

## Farhad, Mohammad@Waterboards

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**From:** Wyels, Wendy@Waterboards  
**Sent:** Monday, October 05, 2015 2:49 PM  
**To:** Farhad, Mohammad@Waterboards  
**Subject:** FW: Clarifications to Mandates #3, 4, and 5 of CAO R5-2015-0704  
**Attachments:** Amdt 2 - DVI Water Plant Operation Reliability Study - Signed.pdf; Appendix A.10 - DVI WWTP O&M Manual & SOPs.docx

Hi Mohammed,  
If this isn't in ECM, can you put it in there?  
thanks

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**From:** Reyes, Pedro@CDCR [<mailto:Pedro.Reyes@cdcr.ca.gov>]  
**Sent:** Tuesday, September 29, 2015 9:24 AM  
**To:** Wyels, Wendy@Waterboards  
**Cc:** Stanley, Jeff@CDCR  
**Subject:** RE: Clarifications to Mandates #3, 4, and 5 of CAO R5-2015-0704

Good Morning Ms. Wyels,

Attached please find the executed contract dealing with the reliability study for the Water Plant and a copy of the document you requested. The contract for the manual and Standard Operating Procedures is being finalized and should be available within two to three days. I will forward a signed and executed copy as soon as it is available. I am so sorry for not supplying the information yesterday as I promised, I was hoping to provide a signed copy rather than a Word document. The contract analyst told me this morning that he should have an executed agreement within two to three days.

Please let me know if you require additional information at this time.

Pedro B. Reyes  
Regional Manager  
California Department of Corrections and Rehabilitation  
Facilities Asset Management Branch  
Facility Planning, Construction and Management  
Phone: (916) 255-0516  
E-mail: [pedro.reyes@cdcr.ca.gov](mailto:pedro.reyes@cdcr.ca.gov)

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**From:** Wyels, Wendy@Waterboards [<mailto:Wendy.Wyels@waterboards.ca.gov>]  
**Sent:** Wednesday, September 23, 2015 3:03 PM  
**To:** Reyes, Pedro@CDCR  
**Subject:** RE: Clarifications to Mandates #3, 4, and 5 of CAO R5-2015-0704

Thanks!

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**From:** Pedro Reyes [<mailto:pedro.reyes@cdcr.ca.gov>]  
**Sent:** Wednesday, September 23, 2015 3:02 PM  
**To:** Wyels, Wendy@Waterboards; Altevogt, Andrew@Waterboards; Holmes, Kari@Waterboards; Farhad, Mohammad@Waterboards  
**Cc:** Stanley, Jeff@CDCR; Cordano, Fred@CDCR; Vasconcellos, Edward@CDCR; Rodriguez, Jaime (DVI)@CDCR; Price,

Jerome@CDCR

**Subject:** RE: Clarifications to Mandates #3, 4, and 5 of CAO R5-2015-0704

Ms. Wendy,

I need to work with Jeff Stanley but he is off until Monday. I will get you the information on Monday, September 28, 2015.

Pedro B. Reyes  
Regional Manager  
California Department of Corrections and Rehabilitation  
Facilities Asset Management Branch  
Facility Planning, Construction and Management  
Phone: (916) 255-0516  
E-mail: [pedro.reyes@cdcr.ca.gov](mailto:pedro.reyes@cdcr.ca.gov)

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**From:** Wyels, Wendy@Waterboards [<mailto:Wendy.Wyels@waterboards.ca.gov>]

**Sent:** Wednesday, September 23, 2015 2:53 PM

**To:** Reyes, Pedro@CDCR; Altevogt, Andrew@Waterboards; Holmes, Kari@Waterboards; Farhad, Mohammad@Waterboards

**Cc:** Stanley, Jeff@CDCR; Cordano, Fred@CDCR; Vasconcellos, Edward@CDCR; Rodriguez, Jaime (DVI)@CDCR; Price, Jerome@CDCR

**Subject:** RE: Clarifications to Mandates #3, 4, and 5 of CAO R5-2015-0704

Hi Pedro,

Thank you for sending the letter. In order to assist us in reviewing DVI's compliance with the Cleanup and Abatement Order, please send us copies of the Dewberry Consultants contracts related to (a) developing the critical list of parts for the RO plant, (b) preparing the updated O&M manual for the wastewater treatment plant. I'd appreciate it if we could receive the contracts by October 1<sup>st</sup>.

Thanks  
Wendy

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**From:** Pedro Reyes [<mailto:pedro.reyes@cdcr.ca.gov>]

**Sent:** Friday, September 18, 2015 10:14 AM

**To:** Altevogt, Andrew@Waterboards; Wyels, Wendy@Waterboards; Holmes, Kari@Waterboards; Farhad, Mohammad@Waterboards

**Cc:** Stanley, Jeff@CDCR; Cordano, Fred@CDCR; Vasconcellos, Edward@CDCR; Rodriguez, Jaime (DVI)@CDCR; Price, Jerome@CDCR

**Subject:** Clarifications to Mandates #3, 4, and 5 of CAO R5-2015-0704

Good Morning Ms. Wyels,

Attached find our clarifications to Mandates #3, 4, and 5 of Cleanup and Abatement Order R5-2015-0704. We continue to work hard so that all mandates are corrected in the most expeditious manner. Please let me know if there is a need to provide additional information or if this letter does not address the Board's concerns so that I can rectify the situation immediately.

Thanks for patience and understanding,

Pedro B. Reyes  
Regional Manager  
California Department of Corrections and Rehabilitation

Facilities Asset Management Branch  
Facility Planning, Construction and Management  
Phone: (916) 255-0516  
E-mail: [pedro.reyes@cdcr.ca.gov](mailto:pedro.reyes@cdcr.ca.gov)

CHECK HERE IF ADDITIONAL PAGES ARE ATTACHED 5 Pages

AGREEMENT NUMBER	AMENDMENT NUMBER
<b>5600005107</b>	<b>2</b>
REGISTRATION NUMBER	

- This Agreement is entered into between the State Agency and Consultant named below:  
 STATE AGENCY'S NAME  
**CALIFORNIA DEPARTMENT OF CORRECTIONS AND REHABILITATION**  
 CONSULTANT'S NAME  
**DEWBERRY ARCHITECTS, INC.**
- The term of this Agreement is **Upon Approval** through **December 31, 2017**
- The maximum amount of this Agreement after this amendment is: **\$ 274,050.00**  
**Two Hundred Seventy-Four Thousand, Fifty Dollars and No Cents**
- Pursuant to the provisions of Article 8, the parties mutually agree to this amendment as follows. All actions noted below are by this reference made a part of the Agreement and incorporated herein:

Contract Number 5600005107, is amended as follows:

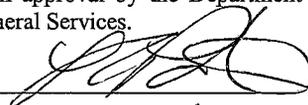
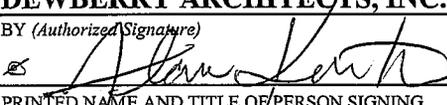
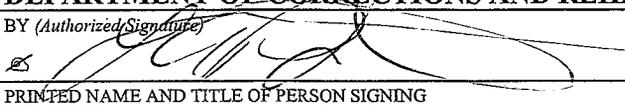
Consultant shall perform additional Architectural/Engineering Services for the **Water Plant Operation Reliability Study at the Deuel Vocational Institute in Tracy, California**. These additional services shall be provided in accordance with the attached Scope of Services, Appendix A.2 and Schedule of Submittals B.2.

Compensation for such services shall be as indicated in the attached Schedule of Fees, Appendix C.2.

The Compensation and Method of Payment section of the Articles is hereby revised to add the amount of \$149,980.00 and shall now reflect the total indicated in Item 3 above.

All other terms and conditions shall remain the same.

IN WITNESS WHEREOF, this Agreement has been executed by the parties hereto.

<b>CONSULTANT</b>		<b>CALIFORNIA</b> Department of General Services Use Only	
CONSULTANT'S NAME (If other than an individual, state whether a corporation, partnership, etc.) <b>DEWBERRY ARCHITECTS, INC.</b>		I hereby certify that all conditions for exemption set forth in Penal Code Code Sections 7000-7016 and/or State Administrative Manual Section 1206 have been complied with and with and this contract is exempt from from approval by the Department of General Services.  By:   Date: <u>5/18/2015</u>	
BY (Authorized Signature) 	DATE SIGNED (Do not type) <u>5.12.15</u>		
PRINTED NAME AND TITLE OF PERSON SIGNING <b>ALAN KORTH, Associate Principal</b>			
ADDRESS <b>4540 Duckhorn Drive, Suite #200 Sacramento, CA 95834 (916) 928-2625</b>			
STATE OF CALIFORNIA			
AGENCY NAME <b>DEPARTMENT OF CORRECTIONS AND REHABILITATION</b>			
BY (Authorized Signature) 	DATE SIGNED (Do not type) <u>5/18/2015</u>		
PRINTED NAME AND TITLE OF PERSON SIGNING <b>JACK CUMMINGS, Chief, Contracts and Procurement</b>			
ADDRESS <b>9838 Old Placerville Road, Suite B, Sacramento, CA 95827</b>			

Exempt per:

**WATER PLANT OPERATION RELIABILITY STUDY  
DEUEL VOCATIONAL INSTITUTE**

**AMENDMENT 2**

This Scope of Services delineates the services for the Water Plant Operation Study at the Deuel Vocational Institution (DVI) in Tracy, California. The Consultant shall review and recommend options for the optimization of the operation of the Zero Liquid Discharge (ZLD) system to improve reliability and manage operation and maintenance costs. The project will evaluate trends in ZLD process performance, reliability, water recovery efficiency, chemical and electrical power consumption, equipment maintenance requirements, and operational procedures compared to the original equipment specifications and performance. Maintenance records will be reviewed and discussed with DVI operations staff and management to identify probable causes of equipment wear, scale formation, corrosion, and other operational factors which may adversely affect ZLD system reliability. Recommendations will be developed to provide redundant backup equipment for critical components to enhance ZLD system reliability. The consultant shall focus on evaluation and optimization of the ZLD system to provide reliable operation and performance of the drinking water system. Other treatment processes, such as the Reverse Osmosis (RO) system, will be considered to the extent that they affect or are impacted by the performance of the brine concentrator ZLD system.

**I. Project Initiation Teleconference**

- A. Conduct an initial teleconference with DVI management and operations personnel to discuss and refine project goals, objectives, and schedule. Prepare an agenda for review and editing by DVI prior to the teleconference. Discuss key issues and concerns, and identify specific needs and requirements.
  - 1. Project goals, objectives and schedule
  - 2. Plant capacity and reliability
  - 3. Groundwater quality
  - 4. RO brine water quality
  - 5. Brine concentrator performance trends
  - 6. Brine concentrator scaling and cleaning
  - 7. Chemical feed systems
  - 8. Waste/seed tank operation
  - 9. Brine deaerator operation
  - 10. Vapor compressor
  - 11. Equipment corrosion, pitting, and wear
  - 12. Brine evaporation ponds
  - 13. Maintenance schedules
  - 14. Pan Lymisters

## **II. Review Plans, Reports, and Records**

- A. Obtain existing plans, reports, and operation and maintenance records of the DVI water treatment plant, storage, conveyance, and wastewater treatment facilities. Review raw water, treated drinking water, and wastewater quality data for a recent 12-month period. If available, review photographs and video of the existing internal mechanical components which show mechanical wear, pitting, scaling, corrosion or other maintenance issues.

## **III. Site Observation and Meetings**

- A. Conduct up to 3 trips for on-site physical observation of the RO and ZLD treatment systems, chemical feed systems, evaporation ponds, and related equipment to assess their existing condition. Discuss potential impacts to current operations, and equipment replacement and/or rehabilitation requirements with DVI operations staff. Summarize discussions and key observations in a Technical Report to CDCR management and operations personnel to discuss and refine.

## **IV. Water Quality Evaluation**

- A. Evaluate water quality of the groundwater source and RO brine based on a recent 12-month period of historical data. Compare current water quality to design values and to conditions at startup of the Water Treatment Plant (WTP). Identify water quality trends since startup of the WTP. Evaluate the impact of drought conditions on water quality and the effects of changing water quality on WTP performance. Evaluate the quantity of groundwater which could potentially be blended with the RO treated water while maintaining the drinking water Total Dissolved Solids (TDS) concentration and the concentrations of inorganic minerals within secondary drinking water limits. Evaluate the quantity of groundwater which could potentially be blended with the RO treated water while maintaining wastewater effluent discharge limits for TDS and inorganic minerals such as iron and chlorides.

## **V. Optimization of Operations and Maintenance**

- A. Develop and evaluate alternative treatment strategies and operational modifications to improve operations and maintenance. Evaluate causes of and mitigation equipment corrosion, pitting, and wear and mitigation measures. Recommend bench-scale testing if required, to assist in evaluating alternative treatment strategies. Identify upgrades to the treatment processes and chemical feed systems to enhance reliability and maximize capacity of the existing WTP. Review design of the pan lysimeters and recommend changes if needed.

## **VI. Develop Operations Manual And Provide Training**

- A. Develop an Operations Manual (OM) for the RO Plant, Brine Concentrator and Waste Ponds. The OM will have detailed operational instructions for the complete system.

Two days on-site training will be provided based on the new operations and maintenance manual.

## **VII. Evaluation of Treatment Optimization and Upgrade Alternatives**

- A. Develop and evaluate alternatives to optimize treatment performance to achieve the water quality goals and enhance reliability for the drinking water treatment systems. Identify waste by-products of treatment alternatives and possible disposal methods. Treatment alternatives to be evaluated include upgrade or replacement of components of the ZLD process equipment and potential addition of backup equipment for critical components. Evaluate optimal sizing of treatment equipment to accommodate changing water quality due to drought and other environmental factors such as long term climate change. Identify specific requirements to integrate recommended equipment upgrades or new equipment into the DVI site and existing treatment processes. Evaluate treatment alternatives based on non-monetary criteria such as reliability, operability, and adaptability to future regulations and environmental conditions. Recommend the best treatment upgrade alternative to meet water quality goals. If appropriate, identify additional variations or upgrades that could achieve better water quality or reliability for relatively small incremental upgrade costs. Evaluation of the RO system will be limited to impacts that the RO system and the ZLD might have on one another.

## **VIII. Economic Evaluation of Treatment Optimization Alternatives**

- A. Develop capital costs, O&M costs, and present value or life cycle costs for feasible treatment optimization and upgrade alternatives.

## **IX. Dairy Water Supply Alternative**

- A. Review the Prison Industry Authority dairy water use operations and the existing piping/water supply system for using alternative well water supply. Provide technical report with recommendations, piping requirements and filtering requirements for the system.

## **X. Project Summary Technical Report**

- A. Develop a Final Technical Report to document the results of the evaluations. Provide quality assurance review of work products. Review comments from CDCR on the draft document and incorporate responses into the Final Technical Report. Provide the Final Technical Report to CDCR in both printed paper and in electronic pdf format.

**END OF APPENDIX A.2**

**WATER PLANT OPERATION RELIABILITY STUDY  
DEUEL VOCATIONAL INSTITUTE**

**AMENDMENT 2**

<b>Submittals</b>	<b>Completion Period (Months from NTP)</b>
<b>Final Technical Report</b>	<b>6 Months</b>

**END OF APPENDIX B.2**

**WATER PLANT OPERATION RELIABILITY STUDY  
DEUEL VOCATIONAL INSTITUTE**

**AMENDMENT 2**

<b>TASKS</b>	<b>Current Contract</b>	<b>Amendment 2 Value</b>	<b>New Contract Total</b>
Water Plant Operation Reliability Study		\$149,980.00	
<b>CONTRACT TOTAL:</b>	<b>\$124,070.00</b>	<b>\$149,980.00</b>	<b>\$274,050.00</b>

**END APPENDIX C.2**

**DEUEL VOCATIONAL INSTITUTION  
WASTEWATER TREATMENT PLANT OPERATION AND MAINTENANCE  
MANUAL AND STANDARD OPERATING PROCEDURES UPDATE**

**AMENDMENT 10**

This Scope of Services delineates the services for the Wastewater Treatment Plant Operation and Maintenance (O&M) Manual and Standard Operating Procedures (SOPs) Update at the Deuel Vocational Institution (DVI) in Tracy, California. The Consultant shall develop an O&M Manual and SOPs for the existing Membrane Bioreactor (MBR) wastewater treatment plant at DVI. The Consultant shall review the original O&M Manual and compare current operational procedures for the MBR system to the original equipment specifications and performance. The Consultant shall review the MBR maintenance records and discuss current operational procedures with DVI staff and management to identify operational limitations and equipment which may adversely affect MBR system reliability. The Consultant shall review modifications to the existing MBR system and operating procedures implemented by DVI staff to improve treatment efficiency and reliability under current operating conditions. Modified or updated operating procedures and SOPs will be incorporated into the updated O&M Manual to enhance MBR system reliability.

**I. Project Management and Quality Assurance**

- A.** This task includes internal project organization and management requirements including setting up project staffing, budgeting, scheduling and invoicing. Provide quality assurance review on all work products.

**II. Project Initiation Teleconference**

- A.** Conduct an initial teleconference with DVI management and operations personnel to discuss and refine project goals, objectives, and schedule. Prepare an agenda for review and editing by DVI prior to the teleconference. Discuss key issues and concerns, and identify specific needs and requirements. Discussions will include, but not be limited to:
  - 1. Project goals, objectives and schedule
  - 2. Plant capacity and reliability
  - 3. Wastewater quality
  - 4. Headworks (influent pumping, screening, and grit removal)
  - 5. Membrane Bioreactor
  - 6. UV Disinfection

7. Effluent Cooling System
8. Biosolids thickening and dewatering systems
9. Chemical systems
10. Supervisory Control and Data Acquisition System (SCADA)
11. Electrical power system and emergency generator
12. Equipment maintenance schedules

### **III. Review Plans, Reports, and Records**

- A. Obtain facility plans, the existing O&M Manual, and operation and maintenance records and reports for the existing MBR wastewater treatment facility. Review wastewater quality data and treatment plant performance for a recent 12 month period to identify potential performance limitations and develop operational modifications to improve reliability.

### **IV. Site Observation and Meetings**

- A. Conduct up to 2 trips to DVI for on-site physical observation of the MBR treatment system and discussion of current operations and equipment replacement and/or rehabilitation requirements with DVI operations staff. Summarize key observations in a Technical Memorandum to California Department of Corrections and Rehabilitation (CDCR) management and operations personnel to discuss and refine the results.

### **V. Update Operations Manual and Standard Operating Procedures**

- A. Develop an O&M Manual for the MBR facility which includes detailed operational instructions for the complete system. Review and update the standard operating procedures to incorporate current operating conditions and system modifications implemented since startup of the facility. Review and update Troubleshooting Guidelines.
  1. Treatment Process Descriptions
  2. Treatment Process Control Strategies
  3. Treatment Process Control Calculations
  4. Equipment Descriptions and Design Criteria
  5. General Operating Procedures applicable to all mechanical equipment
    - a. Pre- Startup checklists

- b. Occupational hazards and safety checklists
    - c. Confined Space entry procedures
  6. Standard Operating Procedures for specific equipment units:
    - a. Startup
    - b. Normal operation
    - c. Alarms and emergency response
    - d. Shutdown
  7. Troubleshooting Guidelines for evaluation of equipment performance and maintenance
  8. Preventive Maintenance Schedules
  9. Recommended Spare Parts Inventory
- B.** Submit the draft O&M Manual to CDCR, review comments from CDCR on the draft document, and incorporate the responses into the final O&M Manual. Provide the final O&M Manual to CDCR in both printed paper and in electronic pdf format.

## **VI. On-Site Operations Training**

- A.** Provide two days on-site training based on the updated O&M Manual. Recognizing that the DVI operations staff has extensive experience with the existing system and detailed knowledge of the capabilities and limitations of the existing equipment, on-site training will consist of an overview of modifications to the updated O&M Manual followed by question and answer sessions with the DVI operations staff. Consultant shall solicit questions from DVI staff prior to the on-site training to focus the training activities on the specific areas of concern to the operators. Consultant shall prepare responses to the operator questions prior to the on-site training to maximize exchange of useful and relevant technical information.

**END OF APPENDIX A.10**