dosing, provide safety training for the Water Plant staff, if requested, and provide emergency technical or mechanical response as necessary. A separate quotation for ongoing services as described can be provided upon request.

8. PRICE

Siemens is pleased to offer:

- Two (2) **Millennium III™ T850-WM** chlorine dioxide generators for a total of **\$XXX,XXX** F.O.B factory with freight allowed to jobsite. This price includes Siemens start-up and training services. This training program includes analytical, applications support and safety reviews with operators and lab staff.
- Additional days required on site will be charged at \$1,200/day plus travel expense.

The price associated with this quote will remain in effect for a period of ninety (90) days. If we are not in receipt of an order by the end of this firm price period, we reserve the right to modify the prices quoted.

Terms of payment are NET 30 days from date of invoice. These prices do not include any applicable taxes.

Siemens warrants the Chemical Feed System complete for a period of twelve (12) months from acceptance or eighteen (18) months from shipment, whichever occurs first.

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The attached Siemens Water Technologies LLC. Terms and Conditions are considered part of this proposal and shall prevail.

Thank you again for this opportunity to allow Siemens Water Technologies LLC Inc. to quote on your chlorine dioxide requirements. If you have any questions or need additional information, please contact me at 909-837-9908.

Sincerely,

Siemens Water Technologies LLC

Dan Trybulski

Dan Trybulski
Technical Sales Representative, Municipal Services

Figure 3 - Otay Chlorine Service Water Supplies

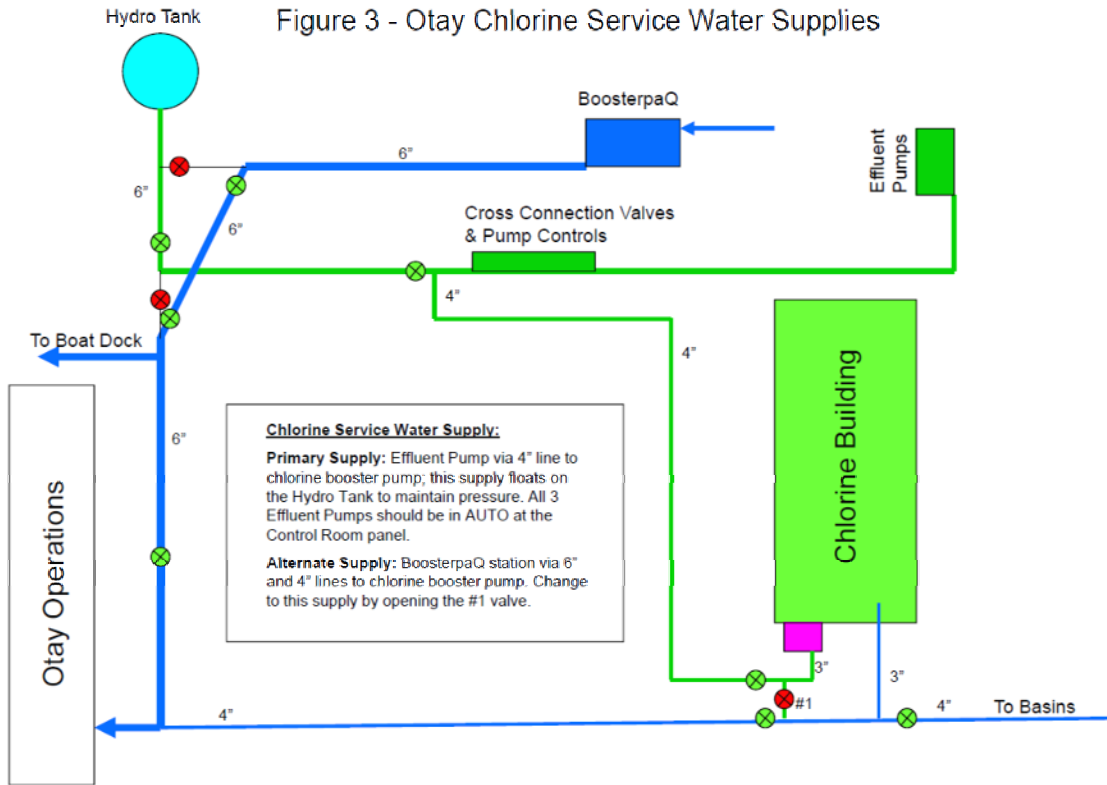
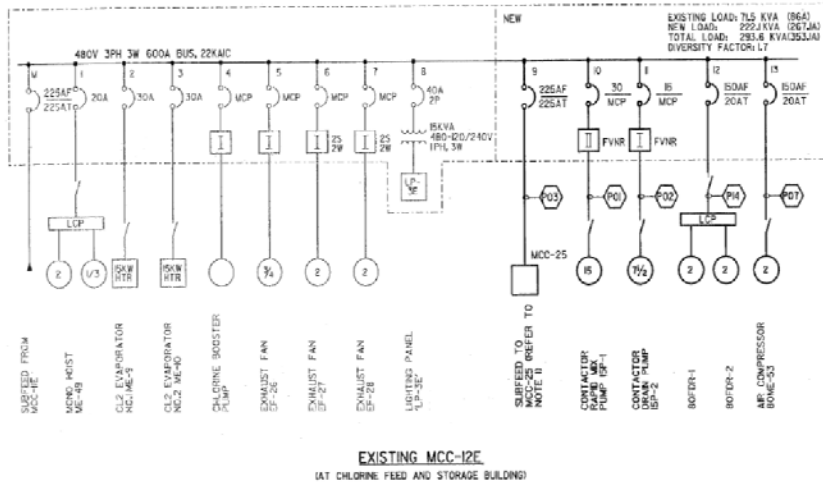


Figure 4



NOTES:
 1. PAC SYSTEM VENDOR SHALL PROVIDE MCC-25 FOR POWDERED ACTIVATED CARBON FEED SYSTEM. VENDOR ALSO RESPONSIBLE FOR PAC EQUIPMENT. REFER TO SHEET 406-1 FOR MCC-25 LOCATION.

TS-245.2		2604	E-4
OTAY WATER TREATMENT PLANT UPGRADES PHASE II SINGLE LINE DIAGRAMS - 2			
CITY OF SAN DIEGO, CALIFORNIA		SHEET 93 OF 93 SHEETS	
DATE: 10-16-07		DESIGNED BY: [Signature]	
DRAWN BY: [Signature]		CHECKED BY: [Signature]	
DESCRIPTION	BY	APPROVAL DATE	FLAME
ORIGINAL			
CONTRACTOR		DATE STARTED	
34424-93-D			

NO.	DATE	REVISION DESCRIPTION	DRAWN	CHECKED	APP. BY



ENGINEER OF WORK
 J. Carter
 154 C. WAY 13
 921

WATER DEPARTMENT
 City of San Diego



SCALE:	AS SHOWN
DATE:	10/16/07
BY:	[Signature]
FOR OFF ENGINEER:	[Signature]
FOR OFF ARCHITECT:	[Signature]
FOR OFF CONTRACTOR:	[Signature]
FOR OFF OTHER:	[Signature]

OTAY WTP UPGRADE

PROPOSAL DOCUMENTS

PRICE PROPOSAL FORMS

The Design-Builder agrees to the design and construction of **Sodium Hypochlorite at Otay Water Treatment Plant Design-Build Contract**, for the City of San Diego, in accordance with these contract documents for the lump sum price listed below. The Design-Builder guarantees the proposed prices for a period of 120 Days (90 Days for federally funded contracts and contracts valued at \$500,000 or less) from the date Proposals are due until the award of the Task Order. The duration of the price guarantee shall be extended by the number of Days required for the City to obtain all items necessary to fulfill all conditions precedent e.g., bond and insurance.

Item No.	NAICS CODE	Description	Quantity	D*	Unit	Unit Price	Extension
BASE BID							
1	524126	Bonds (Payment and Performance)	1		LS	 	\$
2	541330	Engineering and Design Services	1	D	LS	 	\$
3	237990	Field Construction	1		LS	 	\$
4	541330	Storm Water Pollution Prevention	1		LS	 	\$
5	238990	Disposal of Class I Regulated Waste Material	15		CY	\$	\$
6	238990	Disposal of Class II Regulated Waste Material	20		CY	\$	\$
7		City Contingency	1		AL	 	\$240,000
TOTAL DESIGN-BUILD PROPOSAL (ITEMS NO 1 THROUGH 7 INCLUSIVE):							\$

*** Design Element (For City Use)**

Total Price For Design-Build Proposal, (items 1 through 7, inclusive) amount written in words:

PROPOSAL DOCUMENTS

Design-Builder: _____

Title: _____

Signature: _____

The names of all persons interested in the foregoing proposal as principals are as follows:

IMPORTANT NOTICE: If Design-Builder or other interested person is a corporation, state secretary, treasurer, and manager thereof; if a co-partnership, state true name of firm, also names of all individual co-partners composing firm; if Design-Builder or other interested person is an individual, state first and last names in full.

NOTES:

- A. The Contract Price to be used in the selection process as described in Section 6 of the RFP will be determined as checked below by the City based on:
 - The City shall determine the Contract Price based on the Base Proposal alone.
- B. After the selection has been made, the City may award the Task Order for the Base Proposal alone or if applicable, for the Base Proposal plus any combination of alternates selected in the City's sole discretion.
- C. Prices and notations shall be in ink or typewritten. All corrections (which have been initiated by the Design-Builder using erasures, strike out, line out, or "white-out") shall be typed or written in with ink adjacent thereto, and shall be initialed in ink by the person signing the Proposal.
- D. Failure to initial all corrections made in the proposal documents may cause the Proposal to be rejected as **non-responsive** and ineligible for award.
- E. Blank spaces must be filled in. The Design-Builder's failure to submit a price may render the Proposal **non-responsive** and ineligible for award.
- F. Proposals shall not contain any recapitulation of the Work. Conditional Proposals may be rejected as being **non-responsive**. Alternative proposals will not be considered unless called for.

City of San Diego

CITY CONTACT: Claudia Abarca, Contract Specialist, Email: Cabarca@saniego.gov
Phone No. (619) 533-3439, Fax No. (619) 533-3633



ADDENDUM “3”

REQUEST FOR PROPOSAL (RFP)

FOR

SODIUM HYPOCHLORITE AT OTAY WATER TREATMENT PLANT DESIGN-BUILD CONTRACT

RFQ NO.: As-Needed Design-Build Service for the Engineering & Capital Projects Department – 5151DB

RFP NO.: K-14-1195-DBA-3

TASK ORDER NO.: 11DB07

SAP NO. (WBS/IO/CC): B-13174

CLIENT DEPARTMENT: 2013

COUNCIL DISTRICT: 8

PROJECT TYPE: BI

PROPOSAL DUE:

12:00 NOON

MARCH 26, 2014

CITY OF SAN DIEGO

PUBLIC WORKS CONTRACTING GROUP

1010 SECOND AVENUE, 14TH FLOOR, MS 614C

SAN DIEGO, CA 92101

PROPOSAL DOCUMENTS

A. CHANGES TO CONTRACT DOCUMENTS

The following changes to the RFP are hereby made effective as though originally issued with the RFP. The Design-Builders are reminded that all previous requirements to this solicitation remain in full force and effect.

THE SUBMITTAL DATE FOR THIS PROJECT HAS BEEN **EXTENDED AS STATED ON THE COVER PAGE.**

B. ADDENDUM

1. To Addendum 2, Item 1, Section 6, Selection and Award Schedule, page 6, Sub-items 6.1.2., 6.1.3., 6.1.4. and 6.1.5., **DELETE** in their entirety and **SUBSTITUTE** with the following:

6.1.2.	Proposal Due Date	MARCH 26, 2014
6.1.3.	RESERVED	
6.1.4.	Selection and Notification	APRIL 29, 2014
6.1.5.	Limited Notice to Proceed	JULY 17, 2014

James Nagelvoort
Public Works Department

Dated: *March 5, 2014*
San Diego, California

JN/BD/egz

City of San Diego

CITY CONTACT: Claudia Abarca, Contract Specialist, Email: Cabarca@saniego.gov
Phone No. (619) 533-3439, Fax No. (619) 533-3633



ADDENDUM "4"

REQUEST FOR PROPOSAL (RFP)

FOR

SODIUM HYPOCHLORITE AT OTAY WATER TREATMENT PLANT DESIGN-BUILD CONTRACT

RFQ NO.: As-Needed Design-Build Service for the Engineering & Capital Projects Department – 5151DB

RFP NO.: K-14-1195-DBA-3

TASK ORDER NO.: 11DB07

SAP NO. (WBS/IO/CC): B-13174

CLIENT DEPARTMENT: 2013

COUNCIL DISTRICT: 8

PROJECT TYPE: BI

PROPOSAL DUE:

12:00 NOON

APRIL 2, 2014

CITY OF SAN DIEGO

PUBLIC WORKS CONTRACTING GROUP

1010 SECOND AVENUE, 14TH FLOOR, MS 614C

SAN DIEGO, CA 92101

A. CHANGES TO CONTRACT DOCUMENTS

The following changes to the RFP are hereby made effective as though originally issued with the RFP. The Design-Builders are reminded that all previous requirements to this solicitation remain in full force and effect.

THE SUBMITTAL DATE FOR THIS PROJECT HAS BEEN EXTENDED AS STATED ON THE COVER PAGE.

B. BIDDER's QUESTIONS

- Q1. Please verify whether or not the City wants to go with FRP over poly tanks. MicrOclor has FRP in their scope and just want to make sure that is what the City wants to go with on this project.
- A1. The City requires FRP tanks for this project provided by FT Eng, Incorporated.
- Q2. Addendum #2 Page 32 of 32, Proposal Documents. There is no statement for the acknowledgement of Addendums. Attachment G states that failure to acknowledge receipt of Addendum will be considered non-responsive. Will this form be revised?
- A2. Page 32 of Addendum 2 is to be utilized for the Design-Builder's Price Proposal Submittal. Attachment G addresses the Technical Proposal Submittal Requirements and Selection Criteria. Design-Builders are to acknowledge all Addenda issued within the Technical Proposal.
- Q3. The proposed Transition Chlorination System (Bulk Sodium Hypochlorite) anticipates use of the existing Ferric Chloride bulk tank and it was stated at the site walk that the DB would have to determine if the tank and associated systems were usable. Since there could be excessive residual ferric chloride inside the tank and related systems, it may be determined that the cost to decontaminate the tank may be excessive. It may be more cost effective to replace the tank and dispose of the existing tank. However the existing bid form does not provide a method to provide an alternate cost to replace the tank. Can the bid form be revised to allow for the replacement of the tank?
- A3. The Plant has inspected the Ferrous Chloride tank and found no sediment on the bottom of the tank. The Plant staff will flush and clean the ferrous tank and piping for use as a temporary hypochlorite system. If it cannot be cleaned to acceptable standards, replacement will be handled as a bid item. Please see the revised bid schedule with an added bid item "Transition hypochlorite Tank". Please note that Addendum #2 requires the removal and replacement of this tank for use as bulk acid storage.
- Q4. Is the transition chlorination system to remain in place as a backup system for the plant?

- A4. No. The transition system will not remain in place as a backup it will be decommissioned after the OSHG system is completed. As noted in the Basis of Design Report, OSHG system is required to have a connection for taking bulk deliveries of commercial hypochlorite with a dilution panel.
- Q5. The Transition plan included the use of the existing ferrous chloride pumps. Are the fittings and materials in these pumps suitable for pumping the Hypochlorite? If not, these pumps may need to be replaced. If replacement is required, we would recommend that the bid form revision include these items as well.
- A5. Yes. They are suitable.
- Q6. At the site walk it was stated that the excess by product will be discharged to the existing manhole that discharges to the lake. Please provide the location of the existing manhole so that the length and size of the discharge line can be determined.
- A6. There is a 4" drain that runs down the middle of the Chlorine Room and a 4" drain that runs from the south side of the chlorine dioxide batch tank containment. See drawing number 34424-83-D and 34424-25-D (Otay Improvement Project Phase II)
- Q7. As-built drawings received of the site show that the existing Chlorine Room was built over an existing clarifier that was demolished. It appears that the new tanks will also be installed over the existing generator. Please provide records of how this was back filled so that we can determine the foundation that will be required at the tanks. Specifically, we would like to see existing geotechnical soils reports and As-Graded Compaction reports.
- A7. Existing geotechnical soils reports and As-Graded Compaction reports are not available. The Design-Builder shall provide Geotechnical Services.
- Q8. There is a new waterline that runs along the north side of the Chlorine Room. Please provide the location of this line so we can determine if it will have to be rerouted to install the storage tanks.
- A8. The water line in question was installed by City staff in 2007. It is 4" PVC. The line runs parallel to the north side of the Chlorine Room. The south edge of the concrete cap over this line begins 18' north of the north wall of the Chlorine Room.
- Q9. Please provide as-built drawings showing existing piping (water, chemical feed, waste and drain) in the Chlorine Room, Yard Piping, Operations Building Piping and existing Chemical Area Piping.
- A9. See drawings 34424-24-D and 34424-25-D (Otay Improvement Project Phase II). Drawings are available at the City Maps and Records.

- Q10. Please provide an electrical single-line or similar drawing showing the existing essential electrical loads to the emergency generator. If a drawing is not available, then please provide a list of equipment and process related electrical loads that must remain operational during loss of electrical utility service (i.e. a list of items already powered by the emergency generator).
- A10. See drawings: # 22777-166-D and 22777-168-D (Lower Otay Filtration Plant Expansion) also drawing # 34424-96-D. Drawings are available at the City Maps and Records. Currently the generator powers all plant equipment during an outage.
- Q11. Please indicate whether compressed air or plant air is available at the existing Chlorination Building. If so, what is the available air pressure?
- A11. An air line exists (currently disconnected) it runs between the northwest corner of the Chlorine Room, under the pavement, to the southeast corner of the Operations Building. Static pressure on the plant air system (dual compressors) is 115 psi.
- Q12. There will be a need to discharge a periodic waste stream from the new OSHG softeners. Is an onsite plant waste drain or sanitary sewer available that will allow discharge of the softener regenerant and backwash rinse streams?
- A12. Backwash from the softeners should be routed to one of the plant drain lines that recycle water back to the lake. Either of the 4" lines in the Chlorine Room fit this category.

C. ADDENDUM

1. To Addendum 2, Item C.4., Attachment A, Project Description, Scope of Work, Technical Specifications, and Bridging Documents, Bridging Documents Sodium Hypochlorite at Otay Water Treatment Plant, Appendix C, "Basis of Design Report", pages 7 through 30, **DELETE** in their entirety and **SUBSTITUTE** with pages 6 through 26 of this Addendum.
2. To Addendum 2, Item C.5., Proposal Forms, Price Proposal Forms, pages 31 through 32, **DELETE** in their entirety and **SUBSTITUTE** with pages 27 through 29 of this Addendum.
3. To Addendum 3, Item B.1., Section 6, Selection and Award Schedule, page 2, Sub-items 6.1.2., 6.1.3., 6.1.4., 6.1.5., **DELETE** in their entirety and **SUBSTITUTE** with the following:

6.1.2. Proposal Due Date	APRIL 2, 2014
6.1.3. RESERVED	
6.1.4. Selection and Notification	MAY 6, 2014
6.1.5. Limited Notice to Proceed	JULY 24, 2014

D. CHANGES TO THE REQUEST FOR PROPOSALS

1. To Item 2, Equal Opportunity Contracting Program, page 5, Sub-item 2.4.1., **DELETE** in its entirety and **SUBSTITUTE** with the following:

2.4.1. The City has incorporated mandatory SLBE-ELBE subcontractor participation percentages to enhance competition and maximize subcontracting opportunities. For the purpose of achieving the mandatory subcontractor participation percentages, a recommended breakdown of the SLBE and ELBE subcontractor participation percentages based upon certified SLBE and ELBE firms has also been provided to achieve the mandatory subcontractor participation percentages:

- | | | |
|----|-------------------------------|-------|
| 1. | SLBE participation | 3.5% |
| 2. | ELBE participation | 9.6% |
| 3. | Total mandatory participation | 13.1% |

James Nagelvoort
Public Works Department

Dated: *March 18, 2014*
San Diego, California

JN/BD/egz

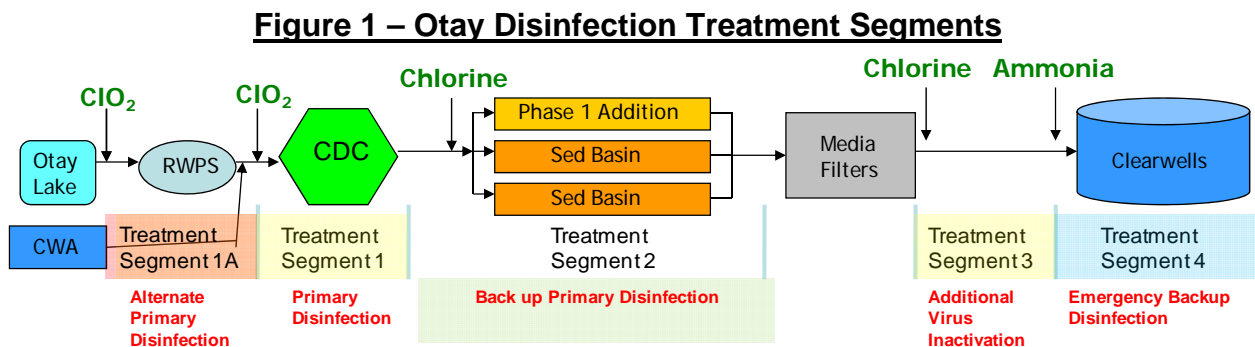
OTAY ON-SITE HYPOCHLORITE GENERATION PROJECT

BASIS OF DESIGN REPORT – FINAL – RFP SITE WALK 28 JANUARY 2014

I. Purpose: This document is intended to provide the basis of design for the selection and size of the on-site hypochlorite generator (OSHG) and ancillary equipment for this project.

II. Background: The existing Chlorine Building was constructed in 1988. It is a 92' by 28' block building designed to house the ton containers of chlorine gas and feed equipment for Otay's ultimate built-out capacity of 60 MGD. Otay's current rated capacity is 34.2 MGD. The Department has no plans or projections to increase the plant's rated capacity within the 20 life cycle of the proposed hypochlorite generation system. The Chlorine Room was modified to accommodate the installation of the chlorine dioxide system in 2010. Drawing attached as Appendix A. It is anticipated that the new OSHG will be installed in the existing Chlorine Room. The chlorine dioxide system will remain in the existing Chlorine Room as an important element of Otay's disinfection strategy.

Otay currently uses a multi-segment approach to disinfection in the water treatment process. Figure 1, below, shows the treatment segments and disinfectant application points. Hypochlorite will directly replace gas chlorine in this treatment plan.



Otay Disinfection Treatment Segments

- 1A – Pipeline from the Park manhole to the CDC – Chlorine dioxide
- 1 – Chlorine Dioxide Contactor -- Chlorine dioxide
- 2 – Back-up Primary Disinfection – Free chlorine (used in the event of ClO₂ failure)
- 3 – Filter Effluent Channel – Free chlorine
- 4 – Emergency Backup Disinfection -- Chloramines

III. Plant Design Parameters – Plant Flow

Maximum Plant Flow: As noted above, the current maximum instantaneous flow permitted by the California Department of Public Health is 34.2 MGD. This limitation is based on the maximum allowable filter hydraulic loading rate of 6 gal/ft²/min. Given the

design depth of the filters (30" of GAC) and the historic filterability problems associated with use of 100% local water supply, it is very unlikely that up grading the filters to 7.6 gal/ft²/min (40 MGD) is possible. With the recent installation of backwash system improvements, however, filter performance has significantly improved opening the possibility of up-rating the filters at some point in the future. Therefore, **40 MGD** should be used as the maximum plant flow for designing the OSG system.

Minimum Plant Flow: Otay's filters use water pumped from the common filter effluent channel to supply backwash water. Because the post-filter chemicals (chlorine, caustic, and ammonia) are not flow paced, a minimum plant flow must be maintained past the application point. Even if the post-filter chemicals are flow paced, the effluent venture meter that would pace these chemicals is sized for a 60 MGD plant build-out and can only read accurately down to about 8 MGD making flow-pace operation impossible below a 14 MGD plant flow rate. This condition requires a minimum plant flow of **14 MGD**.

Typical Plant Flow: In addition to the plant maximum and minimum flow rates, the range of typical flows also should be consider when selecting equipment size. Sizing equipment exclusively for maximum flow and maximum dose can lead to oversized equipment and less than optimal control for the plant during the vast majority of operations. Typical flow for Otay was determined by analyzing the past three years of plant flows. The 99thpercentile flow for this period was 24.2 MG. Given that the plant minimum flow is 14 MG, the operating flow range for the plant > 99% of the time is **14 MGD to 24.2 MGD**.

IV. Plant Design Parameters – Chlorine Use

Chlorine Usage Data: Chlorine use at Otay has changed significantly with the introduction of chlorine dioxide in 2010. Prior to chlorine dioxide use, chlorine was applied pre-filter (either at the influent or effluent of the basin) and again at filter effluent. This double point application required a total chlorine dose of 4 to 6 mg/L. To account for all raw water quality conditions, a 50% safety factor over this range is recommended. The results in a maximum dose rate of 8 mg/L. Since Otay's Operations Plan calls for the capability Primary Back-up Disinfection (Treatment Segment #2) with free chlorination in the event of a chlorine dioxide system failure, **the OSHG system must be able to produce a maximum dose rate of 8 mg/L at the maximum flow rate of 40 MGD**.

In addition to the plant maximum flow/maximum dose rate, the range of typical flows also must be considered when selecting equipment size. Sizing equipment exclusively for maximum flow and maximum dose can lead to oversized equipment and less than optimal control for the plant during the vast majority of operations. Typical flow / typical dose rate for Otay is determined by analyzing the past 18 months of plant flow and chlorine usage. In normal operations, chlorine is applied post-filter and used to generate chlorine dioxide. The upper 95% confidence level chlorine usage in this treatment scheme is 4.3 mg/L. **Typical chlorine usage for Otay is therefore 4.3 mg/L**.

Table 1 – Design Flow and Chlorine Usage Rates

Design Flow / Cl₂ Use Rates	
Maximum Flow (MGD)	40
Minimum Flow (MGD)	14
Typical Flow (MGD)	24.2
Maximum Cl ₂ Dose (mg/L)	8 mg/L
Minimum Cl ₂ Dose (mg/L)	2.0 mg/L
Typical Cl ₂ Dose (mg/L)	4.3 mg/L

Design Generator Capacity	
Max Flow / Max Dose	2668 lbs/day
Min Flow / Min Dose	234 lbs/day
Typical Flow/ Typical Dose	868 lbs/day

V. OSG System Design Considerations:

Hypochlorite Generator System – The hypochlorite generation system shall be a Microclor System as furnished by Process Solutions, Inc., a MaximOS System as furnished by Parkson Corporation, or equal.

NSF 61 -- The OSHG shall comply with California Drinking Water Regulations §64591 (b) (1) Indirect Additives; which states:

If a treatment chemical is generated on site, no equipment used in the generation process shall be in contact with a drinking water, or a chemical to be applied to drinking water, after March 9, 2008, unless the equipment has been tested and certified as meeting the specifications of NSF International/American National Standard Institute (NSF/ANSI) Standard 61-2005/Addendum 1.0-2005 (Drinking Water System Components—Health Effects).

General System Redundancy – All reasonable effort should be taken to minimize single-points-of-failure in the system. Where elimination of a single-point-of-failure is not possible, accommodation of alternate processes or replaceable spares should be identified and provided. For example, extra hypochlorite tank storage might be considered in lieu of full redundancy of generator capacity.

The system shall be designed to provide the capability to use unloading of 12.5% commercial hypochlorite into hypochlorite storage tanks as a back-up chlorine supply. This system shall include a commercial strength sodium hypochlorite dilution panel including an eductor, a rotameter for potable water, a rotameter for 12% sodium hypochlorite, an outlet check valve and all other valving, piping, and equipment necessary for emergency service.

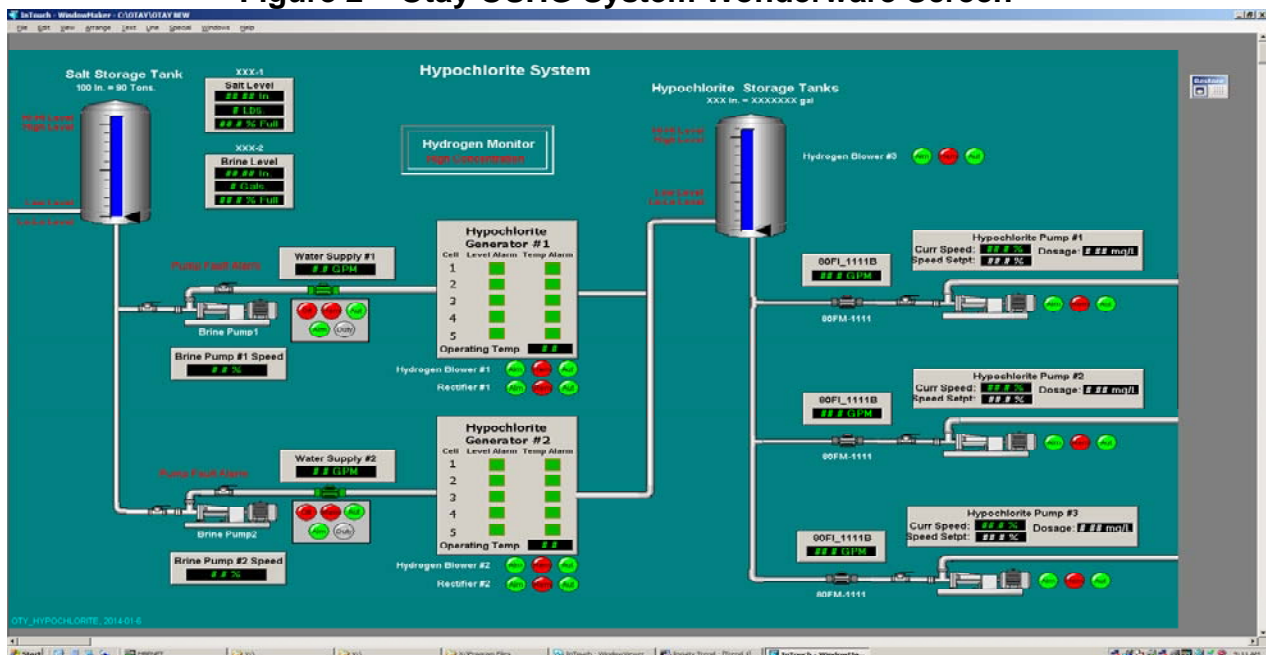
Generator Capacity Redundancy – Complete redundancy of generator capacity is required to meet the Typical Flow/ Typical Dose chlorine use rate of 868 lbs/day. The Contractor shall address how they intend to meet redundancy (assume the largest single unit of equipment out-of-service) at the Maximum Flow / Maximum Dose chlorine use rate of 2668 lbs as Cl₂ for a period of 24 hours.

Spill Containment – The Contractor shall provide spill containment around all OSHG equipment within the Chlorine Room and hypochlorite/salt tank storage areas. Storage tank spill containment requires 120% capacity of the vessels stored in those areas. Spill containment within the Chlorine Room is intended to keep incidental spills from leaving the building. A berm similar to that around the chlorine dioxide generator will be acceptable. Containment areas shall be plumbed to the drain system and equipped with valves or flexible plugs similar to those used in the Otoy Chemical Feed Room. Containment areas shall be coated with an epoxy with a polyurethane topcoat. Spill containment areas shall be equipped with spill detection and alarms integrated into the Otoy SCADA system.

OSHG System PLC -- The system shall be equipped with a Modicon PLC, or equal, similar to those used in the existing chlorine dioxide and fluoride systems.

Integration with Otoy SCADA System -- The Contractor shall connect the OSHG system to Otoy’s SCADA system to provide remote operation, monitoring and data logging, including HMI screens, as required, to display data and control on the OSHG system. Figure 2 below is an example of Otoy’s OSHG system HMI screen showing the level of monitoring and control expected is displayed below. Integration of the system includes, but is not limited to, alarms, data logging, PLC status monitoring, and documentation. Integration of the generator PLC with the existing plant SCADA system shall be performed by EMA, or equal.

Figure 2 – Otoy OSHG System Wonderware Screen



Generator Efficiency -- The hypochlorite generation system shall meet the following performance standards.

Hypochlorite System Performance Requirements	
Concentration of Sodium Hypochlorite Solution	0.8% 8,000 ppm +/- 0.05%
Salt Required to Produce 1 lb of Free Available Chlorine (FAC)	3.0 lbs maximum
Power Required to Produce 1 lb of Free Available Chlorine (FAC)	2.0 kW maximum
Water Required to Produce 1 lb of Free Available Chlorine (FAC)	15 gallons
<p>The electrolytic system shall generate an aqueous solution of a minimum concentration of 0.8 percent ($\pm 0.05\%$) by weight sodium hypochlorite expressed as chlorine. The minimum capacity shall be demonstrated to be equal to the capacity specified while not exceeding the maximum raw material quantities.</p>	

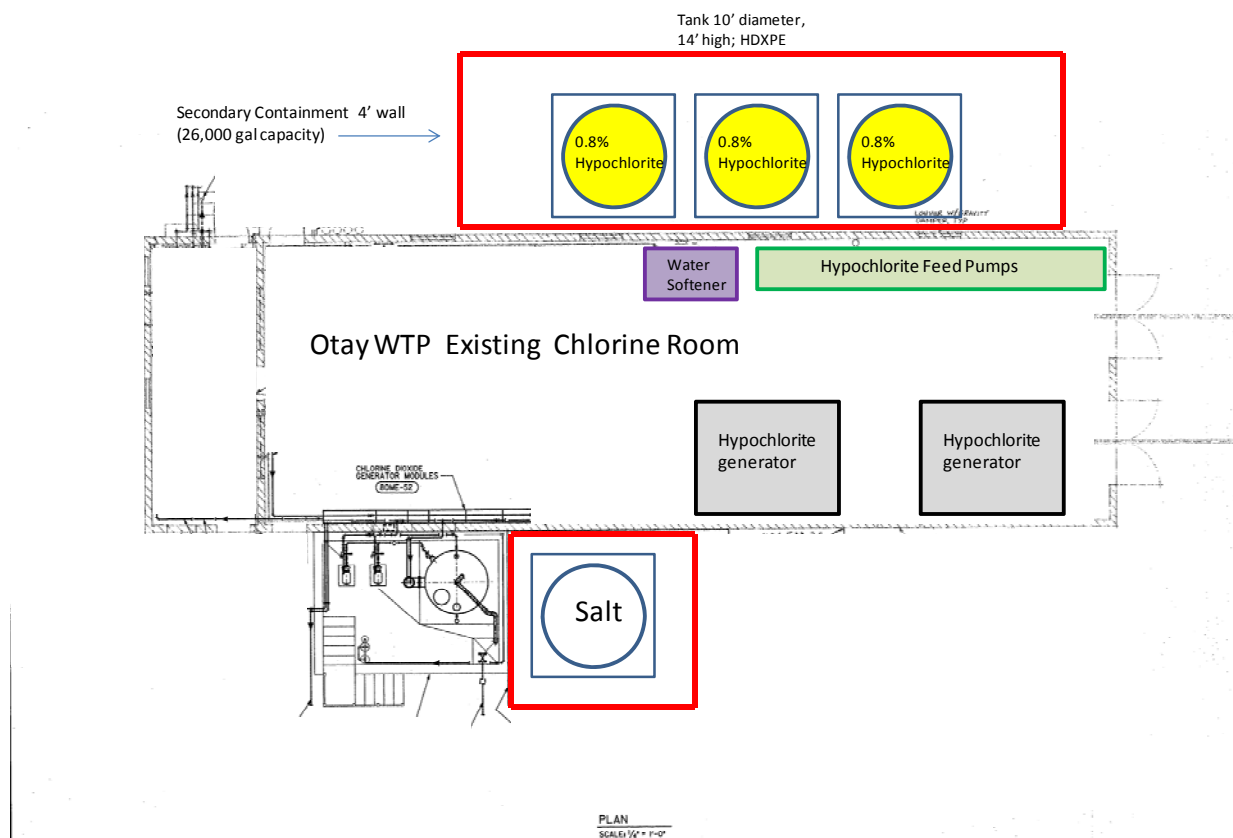
Hydrogen Management –The handling of this potentially dangerous by-product is an extremely important element of the generator design.

- A. The hydrogen dilution system shall dilute the hydrogen concentration to below 25 percent of LEL or 1 percent by volume.
- B. Hydrogen dilution at the generator.
 - 1. Hydrogen shall be separated from the hypochlorite solution prior to the hypochlorite entering the storage tanks and then is diluted below its lower explosive limit with hydrogen dilution blowers.
- C. Hydrogen dilution at the hypochlorite solution storage tank(s).
 - 1. Forced air draft shall be provided for the headspace of the hypochlorite solution storage tank(s).
- D. Hydrogen dilution blowers shall be provided. For each dilution point there shall be two blowers installed so that if one blower fails, the second blower is activated. The hydrogen dilution system design shall incorporate the following safety features:
 - 1. Blower run sensing.
 - 2. Air flow switch positioned in the dilution ductwork vent stack.
 - 3. Software controlled safety interlocks to detect control system sequence failure.
- E. A Hydrogen Gas Room Monitor/Detector shall be provided.
 - 1. The hydrogen gas monitoring system shall continuously measure and display gas concentration and provide alarms when preset limits are exceeded. Transmitter will send signal to local controller and/or PLC.

Hypochlorite Storage Tanks – A minimum of 48 hours of hypochlorite storage at the Typical Flow/Typical Dose chlorine use rate (868 lbs/day) shall be provided. Hypochlorite tanks shall not be located within the Chlorine Room. Hypochlorite tank shall be sited to be shaded from direct sunlight. All tankage shall be enclosed within a secondary containment area capable of handling 120% of the total tankage capacity. Tanks shall be equipped with seismic restrains compliant with current earthquake standards. The Contractor is encouraged to consider alternate tankage configurations that will best suit this system.

Tanks shall be equipped with both manual and ultra sonic tank level sensors. Ultra sonic sensors shall be Endress+Hauser, or equal.

On-Site Hypochlorite Generation System Conceptual Drawing



Hypochlorite Piping – The existing plant PVC piping was not designed or intended to carry sodium hypochlorite. The glues used in existing plant PVC piping may be incompatible with sodium hypochlorite (especially after carrying acidic fluids for several years). Therefore, long term use of existing PVC pipe to carry hypochlorite solutions

will not be acceptable. With the exception of the pipe temporary hypochlorite feed system and the pipe from the chemical feed room to the basin influent application point, all PVC piping used to carry sodium hypochlorite will be constructed using SCH 80 CPVC and ISP 724 glue. PVC piping shall have UV protection. The Designer shall determine if a coating is to be applied or have special PVC for UV protection. If existing piping used in the temporary hypochlorite feed system fails, it shall be the Contractor's responsibility to repair and/or replace the damaged pipe.

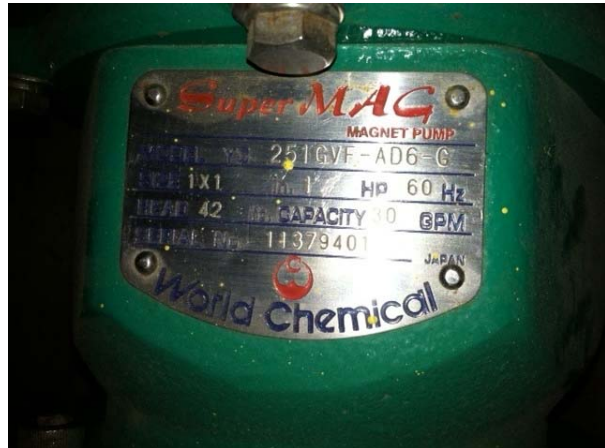
Hypochlorite Feed Pumps – Each hypochlorite feed pump shall be capable of accurately feeding the entire range of Maximum Flow/ Maximum Dose (2668 lbs/day as Cl_2) to Minimum Flow /Minimum Dose (234 lbs/day as Cl_2). The system should be equipped with a redundant pump of identical capacity. Hypochlorite feed pumps should be flow-paced to either the plant influent flow or plant effluent flow based on the designated application point. The system shall use the existing chlorine solution lines located at the northwest corner of the existing Chlorine Building.

The hypochlorite feed system shall have the capability to feed up to Maximum Flow/ Maximum Dose (2668 lbs/day as Cl_2) simultaneously to:

1. Basin inlet (flow paced on Plant Influent Flow)
2. Filter effluent channel (flow paced on Plant Effluent Flow)

The Contractor should pay particular attention to designing in the ability to isolate and flush each pump for ease and safety of maintenance.

The Contractor is welcome to consider alternate approaches to the hypochlorite feed system. Otoy has two brand-new mag-drive pumps (shown below, TDH 42', capacity 30 gpm) that are available to be used in a common pump hypochlorite feed system similar to the existing chlorine dioxide feed system.



Salt Storage – A minimum of 30 days generator capacity at Typical Flow / Typical Dose (868 lbs/day as Cl_2) shall be provided. All salt storage shall be enclosed within a secondary containment area capable of handling 120% of the total tankage capacity. Secondary containment for salt storage shall have a suitable coating. Brine tank

system shall include filters for dirt and particle removal from the brine stream. The salt storage system shall monitor both salt level and brine level.

Available Electrical Capacity – An existing 480V, 600A service enters the Chlorine Room building at MCC-12E. There are currently demands on this MCC which will remain after the removal of the gas chlorine system. Adequacy of this power supply to meet Maximum flow/Maximum dose OSG chlorine requirements is not known. It is the responsibility of the Contractor to determine the adequacy of this service and to provide whatever equipment necessary to meet anticipated service requirements. The Contractor must also address the adequacy of the plant's existing standby power generator and the new on-site system. The OSHG should be capable of the Typical Flow/Typical Dose chlorine use rate (868 lbs/day) capacity during the operation of the generator. If necessary, the Contractor will provide whatever load shedding switchgear is needed to maintain hypochlorite feed during a power outage.

Service Water Pre-filters – The Contractor shall provide two (2) duplex manifolds each with two (2) industry standard 10-inch Housings, each holding a 10" cartridge. This is for dirt, rust, and particulate matter from softener's feed water, including four (4) Pressure Gauges to measure pressure drop across filters.

Water Softeners -- Water for use in the hypochlorite generators will be softened using two sets of twin tank ion exchange water softeners per generator skid with a hydraulically-driven, flow-controlled switchover valve. When the ion exchange capacity of one resin tank is nearly exhausted, the softener control mechanism will automatically divert flow to the alternate tank while initiating a brine backwashing of the first tank for regeneration of the ion exchange resin. Minimum efficiency will be 3,727 grains exchange per pound of salt.

Water Hardness Monitoring -- In-line hardness monitors capable of measuring hardness levels from 0.3 to 100 mg/L expressed as mg/L of CaCO₃ shall be installed downstream of each water softening system. The analyzer shall be a HACH Model SP 510 or equal.

Water Softener Backwash Water – Backwash water from the water softener shall be recycled back to the reservoir via the Chlorine Room drain line. The Contractor shall be responsible for determining the adequacy of this drain line and connecting the necessary equipment to the drain.

Generator Warranty -- Prior to acceptance of the sodium hypochlorite generation system, the Contractor shall provide written warranty from the system manufacturer that includes the following statements:

1. Contractor shall inspect the installation during and after completion and provide written certification that the sodium hypochlorite generation system is free from faults and defects and is in conformance with the Contract Documents.

2. The Contractor must provide the following after sales services:
 - a. Must provide a 24-hour 365-day toll free service hot line.
 - b. Next day technician availability.
 - c. Same day or overnight parts availability.
 - d. Must provide evidence of spare parts availability on this system such as electrolytic cells, rectifiers, control cabinets, metering pumps.
3. Sodium hypochlorite generator system will remain free of defects for a period of three (3) years from the date of final acceptance.
4. If the equipment requires repair or replacement during the three (3) year warranty period as a result of ordinary wear and tear under normal conditions, the Contractor will repair or replace such equipment as required without cost (including shipping, handling and labor) to the City.
5. The electrolytic cells including cell housing body shall have a three (3) year full replacement warranty and a prorated straight-line replacement warranty for years 4 to 7 from the date of final acceptance.
6. The Contractor shall guarantee the minimum performance of the system for electrical consumption, salt usage, and water usage for a minimum of three (3) years following final acceptance of installation.

VI. Modifications to the existing Chlorine Dioxide Generation System:

General System Considerations -- The existing system uses gas chlorine and a sodium hypochlorite solution to generate chlorine dioxide. Use of hypochlorite in lieu of chlorine gas requires modification of the existing system. A proposal for these modifications is attached as Appendix B. Siemens, or a contractor of equal experience in this type of modification, shall perform these modifications to the feed chlorine dioxide generator.

Hydrochloric Acid Feed – In the modified system, hydrochloric acid (15%) reacts first with the hypochlorite to produce molecular chlorine. That then reacts with the sodium chlorite to produce chlorine dioxide. The Contractor will make the modifications to the existing generator. The projected acid feed rate is ½ gallon per pound of chlorine dioxide generation. Given a maximum generation rate of 850 lbs/day of chlorine dioxide, this results in a design feed rate of 425 gallons of acid per day. At the Typical flow/ Typical dose rate the chlorine dioxide demand is 335 lbs/day resulting in an acid use of 168 gallons per day. These acid consumption rates require the use of a bulk storage tank.

Bulk hydrochloric acid (15%) will be stored in a 7,500 gallon tank. The Contractor shall remove the existing ferrous chloride tank and provide an appropriate acid bulk tank in that location. The acid tank shall be equipped with both manual and ultra sonic tank level sensors. Ultra sonic sensor shall be Endress+Hauser, or equal, and integrated into the Otay SCADA system. The Contractor shall install new chemical unloading piping

and double walled 1' PVC line from the bulk tank to the chlorine dioxide generator. The Contractor will also provide a containment wall around the hydrochloric acid bulk tank – similar to those around the fluoride and ammonia tanks – capable of containing 120% of the contents of the acid tank. Containment area shall be coated with a suitable acid-resistant coating.

Water Supply – The existing chlorine dioxide generator requires 30 gpm @ 50 psi. In addition, the Batch Tank off-gas removal system uses 20 gpm @ 40 psi. The modified system will use the existing water pressure and flow requirements. The Contractor shall provide any equipment necessary to obtain the necessary flow and/or pressure for the modified chlorine dioxide generation system.

VII. Project Phasing & Implementation:

Project Construction Planning – The project will be phased and constructed to minimize impact to plant operations. The figure below shows a “suggested” approach to the phasing of this project. This plan provides for the least disruption of plant operations and fewest shutdowns. The Contractor is welcome to propose alternative approaches to this plan.

Otay Hypochlorite Project -- Construction Phasing Plan													
Task													
Construct and commission temporary hypochlorite system	■	■											
Commission and operate temporary hypochlorite system			■	■	■	■	■	■	■	■	■		
Demo existing gas chlorine system			■	■	■	■							
Construct on-site hypochlorite generation system							■	■	■	■			
Commission on-site system											■		
Decommission temporary hypochlorite system												■	
Perform modifications to chlorine dioxide system													■

System Start-up & Commissioning -- The Contractor shall perform a 7 day start-up and commissioning test of the temporary hypochlorite system and the OSHG system. Should a failure occur during this test period, the 7 day test period will begin again after the correction of the problem. Successful completion of the 7 day testing is a prerequisite to moving on to the next phase of work.

Purchase of Chemicals -- Otay will purchase all treatment chemicals (salt, commercial strength sodium hypochlorite, acid) that will be used in this project.

Training -- The Contractor will provide training on the new OSHG system. At a minimum training will include:

1. General training for all Otay personnel. One training shall be delivered twice. These sessions will cover safety and handling of sodium hypochlorite (health effects, PPE, and MSDS review) and an overview of the operation of the OSHG system (including remote operation from the HMI). These sessions will be at dates and times mutually agreeable to the Contractor and the Otay supervisors. (Expected training duration: 2 hour per session.)

2. Maintenance training. Two trainings shall be provided for the Otay Maintenance section. The first training will include an overview of OSHG system equipment, daily inspection of the system, required scheduled maintenance tasks on the system, and repair & replacement of system components. The second training will focus on the hypochlorite feed system, daily inspection of the system, required scheduled maintenance tasks on the system, and repair & replacement of system components. These sessions will be at dates and times mutually agreeable to the Contractor and the Otay Maintenance Supervisor. These trainings shall be delivered by the equipment supplier or manufacturer. (Expected training duration 2 hours per session.)
3. I & C training. Two training intended for Otay's Instrumentation & Control Technicians. The first training will cover OSHG system and its interface with the Otay SCADA system. This training will include: an overview of the control system & structure and a detailed review of the structure, code and operation of this system. This session shall be delivered by the system integrator on for this project. The second training will cover the operation and maintenance of the instrumentation components of the OSHG system (level/temp sensors, hydrogen monitor, hardness analyzers, flow sensors). This session will be delivered by the OSHG system manufacturer or instrument equipment supplier(s).

Transition Between Chlorine Gas and OSG – Between 1 November and 30 May the plant can be shut down for a maximum 3 consecutive days to convert to the OSG system. Between 1 June and 30 October plant shutdowns are limited to 8 hours. Because of the hazardous nature of chlorine gas, no demolition of any part of the chlorine gas system will be allowed while the chlorine gas system is in service. Otay staff will drain and decommission the gas chlorine system and formally turn it over to the contractor.

Contractor Staging Area -- The staging area for the project is the triangular shaped area between the north side of the filters and security guard shack. The vegetated area to the south of the Chlorine Room cannot be used or disturbed.

O&M Manuals – The Contractor shall provide four copies of an O&M manual for the OSHG system including all subcomponents and instrumentation.

Gas Chlorination System Demolition – The Contractor will remove all existing chlorine equipment from the Chlorine Room. A schedule of the disposition of equipment and materials is shown below. Not included on this list, but part of the Contractor's scope-of-work is the removal of electric switchgear, breakers, and other equipment that powered the old gas chlorination equipment. The Contractor will also remove and decommission instrumentation alarm wires and circuits related to the gas chlorination equipment that is being removed.

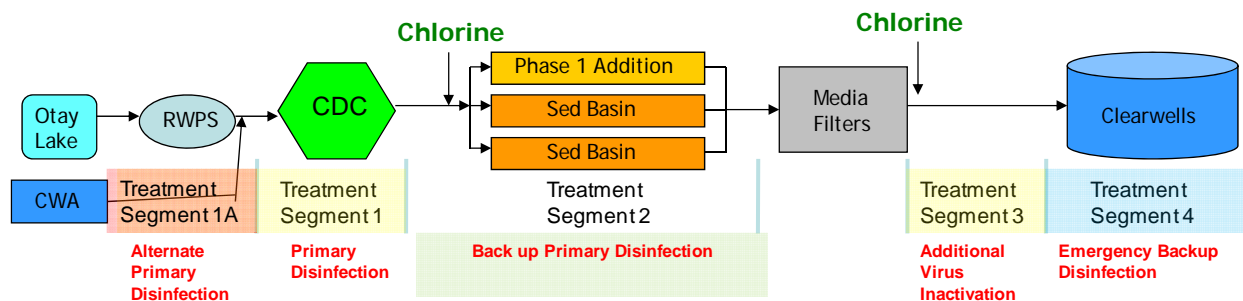
Otay Hypochlorite Project -- Chlorine Room Equipment Removal and Demolition			
Item #	Item Description	Disposition	Comments
1	Scrubber System	Remove and transport to CW	Remove dispose of caustic in scrubber ¹
2	Chlorinator #1	Remove to Alvarado ²	
3	Chlorinator #2	Remove to Alvarado ²	
4	Chlorinator #3	Remove to Alvarado ²	
5	Chlorinator Spare	Remove to Alvarado ²	
6	Evaporator #1	Remove to Alvarado ²	
7	Evaporator #2	Remove to Alvarado ²	
8	Motorized Vacuum Valves & PRV x2	Remove to Alvarado ²	
9	Expansion Tank & burst plug	Remove to Alvarado ²	
10	Vacuum sensor	Remove to Alvarado ²	
11	Halogen Valve System x 2	Remove to Alvarado ²	
12	Hoist #1 (north)	Deliver to Otay Maintenance	
13	Hoist #2 (south)	Deliver to Otay Maintenance	
14	Ton Container Roller Cradles x 72	Remove to Alvarado ²	
15	Ton Scale #1	Remove to Alvarado ²	
16	Ton Scale #2	Remove to Alvarado ²	
17	DI/Water Softener Unit	Rental - Return to Siemens	Coordinate with plant staff
18	Chlorine Alarm Buttons and conduit	Remove and dispose	
19	Chlorine Sensors and conduit	Remove and dispose	Salvage sensors and deliver to I&C
20	PVC Chlorine gas piping	Remove and dispose	
21	PVC Chlorine solution piping	Remove and dispose	
22	Iron Chlorine piping	Remove and dispose	
23	Concrete chlorine pedestal pad	Remove and dispose	
24	Concrete evaporator pedestal pad	Remove and dispose	
25	Hoist Rail (Interior & exterior)	Remove and dispose	
26	Chlorine gas control panel	Remove and dispose	
27	Chlorine gas sensor panel	Remove and dispose	
28	SCBA air lines and reels (2)	Remove to Alvarado	
29	Chlorine room exhaust fan	Remove to Alvarado ²	
30	UPS Box (southwest corner)	Remove and dispose	
31	Scrubber curb & pedestal pad	Remove and dispose	
Notes:			
1. Hazardous waste disposal			
2. Alvarado Water Treatment Plant, 5540 Kiowa Drive, La Mesa, CA 91942			

Transition Chlorination Plan -- Operationally, one of the most challenging aspects of Otay's on-site hypochlorite project will be compliance with the required disinfection treatment throughout the project. The period between the complete removal of the

existing gas chlorine system and the construction of an on-site hypochlorite generation system is estimated at three to five months. Since the plant cannot be taken out-of-service for this entire period, alternative operations must be implemented to maintain an adequate level of disinfection. This task is further complicated by the fact that both the chlorination system and the chlorine dioxide system will be out-of-service during this transition.

The transition period between the demolition of the current gas chlorine system and the construction of the on-site hypochlorite generation system will therefore require the construction and operation of a temporary chlorination system. The Contractor will determine the feasibility of the approach outlined below, and implement it, or propose an alternative plan that is acceptable to the City.

Requirements of the Transition Chlorination System: The Transition Chlorination System (hereafter referred to as TCS), must have be able to supply feed rate of 200 to 868 lbs/day (of chlorine equivalent) to one of both of the chlorine application locations (basin influent or post-filter). The application points are shown in the figure below. Redundancy of feed capability to the post-filter application location is also required.

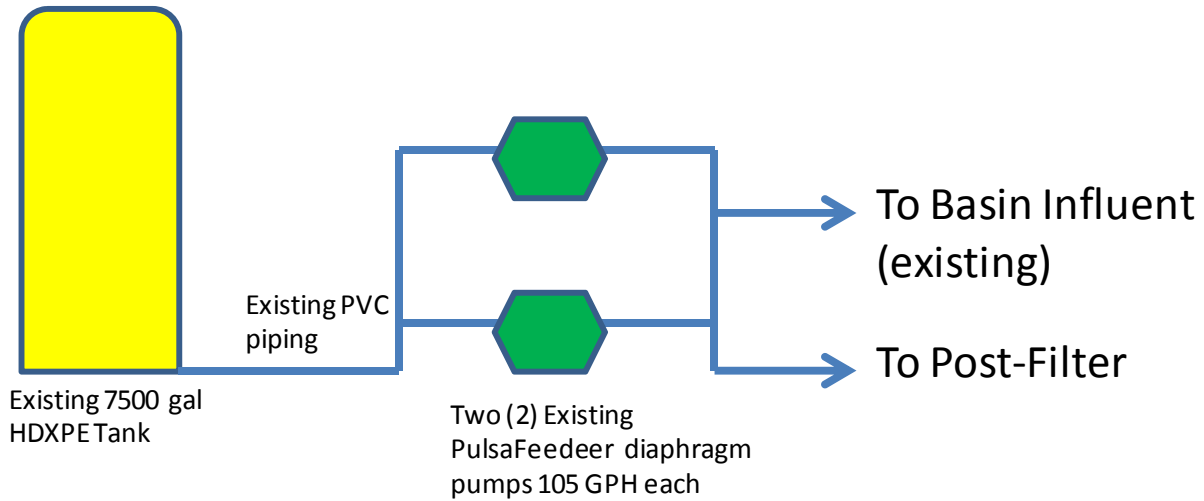


Hypochlorite Use: The TCS will use commercial strength (12.5%) sodium hypochlorite as the chlorination chemical. The City will purchase this chemical in bulk deliveries.

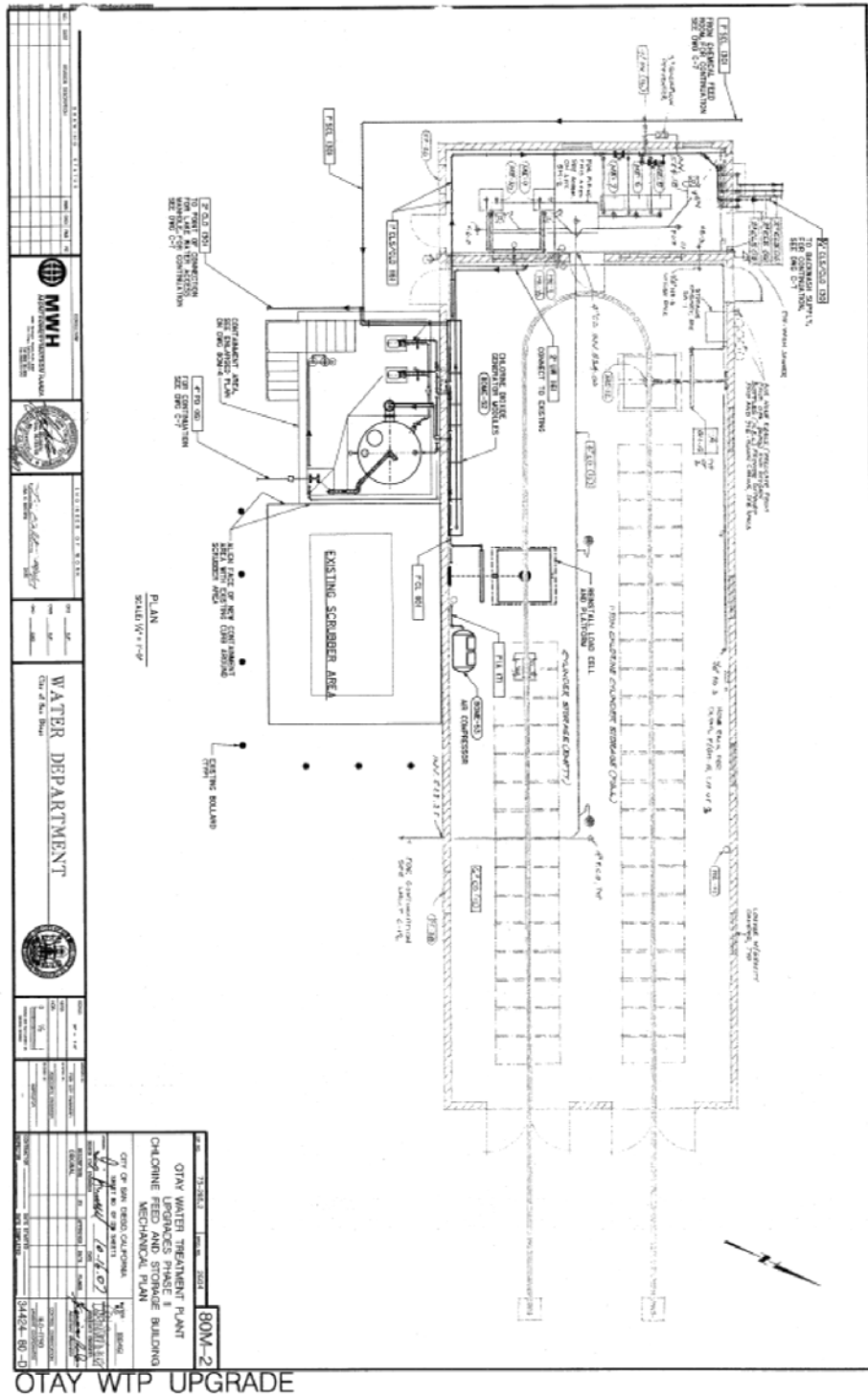
Proposed Transitional Chlorination System (TCS): It is proposed that the TCS will use elements of the ferrous chloride system which are no longer in use. A schematic of the proposed system is shown in the figure below.

Hypochlorite Storage: The proposed system would use the existing ferrous bulk tank (10' diameter, 14' high, HDXPE) for storage of commercial strength sodium hypochlorite. The existing tank is located within Otay's bulk chemical secondary containment and has existing piping to the bulk chemical unloading station. Use of a large bulk tank will reduce materials handling and cost as the chemical can be purchased and shipped in 50,000 lb loads. At the typical dose of 500 gal/day, time between loads will be 10 to 12 days. Hypochlorite will then be carried through the existing 2" PVC line to the ferrous chloride pumps.

Chemical Feed Pumps: The two ferrous chloride pumps (PulsaFeeder Model 7120-S-E, capacity 105 GPH) are fully functional and integrated into Otay's SCADA system. The pumps are equipped with all of the necessary safety features, including: pressure relief/bypass valve, back pressure valve, pulse dampeners, pressure gauges, and shutoff valves. The pump's turndown ratio is 200:1. The discharge of the ferrous pumps is currently piped to the basin influent; temporary piping must be installed to post-filter chlorine application point.



Appendix A – Existing Chlorine Room with Chlorine Dioxide System



Appendix B -- Chlorine Dioxide Generator Modifications

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Industry

July 18, 2013

UNPRICED SCOPE

Mr. James McVeigh
Senior Water Operations Supervisor
Otay Water Treatment Plant
1200 Wueste Road
Chula Vista, CA 91915 USA
Phone: 619-980-2908
Email: JMcveigh@sandiego.gov

**RE: CHLORINE DIOXIDE GENERATOR UTILIZING 0.8% SODIUM HYPOCHLORITE SUPPLY
OTAY WATER TREATMENT PLANT – CHULA VISTA, CALIFORNIA
Siemens Quote No. Q130716JM1**

Siemens is pleased to offer the following proposal for the supply of two **Millennium III™ T-850 WM** chlorine dioxide generators. The **Millennium III™ T-850 WM** is a manual three-chemical (sodium chlorite / hydrochloric acid / sodium hypochlorite) chlorine dioxide generator that will allow the Otay Water Treatment Plant to eliminate chlorine gas as a chlorine dioxide precursor chemical.

These generators would replace the existing two-chemical chlorine dioxide generators currently located at the Otay Water Treatment Plant. The existing distribution equipment to include the batch tank, flow control valves, chlorine dioxide solution pump, and related piping and appurtenances would remain in place.

The objective is to generate chlorine dioxide with high efficiency utilizing 25% sodium chlorite, 15% hydrochloric acid, and 0.8% sodium hypochlorite. While Siemens cannot guarantee 95% efficiency with this generator design, every effort will be made to ensure that the generators are converting sodium chlorite as efficiently as is possible. Design inputs are summarized in Table 1 as follows:

1. DESIGN INPUTS

San Diego – Otay Water Treatment Plant	
Peak Flow, MGD	34
Average Flow Rate, MGD	18
Approximate ClO ₂ Dose Rate mg/L	0.6 – 3.0 continuous feed average dose, nominally 1.0 PPM
ClO ₂ Use Rate lbs/day	65 – 850 based on seasonal variations
Current Average ClO ₂ use rate	~340 lbs/day
Current Service Rate	Generator set-point of 675 lbs/day, approximate 50% run time

Table 1 – Design Inputs

2. EQUIPMENT PROPOSAL

Siemens recommends the replacement of the existing two-chemical generators with two **Millennium III™ T-850 WM** designed to utilize a 0.8% sodium hypochlorite supply. When compared to retro-fitting the existing generators, the benefits of new generators are:

1. Ease of installation: a new generator provides a fully-engineered, factory-built, modular design that can be easily placed into operation at the site.
2. Reduced site time: a new generator requires less site time to bring to operational status when compared to the field work involved in retrofitting an existing generator.
3. Full factory warranty: Siemens warrants the Chemical Feed System complete for a period of twelve (12) months from acceptance or eighteen (18) months from shipment, whichever occurs first.

Siemens Water Technologies LLC
Industry Sector

2650 Tallevast Road
Sarasota, FL 34243
USA

Tel: +1 941-355-2971
Fax: +1 941-359-7985
www.water.siemens.com

Page 1 of 7

4. Cost Effective: as a result of the benefits listed above, a new generator is a more cost effective option when compared to field-installed parts.

2.1 Equipment Description

Siemens shall provide two Millennium III™ T850-WM three chemical manual chlorine dioxide generators capable of producing up to a maximum of 850 lbs/day of chlorine dioxide for delivery to the chlorine dioxide batch tank. The production range of these generators is 65 to 850 lbs of ClO₂ per day each. The generators comprise principally:

Qty	Description
2	Chlorine Dioxide Generator Siemens Millennium III™ T850-WM chlorine dioxide generation system capable of 10:1 turndown range, with production capability from 65-850 lbs/day of ClO ₂ each. Wall-mounted design constructed of HDPE backboard with surface-mounted components. Includes King rotameters.

Table 2 – T850-WM Major Components (standard system)

2.2 Controls Impacts

Existing controls shall be integrated with the proposed unit. Controls impacts are minimal with the following controls impacts are identified:

1. Integration of new magnetic flow meters for monitoring the supply of hydrochloric acid and sodium hypochlorite to the chlorine dioxide generators.

2.3 Distribution System Impacts

The current standard production rate of chlorine dioxide at the Otay Water Treatment Plant is 675 lbs/day. At this production rate, the chlorine dioxide generator runs approximately 50% of the time, per Otay WTP personnel. The water booster pump that is currently installed on the existing generator produces a flow rate of 35 gallons per minute. At a production rate of 675 lbs of ClO₂ per day and a generator water flow rate of 35 gallons per minute, the concentration of the chlorine dioxide solution produced is approximately 1,600 ppm.

A conversion of the generator to function with 0.8% sodium hypochlorite will have an impact on the concentration of chlorine dioxide produced at all points in the generator production range. The weak bleach conversion will require a larger eductor to handle the approximate sixteen-fold (12.5% / 0.8% = 15.6) increase in precursor chemicals being drawn through the eductor. The water booster pump that is currently in place will provide sufficient volume and pressure to run the new eductor efficiently. It may be necessary to increase the volume of water through the eductor to approximately 50 gal/minute, as discussed during our recent meeting. With the chlorine eductors being taken off line, water supply to the pump will not be an issue. At a production rate of 675 lbs/day the concentration of the chlorine dioxide solution produced by the generator will be approximately 1,000 ppm. The consequence of this is that the generator will have to run approximately 80% of the time. If the ClO₂ production rate is set to 850 lbs/day, the generator will run approximately 65% of the time.

Table 3 summarizes the production rate and subsequent precursor demands at various rates needed as follows:

Production Rate (lbs/day ClO ₂)	Precursor Demand (gal/day)		
	25% Sodium Chlorite	15% Hydrochloric Acid	0.8% Sodium Hypochlorite
850	475	360	7,252
675	377	286	5,759
340	190	144	2,901
85	48	36	725

Table 3 - ClO₂ Precursor Use Rates

2.4. Sodium Hypochlorite Dilution

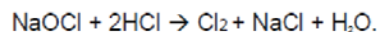
The supply of 0.8% sodium hypochlorite to the chlorine dioxide generators will be provided by on-site electrolytic generators. Provision of 0.8% sodium hypochlorite through the dilution of conventional 12.5% sodium hypochlorite is no longer under consideration.

2.5 Process Description

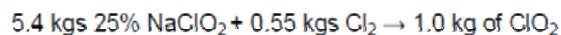
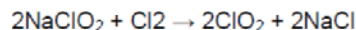
As you are aware, the existing chlorine dioxide generator utilizes sodium chlorite and chlorine gas to produce chlorine dioxide. Siemens Millennium III™ T-Series generators produce chlorine dioxide (ClO₂) in a two stage continuous process under vacuum conditions to generate chlorine dioxide safely and efficiently. In the first stage, molecular chlorine gas is generated *in situ* by the reaction of a 0.8% solution of sodium hypochlorite and a 15% solution of hydrochloric acid. In the second stage, the chlorine gas is reacted with a 25% sodium chlorite solution to produce chlorine dioxide.

Efficiency and yield in both cases discussed herein is maximized by reaction of chemical reactants in their concentrated form under vacuum. These reaction conditions favor the immediate formation of chlorine dioxide, thereby minimizing byproduct formation found in other types of generators.

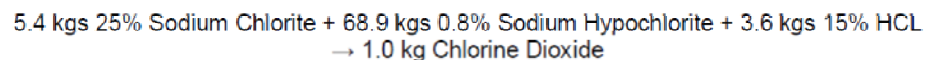
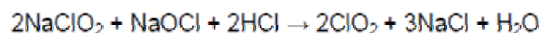
The first stage of the Millennium III™ T-Series generator reaction process combines the sodium hypochlorite solution with the hydrochloric acid solution to produce chlorine in-situ under vacuum according to the reaction:



A subsequent second stage reaction follows immediately and is between the sodium chlorite solution and the in situ produced chlorine gas (produced under vacuum) according to the reaction:



The first and second stage reaction chemistry of the Millennium III™ T-Series generator process is a continuous inline combined reaction process that occurs in milliseconds under vacuum, and the overall combined reaction is described by the following:



As chlorine dioxide is formed in the reaction column (under vacuum), it is immediately ejected into the generator's motive/dilution water stream that drives the generator's vacuum eductor. The motive water stream is at a constant flow rate and constant pressure (using the water booster pump and pressure regulator provided as a standard part of the generator assembly skid).

Exiting the generator is an aqueous chlorine dioxide solution of variable but adjustable strength (can be for example a 200 to 3,000 PPM ClO₂ aqueous feed solution - the actual concentration produced is based on the PLC settings and the reagent feed rate rotameter settings).

- Unlike other generation systems, the Millennium III process does not require reagent metering pumps or pH control, or feed of excess chlorine (above the stoichiometric requirements of the above reaction) or acid

addition to the motive water stream driving the generator's eductor.

- Unlike other generation systems, the Millennium III process does not require that molecular chlorine gas first be injected to the motive water stream to pre-dissolve chlorine in the motive water to create hypochlorous acid (always in an equilibrium with hypochlorite at pH 7.0), the latter of which can precipitate an alternate and less efficient pathway to chlorine dioxide formation which also leads to much higher by-product levels (chlorate, un-reacted by-product chlorite, caustic, and THM's/THAA's) in the produced chlorine dioxide aqueous feed stream.
- The pH of the Millennium III produced aqueous chlorine dioxide feed stream is greater than 6.0 and less than 7.0, and nominally averages 6.5 to 6.8. The pH of the produced aqueous chlorine dioxide feed solution from most other competitive chlorine gas/chlorite based ClO₂ systems is typically < 5.0 and nominally closer to 4.0 which can create a more corrosive environment.

2.6 Yield Determination Analysis

Yield shall be determined as the ratio of chlorine dioxide, chlorite and chlorate generated to the theoretical stoichiometric maximum. The yield shall be demonstrated by an amperometric analysis capable of differentiating between chlorine, chlorine dioxide, chlorite and chlorate. The theoretical stoichiometric maximum shall be determined from the feed rates of the two reacting chemicals. Analysis shall be confirmed by the procedure as described in Standard Methods for the Examination of Water and Wastewater, APHA-AWWA-WPCF, 20th edition 1998, Amperometric Method II, 4500-ClO₂E.

3. PROGRAM SCHEDULE

A program schedule shall be provided when more information is available regarding the timing of the electrolytic supply of sodium hypochlorite at the Otay Water Treatment Plant.

- Submittals: 4-6 weeks after contract acceptance
- Provision of 0.8% electrolytically-generated sodium hypochlorite (Responsibility of Otay Water Treatment Plant)
- Equipment: 12 – 16 weeks after receipt of approved submittals pending production approval at the time of order

Siemens shall provide 3 electronic copies and 1 hard copy of the operating manual with the shipment of the generator.

The above delivery schedule is based on credit approval and receipt of approved contract and submittals.

4. STORAGE/ SITE

The unit must be shielded from direct sunlight and rain, and protected from electrical surges such as lightning. Siemens requires the chlorine dioxide equipment to be located in a building with proper ventilation in a non-condensing environment. Operating temperature range is 40°F-104°F. Sites not meeting these minimum requirements may invalidate the equipment warranty. The generation system and precursors should also be protected from freezing. The current chlorine dioxide generators are suitably located.

The customer shall be responsible for all civil works, mechanical, electrical, and plumbing at the site, including the following as shown in Table 5:

Potable Water	Up to 50 gpm at a minimum 80 psi
Safety	Provide and install a safety shower and eye wash within easy access of each

	generator
Dedicated Power Source	240/480 VAC, Three Phase; Dedicated 20 Amp circuit breaker AND; 120 VAC, with Dedicated 20 Amp circuit breaker
Floor Space/Door Allowance	Wall-Mount Generator Backboards to be supplied are: 36" W x 62" H x 0.75" D
Drain	2"
Sodium Hypochlorite	Electrolytic Supply
Sodium Chlorite – 25%	475 gpd (at generator maximum)
Sodium Hypochlorite – 0.8%	7,252 gpd (at generator maximum)
Hydrochloric Acid – 15%	360 gpd (at generator maximum)

Table 5 – Customer Responsibilities

6. CHEMICALS

Siemens can provide a supply of **AKTA KLOR 25** (sodium chlorite, 25% aqueous solution) in drum, tote or bulk quantities. **AKTA KLOR 25** is registered with EPA (No. 21164-6) and meets requirements of NSF/ANSI Standard 60 and AWWA B303-05. A separate quotation for **AKTA KLOR 25** can be provided upon request.

7. SERVICES

7.1 Installation

Siemens will provide installation services with the provision of the equipment described above. It is anticipated that installation of the new generator will require two Siemens personnel for two days.

7.2 Start-up and Training Services

Siemens shall provide a service representative for three (3) eight hour day during the start up phase of the project. Two days shall be dedicated to equipment inspection, start up and process verification. One day shall be dedicated for training on the safe and proper handling of chlorine dioxide, operation of the equipment, and analytical methods to the owner's operations and laboratory personnel. Startup, training and installation supervision are set up for a single visit.

7.3 Ongoing Services

A Siemens service technician can also visit the site to perform regular routine maintenance on the generator, optimize chemical dosing, provide safety training for the Water Plant staff, if requested, and provide emergency technical or mechanical response as necessary. A separate quotation for ongoing services as described can be provided upon request.

8. PRICE

Siemens is pleased to offer:

- Two (2) **Millennium III™ T850-WM** chlorine dioxide generators for a total of \$XXX,XXX F.O.B factory with freight allowed to jobsite. This price includes Siemens start-up and training services. This training program includes analytical, applications support and safety reviews with operators and lab staff.
- Additional days required on site will be charged at \$1,200/day plus travel expense.

The price associated with this quote will remain in effect for a period of ninety (90) days. If we are not in receipt of an order by the end of this firm price period, we reserve the right to modify the prices quoted.

Terms of payment are NET 30 days from date of invoice. These prices do not include any applicable taxes.

Siemens warrants the Chemical Feed System complete for a period of twelve (12) months from acceptance or eighteen (18) months from shipment, whichever occurs first.

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The attached Siemens Water Technologies LLC. Terms and Conditions are considered part of this proposal and shall prevail.

Thank you again for this opportunity to allow Siemens Water Technologies LLC Inc. to quote on your chlorine dioxide requirements. If you have any questions or need additional information, please contact me at 909-837-9908.

Sincerely,

Siemens Water Technologies LLC

Dan Trybulski

Dan Trybulski
Technical Sales Representative, Municipal Services

PROPOSAL FORMS

PRICE PROPOSAL FORMS

The Design-Builder agrees to the design and construction of **Sodium Hypochlorite at Otay Water Treatment Plant Design-Build Contract**, for the City of San Diego, in accordance with these contract documents for the lump sum price listed below. The Design-Builder guarantees the proposed prices for a period of 120 Days (90 Days for federally funded contracts and contracts valued at \$500,000 or less) from the date Proposals are due until the award of the Task Order. The duration of the price guarantee shall be extended by the number of Days required for the City to obtain all items necessary to fulfill all conditions precedent e.g., bond and insurance.

Item No.	NAICS CODE	Description	Quantity	D*	Unit	Unit Price	Extension
BASE BID							
1	524126	Bonds (Payment and Performance)	1		LS	 	\$
2	541330	Engineering and Design Services	1	D	LS	 	\$
3	238210	Field Construction	1		LS	 	\$
4	541330	Storm Water Pollution Prevention	1		LS	 	\$
5	238990	Disposal of Class I Regulated Waste Material	15		CY	\$	\$
6	238990	Disposal of Class II Regulated Waste Material	20		CY	\$	\$
7	237110	Transition Hypochlorite Tank System – Type I	1		AL	 	\$10,000
8		City Contingency – Type II	1		AL	 	\$230,000
TOTAL DESIGN-BUILD PROPOSAL (ITEMS NO 1 THROUGH 8 INCLUSIVE):							\$

*** Design Element (For City Use)**

Total Price For Design-Build Proposal, (items 1 through 8, inclusive) amount written in words:

PROPOSAL FORMS

Design-Builder: _____

Title: _____

Signature: _____

The names of all persons interested in the foregoing proposal as principals are as follows:

IMPORTANT NOTICE: If Design-Builder or other interested person is a corporation, state secretary, treasurer, and manager thereof; if a co-partnership, state true name of firm, also names of all individual co-partners composing firm; if Design-Builder or other interested person is an individual, state first and last names in full.

NOTES:

- A. The Contract Price to be used in the selection process as described in Section 14 of the RFP will be determined on the Base Proposal alone.
- B. Prices and notations shall be in ink or typewritten. All corrections (which have been initiated by the Design-Builder using erasures, strike out, line out, or "white-out") shall be typed or written in with ink adjacent thereto, and shall be initialed in ink by the person signing the Proposal.
- C. Failure to initial all corrections made in the proposal documents may cause the Proposal to be rejected as **non-responsive** and ineligible for award.
- D. Blank spaces must be filled in. The Design-Builder's failure to submit a price may render the Proposal **non-responsive** and ineligible for award.
- E. Unit prices shall be entered for all unit price items. Unit prices shall not exceed two (2) decimal places. If the Unit prices entered exceed two (2) decimal places, the City will only use the first two digits after the decimal points without rounding up or down.
- F. All extensions of the unit prices bid will be subject to verification by the City. In the case of inconsistency or conflict between the product of the Quantity x Unit Price and the Extension, the product shall govern.

PROPOSAL FORMS

- G. In the case of inconsistency or conflict, between the sums of the Extensions with the estimated total Bid, the sum of the Extensions shall govern.
- H. Proposals shall not contain any recapitulation of the Work. Conditional Proposals will be rejected as being **non-responsive**. Alternative proposals will not be considered unless called for.