



PALMDALE WATER DISTRICT

A CENTURY OF SERVICE

January 20, 2021

BOARD OF DIRECTORS

AMBERROSE MERINO

Division 1

DON WILSON

Division 2

GLORIA DIZMANG

Division 3

KATHY MAC LAREN-GOMEZ

Division 4

VINCENT DINO

Division 5

DENNIS D. LaMOREAUX

General Manager

ALESHIRE & WYNDER LLP

Attorneys

AGENDA FOR REGULAR MEETING OF THE BOARD OF DIRECTORS OF THE PALMDALE WATER DISTRICT

TO BE HELD VIA TELECONFERENCE ONLY

DIAL-IN NUMBER: 571-748-4021 ATTENDEE PIN: 667-290-975#
Submit Public Comments at: <https://www.gomeet.com/667-290-975>

MONDAY, JANUARY 25, 2021

6:00 p.m.

NOTES: To comply with the Americans with Disabilities Act, to participate in any Board meeting please contact Dawn Deans at 661-947-4111 x1003 at least 48 hours prior to a Board meeting to inform us of your needs and to determine if accommodation is feasible.

Additionally, an interpreter will be made available to assist the public in making **comments** under Agenda Item No. 4 and any action items where public input is offered during the meeting if requested at least 48 hours before the meeting. Please call Dawn Deans at 661-947-4111 x1003 with your request. (PWD Rules and Regulations Section 4.03.1 (c))

Adicionalmente, un intérprete estará disponible para ayudar al público a hacer **comentarios** bajo la sección No. 4 en la agenda y cualquier elemento de acción donde se ofrece comentarios al público durante la reunión, siempre y cuando se solicite con 48 horas de anticipación de la junta directiva. Por favor de llamar Dawn Deans al 661-947-4111 x1003 con su solicitud. (PWD reglas y reglamentos sección 4.03.1 (c))

Agenda item materials, as well as materials related to agenda items submitted after distribution of the agenda packets, are available for public review at the District's office located at 2029 East Avenue Q, Palmdale (Government Code Section 54957.5). Please call Dawn Deans at 661-947-4111 x1003 for public review of materials.

PUBLIC COMMENT GUIDELINES: The prescribed time limit per speaker is three-minutes. Please refrain from public displays or outbursts such as unsolicited applause, comments, or cheering. Any disruptive activities that substantially interfere with the ability of the District to carry out its meeting will not be permitted, and offenders will be requested to leave the meeting. (PWD Rules and Regulations, Appendix DD, Sec. IV.A.)

Each item on the agenda shall be deemed to include any appropriate motion, resolution, or ordinance to take action on any item.

- 1) Pledge of Allegiance/Moment of Silence.
- 2) Roll Call.
- 3) Adoption of Agenda.



- 4) Public comments for non-agenda items.
- 5) Presentations:
 - 5.1) None at this time.
- 6) Action Items - Consent Calendar (The public shall have an opportunity to comment on any action item on the Consent Calendar as the Consent Calendar is considered collectively by the Board of Directors prior to action being taken.)
 - 6.1) Approval of minutes of Regular Board Meeting held January 11, 2021.
 - 6.2) Payment of bills for January 25, 2021.
 - 6.3) Approval of Resolution No. 21-1 Authorizing Specified Individuals to Transact Business With UBS Financial Services, Inc. (No Budget Impact – Finance Manager Williams)
 - 6.4) Approval of Resolution No. 21-2 Authorizing Specified Individuals to Transact Business With Citizens Business Bank. (No Budget Impact – Finance Manager Williams)
- 7) Action Items – Action Calendar (The public shall have an opportunity to comment on any action item as each item is considered by the Board of Directors prior to action being taken.)
 - 7.1) Consideration and possible action on authorizing staff to enter into a contract for as-needed Professional Engineering Services with each of the following firms: Civiltec Engineering, Inc., Stantec Consultant Services, Inc., and Hazen and Sawyer, P.C. (\$100,000.00, not-to-exceed, for each firm – Budgeted – Budget Item No. 1-02-5070-007, Consultants – Engineering/Grant Manager Rogers)
 - 7.2) Consideration and possible action on rejecting the bid from Advanced Chemical Transport, Inc. (dba ACTenviro) and authorizing staff to enter into a contract for emergency sedimentation removal and disposal at Littlerock Reservoir with Innovative Construction Solutions. (\$530,100.00 – Budgeted – Work Order No. 20-422 – Engineering/Grant Manager Rogers)
 - 7.3) Consideration and possible action on authorizing staff to enter into a contract for inspection and cleaning of the District’s reservoirs with Tank Industry Consultants. (\$297,360.00, not-to-exceed, for fiscal years 2021, 2022, and 2023 – Budgeted – Work Order No. 20-111 – Engineering/Grant Manager Rogers)
 - 7.4) Consideration and possible action on authorization of the following conferences, seminars, and training sessions for Board and staff attendance within budget amounts previously approved in the 2020 Budget:
 - a) None at this time.
- 8) Information Items:
 - 8.1) Reports of Directors:
 - a) Standing Committees; Organization Appointments; Agency Liaisons:

- 1) Personnel Committee (Chair Dizmang/Committee Member Mac Laren-Gomez)
- 2) Antelope Valley East Kern Water Agency-AVEK (Director Dino)
 - b) General Report.
 - c) Committee Assignments. (President Dizmang)
- 8.2) Report of General Manager.
 - a) January 2021 written report of activities through December 2020.
- 8.3) Report of General Counsel.
- 9) Board members' requests for future agenda items.
- 10) Adjournment.



DENNIS D. LaMOREAUX,
General Manager

DDL/dd

RESOLUTION NO. 21-1

**A RESOLUTION OF THE
PALMDALE WATER DISTRICT
AUTHORIZING SPECIFIED INDIVIDUALS TO
TRANSACT BUSINESS WITH UBS FINANCIAL SERVICES, INC.**

WHEREAS, the Board of Directors of the Palmdale Water District (the "District") has authorized certain public investments to be deposited with UBS Financial Services, Inc., for the purpose of protecting public assets and earning a safe rate of return on those invested assets being long-term Account No. SS-11475 and short-term Account No.'s SS-11432 and SS-11469 and rate stabilization fund Account SS-24016; and

WHEREAS, from time to time the Palmdale Water District has cause to withdraw, deposit, reinvest, or otherwise change the disposition of those invested assets to fulfill the mission of the District; and

WHEREAS, the Board of Directors of the District, at their regular meeting of January 25, 2021, did authorize the Secretary to execute resolutions with respect to accounts of the District held by UBS Financial Services, Inc.; and

WHEREAS, the Board of Directors of the District, at their meeting of January 25, 2021, did hereby approve the above described resolutions authorizing certain individuals to act on the District's behalf with respect to the certain specified investments of the District with UBS Financial Services, Inc.; and

WHEREAS, the Board of Directors of the District intends and requires at least one Director acting with another Director or designated staff member or two designated staff members acting together to exercise authority over investment accounts.

NOW THEREFORE, BE IT RESOLVED, that Don Wilson, Gloria Dizmang, Vincent Dino, Amberrose Merino, and Kathy Mac Laren-Gomez, with any two of them acting together, are hereby authorized and directed to open an account with UBS Financial Services, Inc. in the District's name and on its behalf, for the purpose of purchasing and selling securities, and that UBS Financial Services, Inc. is hereby authorized to act upon any orders and instructions with respect to such accounts listed below and/or the delivery of securities or money therefrom when received from any of the two said individuals, acting together, who are each likewise hereby authorized to sign and deliver in the District's name and in its behalf, receipts for securities and/or funds so delivered or paid.

BE IT FURTHER RESOLVED, that any two of the following, Don Wilson, Gloria Dizmang, Vincent Dino, Amberrose Merino, or Kathy Mac Laren-Gomez acting together or any one of them together with Dennis D. LaMoreaux, Robert M. Egan or Michael A. Williams or Dennis D. LaMoreaux and Michael A. Williams acting together are hereby authorized to act on behalf of the District with respect to long-term Account No. SS-11475, the short-term Account No.'s SS-11432 and SS-11469, and rate stabilization fund Account No. SS-24016.

ADOPTED THIS 25TH DAY OF JANUARY, 2021.

President, Board of Directors

RESOLUTION NO. 21-2

**A RESOLUTION OF THE
PALMDALE WATER DISTRICT
AUTHORIZING SPECIFIED INDIVIDUALS TO
TRANSACTION BUSINESS WITH CITIZENS BUSINESS BANK**

WHEREAS, the Board of Directors of the Palmdale Water District (the “District”) has authorized certain public funds to be deposited with Citizens Business Bank for the purpose of protecting public funds; and

WHEREAS, from time to time the Palmdale Water District has cause to withdraw, deposit, reinvest, or otherwise change the disposition of those invested assets to fulfill the mission of the District; and

WHEREAS, the Board of Directors of the District, at their regular meeting of January 25, 2021, did authorize the President and/or Secretary to execute agreements with respect to accounts of the District held by Citizens Business Bank; and

WHEREAS, the Board of Directors of the District, at their meeting of January 25, 2021, did hereby approve the above described agreements authorizing certain individuals to act on the District’s behalf with respect to the certain specified accounts of the District with Citizens Business Bank; and

WHEREAS, the Board of Directors of the District intends and requires two Directors acting together or at least one Director acting with another director or designated staff member to execute authority over designated Treasury Management Agreement.

NOW, THEREFORE, BE IT RESOLVED, that Gloria Dizmag, and Don Wilson acting together, are hereby authorized and directed to open an account with Citizens Business Bank in the District’s name and on its behalf, for the purpose of securing services, and that Citizens Business Bank is hereby authorized to act upon any orders and instructions with respect to such accounts listed below and/or the delivery of securities or money therefrom when received from any of the two said individuals, acting together, who are each likewise hereby authorized to sign and deliver in the District’s name and in its behalf, receipts for securities and/or funds so delivered or paid.

BE IT FURTHER RESOLVED, that any two of Don Wilson, Gloria Dizmag, Kathy Mac Laren-Gomez, Amberrose Merino, or Vincent Dino acting together are hereby authorized to withdraw funds or to act on behalf of the District with respect to the General Account No. 047031559; Merchant Account No. 047031567; Customer Refund Account No. 047031575.

ADOPTED THIS 25TH DAY OF JANUARY, 2021.

President, Board of Directors

BOARD OF DIRECTORS
PALMDALE WATER DISTRICT

VIA: Mr. Adam Ly, Assistant General Manager
Mr. Dennis D. LaMoreaux, General Manager

January 19, 2021

The adopted 2019 Rate Analysis allocated funding for design of new pipelines, booster and well upgrades, reservoirs, and treatment plant maintenance. Staff will request task orders from either one or all three selected consulting firms based on cost of performing the task and availability of consultants to meet the District's schedule. The services will include preparation of initial studies, reports, plans, environmental compliance documents, technical specifications, engineering cost estimates, bid assistance, construction management and inspection. It is expected the consultants will provide services for some of the District's projects including new wells, wells rehabilitations, new reservoirs, new booster stations, hydraulic evaluations, demand analysis and forecasting, large diameter pipelines, recycled water infrastructure, structural assessments, reservoir rehabilitations, treatment plant assessments, and sediment removal.

Strategic Plan Initiative/Mission Statement:

This item is under Strategic Initiative No. 1 – Water Resource Reliability and No. 3 – Systems Efficiency. This item directly relates to the District's Mission Statement.

Budget:

This item is budgeted and will be covered as part of Budget Item No. 1-02-5070-007 - Consultants.

Supporting Documents:

- Scoring Summary
- Civiltec Engineering, Inc. Statement of Qualifications
- Stantec Consulting Services, Inc. Statement of Qualifications
- Hazen and Sawyer, P.C. Statement of Qualifications

**As Needed Professional Engineering Services
Statement of Qualifications
Scoring Summary**

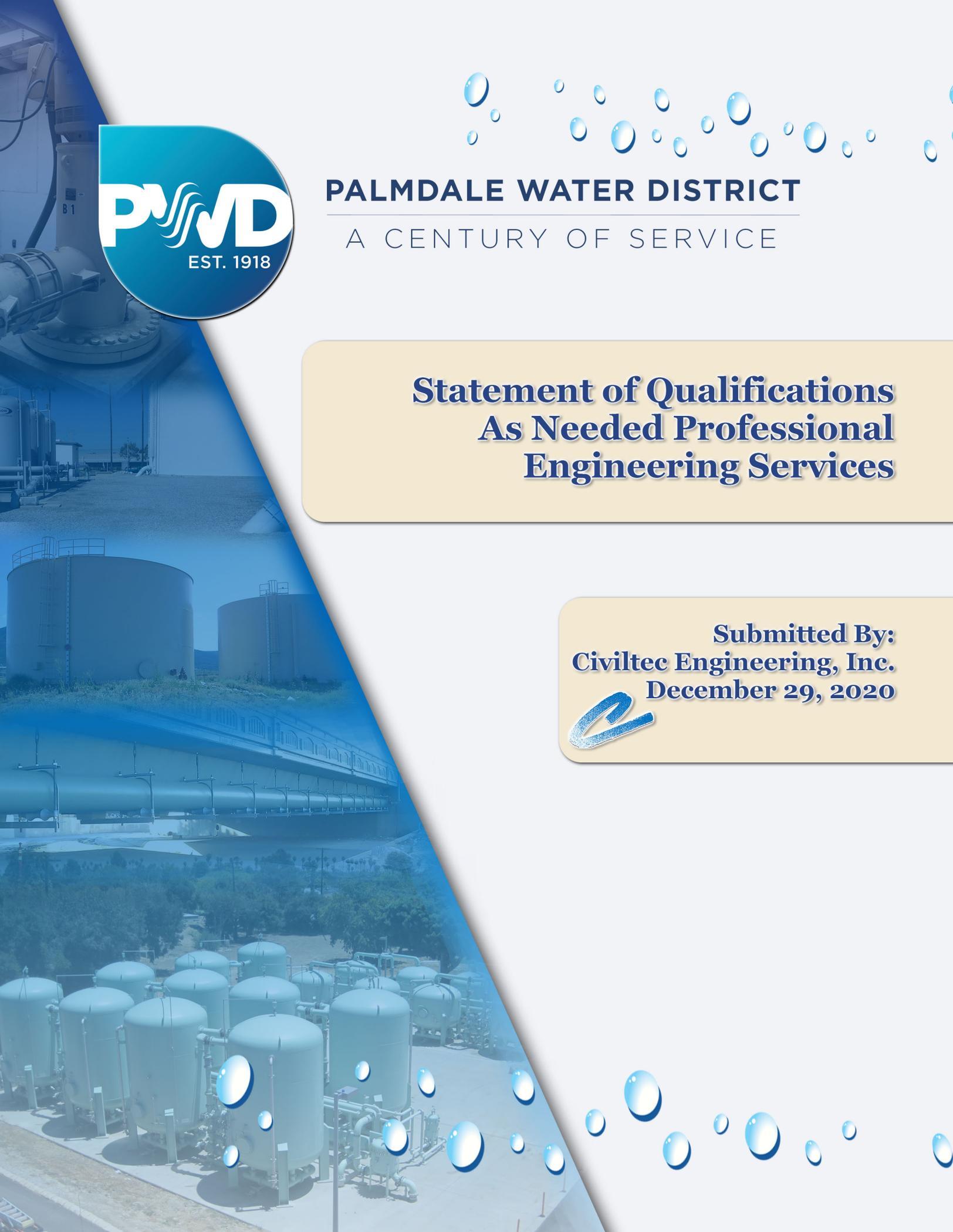
Vendor	Rater 1	Rater 2	Rater 3	Rater 4	Total Score
Civiltec Engineering Inc.	99.0%	78.0%	85.3%	76.6%	84.72%
Stantec Consulting Services Inc.	94.0%	73.0%	84.3%	80.0%	82.83%
Hazen and Sawyer, P.C.	88.8%	64.8%	84.3%	65.6%	75.88%
Kimley-Horn and Associates, Inc.	87.8%	65.4%	81.3%	65.8%	75.08%
IEC	95.0%	68.0%	70.2%	53.6%	71.70%
Kennedy/Jenks Consultants, Inc.	83.6%	73.0%	79.4%	50.6%	71.65%
RTM Engineering Consultants	78.6%	62.0%	74.4%	39.2%	63.55%
P2S Inc.	78.6%	33.2%	71.2%	39.8%	55.70%



PALMDALE WATER DISTRICT
A CENTURY OF SERVICE

**Statement of Qualifications
As Needed Professional
Engineering Services**

**Submitted By:
Civiltec Engineering, Inc.
December 29, 2020**





Civil, Water, Wastewater, Drainage, Transportation and
Electrical/Controls Engineering • Construction Management • Surveying
California • Arizona

Palmdale Water District
2029 E Avenue Q
Palmdale, CA 93550

December 29, 2020

Attention: Scott Rogers | Engineering/Grants Manager

Subject: Statement of Qualifications
As Needed Professional Engineering Services

Dear Selection Committee:

The Palmdale Water District (PWD) is seeking professional planning, environmental compliance, design, construction management and inspection services for your water systems. *Civiltec engineering, inc. (Civiltec)* is excited to have the opportunity to assist PWD in carrying out your mission to deliver high quality water to current and future customers. We understand and share your vision of striving for excellence in providing high quality, reasonably priced water in the growing Antelope Valley area.

Providing on-call professional planning, engineering, surveying and construction phase services is what *Civiltec* does! Our team has a diverse knowledge of water infrastructure planning, design, system reliability, facility maintenance, site development, aging infrastructure rehabilitation, hydraulic analysis, electrical and control systems, constructability reviews, value engineering and construction management for wells, reservoirs, booster stations, distribution and transmission pipelines, ditch conversion to pipelines, treatment plants and sediment removal projects. **We have 28 on-call contracts in California.** Our approach with on-call clients is founded by our ability to be responsive. PWD will benefit from our state-of-the-art communication tools, our quality assurance/quality control (QA/QC) programs and our enthusiasm and commitment to servicing your community.



Leighton Consulting, Inc.

A LEIGHTON GROUP COMPANY

Tuesday, December 22, 2020

SC20-155

Civiltec Engineering, Inc.
118 West Lime Avenue, Second Floor
Monrovia, California 91016-2841

Attention: Mr. W. David Byrum, PE, President

**Subject: Introductory Letter (Subconsultant)
Geotechnical and Materials Testing Services for
Palmdale Water District
As-Needed Professional Engineering Services FY 21
Palmdale, Los Angeles County, California**

This letter serves as Leighton Consulting Inc.'s "Introductory Letter" as described in Section IV.C. of Palmdale Water District's November 18, 2020 *Request for Qualifications* (RFQ). Leighton Consulting, Inc. will provide geotechnical design, hazardous materials sampling and testing, materials testing and special inspection services for this as-needed contract. This work will be performed primarily in our nearby Santa Clarita office.

As President and CEO of Leighton Consulting, Inc., I am authorized to obligate the firm exclusively to the Civiltec team. I have executed this letter, which acknowledges our commitment to this proposed contract and to the Civiltec team. I can be contacted directly in connection with this letter at (909) 527-8771 or at tbenson@leightonconsulting.com.

Respectfully submitted,

LEIGHTON CONSULTING, INC.

Thomas C. Benson, Jr., PE, GE
President and CEO

TCB:tcb

Distribution: (1) addressee (PDF via e-mail)

December 23, 2020

W. David Byrum
Civiltec Engineering Inc.
118 West Lime Avenue
Monrovia, California 91016

Reference: Letter of Interest in Structural Engineering Services for
Palmdale Water District
As-Needed Professional Engineering Services

Dear Mr. Byrum;

We are excited to participate in Civiltec's team for "As Needed professional Engineering Services" for Palmdale Water District. ANB will provide Civiltec with Structural Engineering design and support services provided by California Licensed Civil and Structural Engineers.

ANB has over 30 years of experience in Structural Engineering and in design and retrofit of various infrastructure facilities including:

- Booster Stations, Wells, Vaults, Water Tanks and Reservoirs
- Bridges, Crossings, Retaining structures, Towers
- Treatment Plants, Drainage and Flood Control Structures
- Seismic Retrofits and other Processing, Treatment, and Administrative Buildings.

Thank you in advance for your consideration.

Respectfully,
ANB Consulting Engineers, Inc.



Vahé Petrossian, PE, SE
Principal Structural Engineer
WVP:ks/ 1850.1



TO: David Byrum
Civiltec Engineering, Inc.
118 West Lime Avenue, Second Floor
Monrovia, CA 91016-2841

FROM: Kear Groundwater
P.O. Box 2601
Santa Barbara, CA 93120-2601

DATE: December 24, 2020

SUBJECT: *Exclusive Subconsultant Introduction
Professional Hydrogeologic Services
As-needed Professional Engineering Services FY21
Palmdale, Los Angeles County, California*

Kear Groundwater (KG) presents this letter as our “Introductory Letter” as described in Section IV.C. of Palmdale Water District’s November 18, 2020 Request for Qualifications (RFQ). Kear Groundwater, as a subconsultant to Civiltec Engineering Inc. exclusively to provide hydrogeologic evaluation, and data review; water supply well locating, evaluation, rehabilitation, disposition, construction design, testing, and equipping recommendations and special inspection services for this as-needed contract.

As a sole proprietorship, I am authorized to obligate KG exclusively to the Civiltec team. I have executed this letter, which acknowledges our commitment to this proposed contract and to the Civiltec team. I can be contacted directly in connection with this letter at (805) 512-1516 or at jordan@keargroundwater.com

Please do not hesitate to contact me with any questions.

Best Regards,

A handwritten signature in black ink, appearing to read 'Jordan Kear', with a stylized flourish at the end.

Jordan Kear
Principal Hydrogeologist
Professional Geologist No. 6960
California Certified Hydrogeologist No. 749



Los Angeles
706 S. Hill Street, 11th Floor
Los Angeles, CA 90014
(213) 335-3434

Westlake Village
920 Hampshire Road, Suite A5
Westlake Village, CA 91361
(805) 367-5720

December 28, 2020

Civiltec Engineering, Inc.
118 West Lime Avenue
Monrovia, California 91016

Subject: Introductory Letter (Subconsultant) – Environmental Impact Report (EIR), California Environmental Quality Act (CEQA), Mitigated Negative Declaration (MND), and National Environmental Policy Act (NEPA) Services for Palmdale Water District As Needed Professional Engineering Services FY21

Dear Mr. W. David Byrum, PE, President

On behalf of Meridian Consultants LLC, I am pleased to submit this letter which serves as Meridian Consultants LLC’s “Introductory Letter” as described in Section IV.C. of Palmdale Water District’s November 18, 2020 Request for Qualifications (RFQ). Meridian Consultants LLC will provide Environmental Impact Report (EIR), California Environmental Quality Act (CEQA), Mitigated Negative Declaration (MND), and National Environmental Policy Act (NEPA) services for this as-needed contract.

As Principal of Meridian Consultants LLC, I am authorized to obligate the firm exclusively to the Civiltec team. I have executed this letter, which acknowledges our commitment to this proposed contract and to the Civiltec team. I can be contacted directly in connection with this letter at (805) 367-5734 or at champson@meridianconsultantsllc.com.

Sincerely,

Meridian Consultants LLC

A handwritten signature in black ink that reads "Chris Hampson". The signature is written in a cursive, flowing style.

Chris Hampson, *Principal*



Key Benefits to the *Civiltec* Team

- *Civiltec* provides high-quality engineering services with uppermost level of integrity. We have earned our client's trust and confidence through hard work and engineering excellence.
- Our team members are experts in planning, modeling, conceptualization, design, cost estimating, permitting and construction management of public works water infrastructure.
- Our team has a firm knowledge of facility design, system reliability issues, facility maintenance, operations, site development and facilities construction methods.
- *Civiltec* is committed to building the right team, tailored to your specific needs. W. David Byrum, PE, will be your primary point of contact. He will ensure the team provides consistent communication and coordination with PWD and project stakeholders. He will also work closely with the project team to ensure any opportunity executed under this engagement is delivered with clear, concise and accurate plans. Mr. Byrum will be supported by task leaders C. Shem Hawes, PE (water quality and supply); David Song, PE (water distribution, transmission, pumping and storage); Greg Ripperger, PE (planning, hydraulic/ hydrologic and construction management); and Sky Younger, PE (electrical and instrumentation/controls (I&C)).

We appreciate the opportunity to submit our qualifications and are confident that we are the right firm for this contract. As firm President, I have the authority to bind and represent the firm. I will be your primary point of contact and can be reached at dbyrum@civiltec.com, (626) 357-0588 or the office address herein with any comments or questions.

Sincerely,

CIVILTEC engineering, inc.

A handwritten signature in blue ink, appearing to read 'W. David Byrum'.

W. David Byrum, PE | President



FIRM PROFILE

Founded in California in 1986 as a C corporation, *Civiltec's* Monrovia office will be the lead office responsible for delivering projects to PWD with support from the other three offices.

Monrovia, CA
(Corporate)
Office = 23

Fullerton, CA
Office = 3

Phoenix, AZ
Office = 9

Prescott, AZ
Office = 8

Civiltec is committed to providing you with consistent, forward-thinking engineering and cost-effective solutions. Our team produces reports, plans, specifications and cost estimates (PS&E) by communicating and troubleshooting early to identify and avoid potential construction problems and/or delays. We promote a decision-making process based on the consensus of ideas and information from the entire project team. This helps to ensure that sound and intelligent recommendations and solutions are reached giving your project the best chance for success. We are not too big; we can and will be there when needed in an efficient and affordable fashion. We are not too small; we will provide you with the personnel depth needed to guarantee quality service with adherence to your project schedule.

Employee training is necessary to arm staff with the technical skills to provide clients with the most value and assurance of successful project delivery. Staff is encouraged to be active in professional development associations and industry conferences. Active association involvement includes the American Council of Engineering Companies, Association of California Water Agencies, American Public Works Association, American Water Works Association, California Stormwater Quality Association, California Water Environment, Orange County Water Association, Southern California Water Utility Association, San Gabriel Valley Water Association, and National Society of Professional Surveyors.

Civiltec's Relevant Technical Capabilities

Water Infrastructure

- Asset Mgt./Life-Cycle Analysis
- Fire Protection
- Groundwater & Aquifer Investigations
- Master Plans & Urban Water Management Plans (UWMPs)

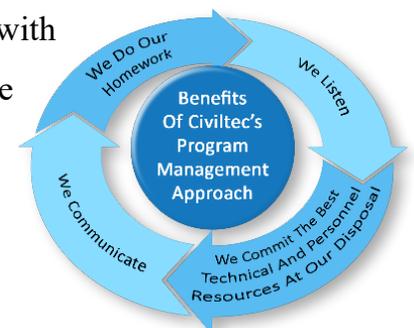
- Modeling/Surge Analysis
- Operation & Maintenance Support
- Pipelines & Pump Stations
- Regulatory Permitting/Compliance
- Reservoirs, Tanks & Wells
- Treatment & Recharge Facilities



Civiltec's Relevant Technical Capabilities	
<p>Electrical / I&C</p> <ul style="list-style-type: none"> • Potable & Recycled Pump Stations • Water & Wastewater Facilities • SCADA & I&C Systems • Power Analysis & Distribution • Control System Networks 	<ul style="list-style-type: none"> • Emergency & Standby Power • Grounding • Lighting Systems • Solar/Renewable Energy • Substation/Grid Interconnects • Wireless Network Radio
<p>General Civil Engineering</p> <ul style="list-style-type: none"> • Grading & Drainage • Channels & Storm Drains • Erosion Control • Stormwater Management 	<ul style="list-style-type: none"> • Pavement Engineering/Preservation • Permitting • Plan Review Services • Traffic Control Plans • Utility Coordination/Relocation
<p>Construction Phase Services</p> <ul style="list-style-type: none"> • Pre-Bid & Bidding Assistance • Construction Administration • Construction Management 	<ul style="list-style-type: none"> • Construction Observation • Contract Management • Permitting & Compliance • Public Outreach & Education
<p>Surveying & Mapping</p> <ul style="list-style-type: none"> • Aerial Control Surveys • ALTA/ACSM Surveys • Boundary Analysis • Construction Staking 	<ul style="list-style-type: none"> • Control Networks • Easements & Legal Descriptions • Map Preparation • Title Research & Opinions • Topographic Surveys

PROJECT MANAGEMENT APPROACH TO ENSURE PROJECT SUCCESS

Civiltec follows a simple four-part philosophy to promote the timely and effective completion of all projects; (1) we do our homework, (2) we listen, (3) we commit the best technical and personnel resources at our disposal, and (4) we communicate. This philosophy minimizes the need for amendments to contracts and/or change orders. Only with a complete understanding of your goals, the project requirements, potential utility conflicts and stakeholder/other agency requirements and concerns can we prepare what we believe will be the most efficient, economical and practical work plan. We then develop an approach with the best available technical expertise and resources to satisfy all the goals and bring the project to a timely and successful completion.





Santa Clarita Valley Water Agency (SCV Water) On-call

Reference: Brent Payne, PE | 661.259.2737 | bpayne@scvwa.org

Civiltec has been under an annual contract with SCV Water (formerly known as the Santa Clarita Water Division of Castaic Lake Water Agency (CLWA)) to provide professional services for water system planning, design and construction support since 2007. Services have included program development, implementation of program cost and schedule controls, program reporting, funding assistance, consultant/contractor management, staff augmentation, risk identification and management, environmental compliance, development management and coordination, engineering reviews, geographic information system (GIS) support, hydraulic modeling and analysis, and general administrative assistance for projects. We have also provided extensive planning, modeling and design efforts for several new subdivisions that impact their water system. Other projects have included preparing master plans, recycled water system feasibility studies, property ownership exhibits, surveys and design of pipelines, pump stations, tanks, reservoirs, on-site chlorine generation pilot, access roads, structural analysis, roof retrofits, traffic control plans, well siting and design, slope remediation, drainage improvements, and well blending. Construction management and observation services have also been provided.

To date, we have completed more than 210 projects. Many of these projects were completed in phases to keep project fees within the acceptable contract values.

City of La Verne, Public Works Department, City Utility Engineer

Reference: Dan Keeseey | 909.596.8741 | dkeeseey@ci.la-verne.ca.us

Civiltec has provided planning, engineering, construction management and observation services to La Verne's Public Works Department since 1992. Projects have included water and sewer system improvements, street reconstructions, bridge widenings, bike and horse trails, storm drain and site improvements, building renovations, master planning, water quality assessments, reservoirs, pump stations, new wells, rehabilitation of existing wells, an air-stripper to remove volatile organic compounds, a nitrate/perchlorate reduction treatment plant, chloramination trim stations and miles of water and sewer pipelines. **Civiltec** assists La Verne's staff on a daily basis with task assignments that requires engineering input. **Civiltec** has completed more than 135 projects under the on-call contract.



La Habra Heights County Water District, District Engineer

Reference: Michael Gualtieri | 562.697.6769 | mike@lhhcwd.com

Mr. Byrum has served as District Engineer for the La Habra Heights County Water District since 1999. To date, more than 95 projects have been completed under this contract. Services have included boundary/easements, slope erosion/repair, preliminary studies (pipelines, wells and roadways), specification writing and standard drawings, pressure study/hydraulic analysis, water master plan/updates, vulnerability assessment, rate study, transmission conduit leak repair, air valve replacement, district-wide SCADA system upgrades, meter replacements, construction management services, groundwater assessment, various water system upgrades, planning for an upcoming PFAS treatment plant and design/construction support for numerous pipelines, reservoirs, and wells.

Select relevant projects include the development/installation of Well Nos. 10 and 11; destruction of Well Nos. 2, 3 and 5; rehabilitation of Reservoir Nos. 2 and 5A; design/construction management of the 2.0-million-gallon (MG) Reservoir No. 9; and the groundwater assessment/reactivation of Well Nos. 8 and 9.

KEY PERSONNEL

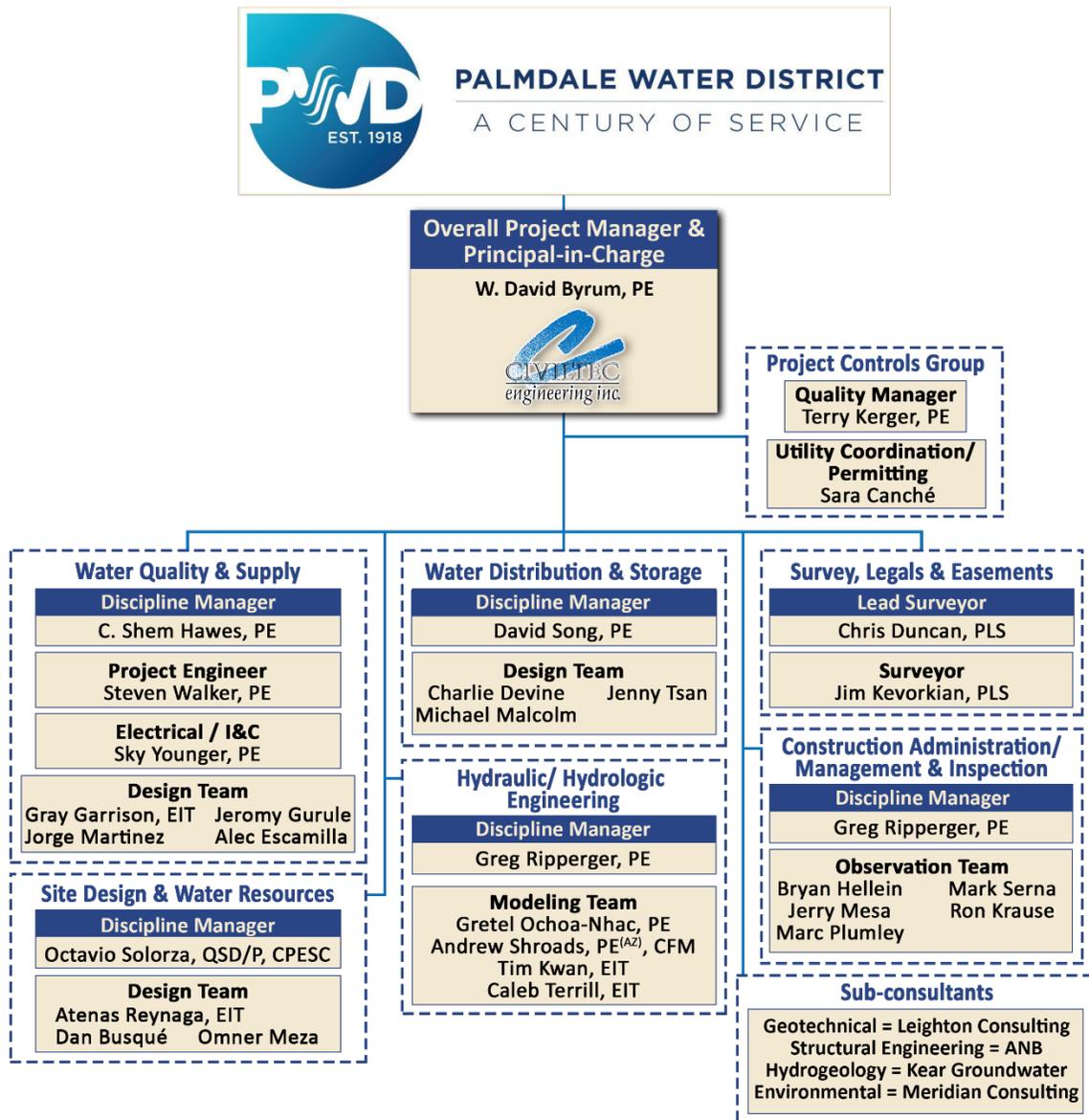
Personnel in our Monrovia office are experienced public works and water system engineers, surveyors, construction managers and qualified observation staff with combined 410+ years of technical experience. *Civiltec's* resources include 11 registered civil engineers, 1 registered electrical engineer, 4 registered land surveyors, 2 certified floodplain managers (CFM), 6 engineers-in-training (EIT) and support staff that includes project managers, designers, CADD technicians, surveyors and administrative personnel. All work assigned to us will be managed out of this office. Key staff proposed will not be reassigned or replaced without your prior written authorization.

Civiltec is committed to building the right team for each project, tailored to your specific needs. We have immediate staff availability (averaging 20-50% availability) to begin working on projects assigned under this as needed contract. To ensure project resource availability we conduct weekly project manager meetings to review project status and



resource utilization. This allows us to handle multiple assignments at the same time and rapidly adjust to changes required to tackle an expeditious schedule.

The organizational chart demonstrates our depth of available staff. Following are brief key team members qualifications. Two-page resumes are included as an Appendix.



W. David Byrum, PE | Overall Project Manager & Principal-in-Charge



Mr. Byrum is President and Principal Engineer of *Civiltec*. He brings 40+ years (28+ with *Civiltec*) of experience as a systems planner, design engineer, project manager, principal engineer and construction manager. He is an expert in the planning and design of water distribution and transmission pipelines, water treatment plants, booster pumping stations, steel and concrete reservoirs, groundwater wells, specialty valving



stations, storm drains and street improvement projects. He also prepares regulatory agency compliance reports and technical studies to ensure water purveyors remain in compliance with current regulations. Mr. Byrum serves as an expert witness and has been involved in several cases centered on water industry issues, including the Chromium 6 Pacific Gas and Electric (PG&E) case for 6 years.

C. Shem Hawes, PE | General Project Manager / Water Quality & Supply



Mr. Hawes brings 18+ years (13+ with *Civiltec*) of water and wastewater experience and is a Partner in the firm. He has been integral in developing relationships with clientele and interacting at multiple levels with business partners and owners to develop solutions for water, wastewater and public works projects. Water engineering experience includes the planning, design and construction management of pipelines, booster pump stations, reservoirs and water treatment facilities. He has prepared design reports, UWMPs, master plans, drought contingency plans, directed modeling efforts for distribution facilities, developed operations and maintenance manuals, prepared permits through the Division of Drinking Water (DDW) and created process and instrumentation diagrams. Mr. Hawes also heads up our PFAS treatment efforts including media determination, cost benefit, site planning, design of plants, start up and operations.

David Song, PE | Water Distribution & Storage



Mr. Song brings 16+ years (14+ with *Civiltec*) of engineering experience and is a Partner in the firm. His expertise is in potable water infrastructure design, engineering and management. His typical responsibilities include project management and supervision of design staff, client correspondence, management of project budgets and schedules, technical writing and planning, hydraulic analysis and modeling, developing PS&E packages, construction management and performing project plan checks. Mr. Song has been responsible for the design and project management of more than 150,000 linear feet of distribution and transmission pipelines and construction traffic control plans, pump stations, wells and reservoirs. He has also secured permits for projects with public agencies and cities located in Los Angeles, Orange and Ventura Counties, DDW and California Department of Transportation (Caltrans).



Greg Ripperger, PE | Hydraulic/Hydrologic Modeling / Construction Mgt.

Mr. Ripperger brings 11+ years (6+ with *Civiltec*) of experience in water engineering and construction management. His water experience includes hydraulic modeling, water system simulation, master planning, pipelines booster stations, surge protection and water distribution planning for large development projects. As a construction manager, he has been responsible for the full scope of construction management, including quality, sustainability, safety and budgets. Mr. Ripperger's ability to quickly understand a water system and solve system problems with simple solutions makes him an excellent asset to the team. His extensive hydraulic modeling experience includes using InfoWater, HEC-RAS, H2ONET and several other software platforms.



Octavio Solorza, QSD/P, CPESC | Site Design & Water Resources

Mr. Solorza brings 34+ years (32+ with *Civiltec*) of engineering experience and is a Partner in the firm. He has an extensive background in general civil engineering that includes site improvement design for water system facilities and public/private land development projects. He is an expert in the preparation and processing of grading and drainage concepts and plans, water pollution control plans, street improvement plans, storm drain plans, sewer plans, water plans, street lighting plans, technical studies, hydrology studies and hydraulic calculations, and computer modeling of systems.



Stephen "Sky" Younger, PE – Electrical / I&C

Mr. Younger brings 42+ years (2+ years with *Civiltec*) of electrical engineering experience. He specializes in solar, water/wastewater treatment systems, semiconductor fabrication plants, hospitals, high tech laboratories, and power plants. His water/wastewater knowledge includes electrical and I&C system design for replacement and refurbishments for a variety of pump stations, wells, treatment facilities and above and below ground reservoirs of various sizes. Projects have typically included design and construction oversight for the electric motor, motor control center equipped with variable frequency drives, communication controls (i.e. radio), coordination with local electrical service providers to attain the appropriate permits and service installation, design or extension of service conduits to bring power to the site, and telemetry and controls



equipment. Electrical improvements at treatment plants/facilities have included replacement of programmable logic controls to communicate with a city or water district SCADA system.



E. Chris Duncan, PLS | Survey, Legals & Easements

Mr. Duncan has been an active field and office land surveyor for 38+ years (8+ with *Civiltec*). He has performed all aspects of surveying throughout California including construction staking, boundary surveys, control surveys and topographic surveys. He excels at major hillside subdivision work and is a member of the American Congress on Surveying and Mapping and National Society of Professional Engineers. Mr. Duncan's software/equipment experience includes global positioning system (GPS), Total Station and Trimble VRS RTX GPS.

RESPONSIVENESS & ABILITY TO MEET CONTRACT NEEDS

Civiltec is accustomed to working on projects with a wide range of scopes and phases. Smaller projects may have a single phased approach with few tasks. Larger projects may have multiple phases and numerous tasks in each phase. We understand that the projects we ultimately undertake may have minimal upfront planning and/or may require development from the concept level through construction. We also know there may be projects that are ready for the final design phase or construction immediately. It is our experience that on-call clients benefit from scopes that streamline the design process, when appropriate. This typically results in projects that are designed on shorter schedules and reduced budgets. Some strategies that *Civiltec* has employed on on-call/as needed contracts include adjustments to scheduling of specific tasks to maintain the overall project schedule or the addition of project staff resources to handle specific project tasks.

Civiltec is organized in a way that we can form anywhere from a one-person team to a twenty-person team to accomplish small and large projects. In most cases, a team is assembled with the principal-in-charge, project manager, project engineer, staff engineer, and supporting design, drafting and administrative staff. There is redundancy in every position at *Civiltec* with tremendous flexibility in our system to allow for primary team members and backups.



UNIQUE QUALITIES

Problem Resolution. *Civiltec* advocates problem resolution through a decision-making process that is based on the consensus of ideas and information from all project team members as a group. This supports the adage that two heads are better than one and ensures that sound and intelligent recommendations and solutions are reached. Understanding the project requirements and identifying potential conflicts and design challenges early in the planning phase, in conjunction with listening to others, utilizing the best available technical expertise, and communicating are key to formulating sound and cost-effective solutions to issues associated with any project.

Cost Estimating. *Civiltec* maintains a comprehensive library of previous project construction costs. The library includes internal and external engineer's opinion of probable construction costs. We also utilize recent contractor bid tabulations and the most current construction cost publication for estimating unit costs for bid schedule items.

Schedule and Budget Control. *Civiltec* has an excellent track record producing complete PS&E and construction documents correctly, thoroughly, and on time. Whether working for a governmental agency, corporation or private landowner, we realize that time is money. Project budgets are determined using man-hour breakdowns by staff members for every task. Based on man-hour estimates and staff availability, project schedules are established for every task. We utilize Microsoft Project to develop and maintain overall project schedules. These schedules are used in communication with our clients and our staff, so all expectations and budgets are met.

QA/QC. *Civiltec's* project manager is responsible for the oversight, management and implementation of the QA/QC process. All documents, including but not limited to, reports, drawings, sketches, specifications, technical provisions, calculations, etc., are subject to internal QA/QC. Design inputs, such as applicable municipal, county, state and federal codes and standards, contract documents and other applicable quality and technical requirements are reviewed for applicability and incorporated, as needed. The QA/QC manager works with the project manager to review documents for conformance with applicable standards, accuracy and completeness.



REFERENCES

	Project Name	Contact Phone	Key Team					
			David Byrum, PE	Shem Hawes, PE	David Song, PE	Greg Ripberger, PE	Sky Younger, PE	Octavio Solorza
Master Plans	2021 Water Master Plan Update, Valley County WD	Jose Martinez (626) 338-7301	▲		▲	PM		
	2020 Water Master Plan Update, San Gabriel County WD	Jim Prior (626) 287-0341			▲	PM		
	2020 Water Master Plan Update, City of Brea	Michael Ho, PE (714) 990-7667	▲	▲	▲	PM		
	Water Master Plan and Water Rate Study, City of Covina	Dean D'Ospital (626) 384-5523		▲		PM		
	2018 and 2011 Water Master Plan Update, City of La Verne	Dan Keesey (909) 596-8741	PM	▲	▲	▲		
UWMPs	2020 & 2015 Urban Water Management Plan, City of La Verne	Dan Keesey (909) 596-8741	▲	▲		PM		
	2020 Urban Water Management Plan, Valley County WD	Jose Martinez (626) 338-7301			▲	PM		
	2015 Urban Water Management Plan, Cucamonga Valley WD	John Bosler (909) 257-9452	▲	▲	▲	PM		
	2015 Urban Water Management Plan, Walnut Valley WD	Sherry Shaw, PE (909) 595-1268	▲	▲		PM		
	2015 Urban Water Management Plan, Sunny Slope Water Company	Ken Tcheng (626) 287-5238	▲	▲		PM		
Pipelines	Alondra & Pioneer Pipeline Replacement (Design & CM), City of Norwalk	John Tran (562) 929-5926	▲		PM	▲		▲
	Princess Anne, Oakwood and Knight Main Replacements (Design & CM),	Douglas Caister (818) 790-6749	▲		PM			▲
	FY 20/21 Pipeline Replacement, Project Nos. 3 & 4, Crescenta Valley WD	Christina Olmedo (818) 236-4115	▲		PM			▲
	Steele Drive Water Main Replacement, City of Brea	Michael Ho, PE (714) 990-7667	▲		PM	▲		▲
	Pleasant Hills Water Main Replacement, City of Brea	Michael Ho, PE (714) 990-7667	▲		PM	▲		▲
Reservoirs	Valencia Reservoir Rehabilitation, City of Brea	Michael Ho, PE (714) 990-7667	▲		PM			
	Reservoir I Rehabilitation Evaluation, Sunny Slope Water Company	Troy Holland (626) 287-5238	▲	PM				
	Rehabilitation of Reservoir 2, La Habra Heights County WD	Michael Gualtieri (562) 929-5926	PM					
	Reservoir No. 7 Roof Rehabilitation, San Antonio Water Company	Brian Lee (909) 982-4107	▲			▲		▲
	Brasada Reservoir, Electric Service, Brasada Homes Land, LLC	Stan Stringfellow (626) 357-1200	▲	PM			▲	
Wells	Apple Valley Well No. 35, Building and Equipping, Liberty Utilities	Carol Thomas-Keefer (760) 247-6484	▲		PM		▲	▲
	Well No. 2 Replacement, California Domestic Water Company	Lynda Noriega (562) 947-3811	▲		PM		▲	▲
	Rosemead Well No. 11, CEQA Support, Pico WD	Mark Grajeda (562) 692-3756	▲		PM			
	Well No. 11, Pump and Vibrating Flow Pump, San Gabriel County WD	Jim Prior (626) 287-0341	▲		PM		▲	
	Fullerton Well No. 9, Electrical Improvements, City of Fullerton	Jose Medina (714) 738-6300	▲		PM		▲	
Pump Stations	Garth Booster Pump Station, California American Water	Dante Alday, PE (856) 727-6138	▲	PM		▲		▲
	Sand Canyon Plaza Pump Station, Santa Clarita Valley Water Agency	Brent Payne (661) 259-2737	▲		PM		▲	
	Four Grade Separation Pump Station Upgrade, City of Industry	Kristen Wagner (626) 333-2211	▲	▲		PM	▲	
	Nixon Booster Pump Station Replacement, Valley County WD	Tom Mortenson (626) 856-5990	▲		PM	▲	▲	▲
	Bradbury Estates Pressure Reducing Station, California American Water	Dante Alday, PE (856) 727-6138	▲		PM		▲	▲
Plant / Facilities	Bluff Street Treatment Plant Upgrades, City of Norco	Chad Blais (951) 270-5678	▲	PM				
	Plant 109 Storm Drain Design, Suburban Water Systems	Jorge Lopez (626) 543-2500	▲		PM		▲	▲
	WFA Treatment Plant Surface Pipeline Connection, San Antonio Water Company	Brian Lee (909) 982-4107	▲					
	Operation & Maintenance-Island Wide Water System, Southern California Edison Company	Danny Lu (626) 302-6501	▲	PM				
	Operations & Maintenance Manual Updates	David Oliver (805) 897-3800	▲	PM				
Treatment	Wheeler Chloramination Station, City of La Verne	Dan Keesey (909) 596-8741	PM	▲	▲		▲	▲
	Amherst WTP Sodium Hydroxide and Ammonia Dosing System, City of La Verne	Dan Keesey (909) 596-8741	▲	PM			▲	
	Plant W6 Ultraviolet Treatment System, San Gabriel Valley Water Company	Bryant Marroquin (909) 201-7359	▲	PM			▲	
	Well No. 8 PFAS Ion Exchange Treatment Plant, California Domestic Water Company	Lynda Noriega (562) 947-3811	▲	PM				▲
	Well No. 12 Water Treatment System, City of Santa Fe Springs	Frank Beach (562) 868-0511 x0511	▲	▲				▲
Miscellaneous	Advanced Water Meter Replacement (Multiple Cities), Gateway Water Management Authority	Traci Gleason (949) 300-7910	▲	▲		PM		
	Mojave Water Metering Station Turnout No. 5, City of Victorville	Shah Nawaz (760) 243-6353	▲		PM		▲	
	Operations Headquarter, Program Mgt. & Site Improvements, Valley County WD	Tom Mortenson (626) 856-5990	▲		PM			▲
	Address Generator Sizing, City of Compton	Brian Dickinson (310) 605-5524	▲	PM			▲	
	District-wide SCADA System Upgrades, La Habra Heights County WD	Michael Gualtieri (562) 929-5926	PM				▲	



RAW RATE SCHEDULE AND FIRM MULTIPLIER

Following is *Civiltec's* rate schedule through December 31, 2021. Our average multiplier is (3.04). Each personnel category has a different multiplier based upon utilization.

Senior Principal Engineer.....	\$250.00 (1.87)
Principal Engineer	\$240.00 (1.80)
Principal Engineer - Expert Witness Testimony	\$375.00 (2.81)
Senior Engineer	\$230.00 (2.90)
Senior Project Manager	\$220.00 (2.06)
Principal Electrical Engineer.....	\$205.00 (2.81)
Project Manager	\$200.00 (2.46)
Senior Project Engineer.....	\$195.00 (2.11)
Project Engineer	\$190.00 (2.01)
Senior Designer	\$185.00 (2.91)
Staff Engineer.....	\$150.00 (2.97)
Designer.....	\$140.00 (3.20)
Designer/Drafter	\$125.00 (3.33)
Planning Technician	\$110.00 (2.79)
Resident Engineer/Observer.....	\$110.00 (2.01)
CAD Technician.....	\$105.00 (3.55)
Junior Engineer.....	\$80.00 (1.90)
Administrative Assistant/Clerical	\$80.00 (2.22)
Two Man Survey Party.....	\$240.00 (2.56)
Survey Manager	\$180.00 (3.08)
Staff Land Surveyor	\$125.00 (2.13)
Subcontracted Services.....	Cost plus 15%
Mileage.....	\$0.545/mile

ACCEPTANCE OF PROFESSIONAL SERVICE AGREEMENT

Civiltec has reviewed the Professional Service Agreement included with PWD's request for proposal and will sign this agreement without changes.





APPENDIX – RESUMES



W. DAVID BYRUM, PE | PRESIDENT

Contract Role: *Primary Point of Contact / Overall Project Mgr.*

Professional Registration:

*Professional Civil Engineer
California No. 43296*

Education: *B.S., Mechanical Engineering, University of California, Los Angeles, 1977*

Professional Affiliations:

*American Council of Engineering Companies
American Water Works Assoc.
Assoc. of CA Water Agencies
California Utility Executives Management Association,
Board of Directors
CA Water Environment Assoc.
Orange County Water Assoc.
Rural Water Assoc. of Arizona
Southern California Water Utilities Assoc., Past President
San Gabriel Valley Water Assoc.*

Select Relevant Experience

City of La Verne Annual On-Call Engineering - Project Manager. This annual contract provides engineering services for infrastructure projects including water system improvements, sewer system improvements, street reconstruction projects and miscellaneous engineering. Mr. Byrum has been La Verne City Engineer and/or City Utility Engineer for La Verne since 1984. He has designed reservoirs, pump stations, rehabilitation of existing wells, an air-stripper to remove volatile organic compounds, numerous street and alley reconstruction projects, a 1.5-mile new roadway access into the hillside including all infrastructure, bridge widening, bike and horse trails, miles of pipelines, and building renovations. Recently completed projects include new water facility, sewer facility, storm drain facility and street construction standard drawings and standard bidding documents with updated general provisions. This on-call also included coordinating all La Verne efforts with Caltrans for the construction of the 30 freeway extensions through La Verne. This included providing extensive plan checking of the freeway plans as well as all subdivision work that impacted La Verne's utilities. Mr. Byrum represented La Verne in the establishment of a basin management plan (or adjudication) of the six groundwater basins that underlie La Verne, Claremont,

Upland and Pomona and assisted staff daily with task assignments that required engineering input. Mr. Byrum designed and construction managed the 3.0 MG concrete Wheeler Reservoir, 2.5 MG concrete Marshall Canyon Reservoir, 2.5 MG concrete Amherst Reservoir, 1.0 MG Mountain Springs Reservoir and 5.0 MG Plateau Reservoir as well as the Live Oak Pump Station, Amherst Pump Station and Plateau Pump Station.





SCV Water On-call Professional Services - Program Manager/Principal. This annual contract includes water system planning, operations, engineering, and capital improvement program (CIP) development and implementation. Services have included program development and implementation, implementation of program cost and schedule controls, program reporting, funding assistance, consultant/contractor management, staff augmentation, risk identification and management, engineering reviews, GIS support, environmental compliance assistance and assistance in the overall administration of projects. Design work has been completed for potable water pipelines, pump stations, wells (siting and design), tanks (siting and design) and reservoirs, water master planning and hydraulic modeling and analysis and traffic control plans have also been provided.

San Gabriel County Water District Annual On-Call Engineering - Principal. Responsible for oversight of projects where the firm serves as District Engineer. Project completed under this contract have included 8,000 gallons per minute (gpm) booster pump station, 7,500 lineal feet of 24-inch pipeline and serving as project engineer for the two large reservoir projects. As a team member of the environmental impact report (EIR), Mr. Byrum was responsible for analyzing seismic safety, catastrophic failure and resulting flooding at a downstream high school and proposed alternatives to construction. Mr. Byrum also testified before a California Senate Committee on the project in opposition to legislation that would impact the water industry regarding theoretical seismic design values versus probable seismic design criteria for reservoir construction. Construction management was provided for the 3.8 MG and 6.0 MG reservoirs for compliance with the EIR and seismic design requirements and coordinated the project with the State Division of Dam Safety.

City of Azusa Annual Contract - Project Manager. Responsible for civil engineering consultation on an as needed basis. Designed water improvements for the combination of Azusa's system with the Azusa Valley Water Company's system purchased by Azusa, along with the design of maintenance yard improvement projects for the main water utility yard and a secondary staging yard and well facility improvements. Completed new water facility standard drawings and standard bidding documents with new general provisions and participated as design engineer in a design-build project involving the installation of two 3,500 gpm wells, over a mile of 24-inch pipeline and connections to a canal and a reservoir.



C. SHEM HAWES, PE | PRINCIPAL, SENIOR ENGINEER

Contract Role: *Water Quality &
Supply Task Leader*

Professional Registration:

*Professional Civil Engineer
California No. 69578*

Education: *B.S., Civil and
Environmental Engineering,
University of Utah, 2002*

Professional Affiliations:

*American Council of
Engineering Companies
Orange County Water Assoc.
Southern California Water
Utilities Assoc.*

Select Relevant Experience

SCV Water On-call Professional Services – Project Manager/Task Leader. Responsible for more than 100 projects under this on-call, as needed type contract since 2007. Projects included engineering reviews, GIS support, potable water pipeline design, pump station design, well siting and design, tank siting and design, reservoir design and water master planning and hydraulic modeling and analysis. Construction management and traffic control plans were also provided on projects as needed.

City of Azusa Annual Contract - Project Manager. Responsible for civil engineering consultation on an as-needed basis. Projects have included design of water improvements for the combination of the Azusa's system with the Azusa Valley Water Company's system purchased by Azusa, along with the design of maintenance yard improvement projects for the main water utility

yard and a secondary staging yard and well facility improvements. Other projects include new water facility standard drawings and standard bidding documents with new general provisions and participated as design engineer in a design-build project involving the installation of two 3,500 gpm wells with more than a mile of 24-inch pipeline and connections to a canal and a reservoir.

Elsinore Valley Municipal Water District Engineering Manager Services - Project Manager. Responsible for specialized engineering expertise to supplement staff and provide engineering management services since 2015. Supplemental staff were present in Elsinore Valley Municipal Water District's office on a routine basis to assist the Engineering Department with organization, management, work tasks and meetings with staff, outside agencies and developers. Engineering support was provided for large design projects and in a collaborative fashion to assist with organization, distribution, and management of design projects and development of request for proposals for consultant distribution. Projects





included Lakeland Village construction management services and Lee Lake Recycled Pipeline Analysis.

La Puente Valley County Water District Engineering On-call - Project Manager. Responsible for planning and design services of more than 25 projects under an on-call, as-needed type contract. Services included program development and implementation, implementation of program costs, schedule controls, and reporting, funding assistance, consultant/contractor management, staff augmentation, risk identification and management, environmental compliance development and assistance, and assistance with the overall administration of projects. Projects also included hydraulic analysis/modeling, permit assistance and planning, design and construction support for pipelines, meter installations, recycled water needs assessment, and water master plans.

City of Newport Beach Public Works On-call - Project Manager. Responsible for this annual, on-call type contract since 2013. Services have included formalized preliminary design reports to support the partial implementation of the 2007 Sewer Master Plan on five wastewater lift stations, site layout and system upgrade drawings to facilitate ultimate design and construction of five sewer lift stations, development of new sewer pipeline plans, and implementation of street reconstruction for Irvine Avenue and Cliff Drive.

City of Fullerton Public Works On-call - Project Manager. Responsible for planning and design services since 2013. Project have included the design and construction assistance for the Harbor Alley sewer replacement and street reconstruction project, Fire Station No. 5 Drainage Study and Santa Fee Sewer Improvements.

City of Garden Grove On-call Services - Project Manager. Responsible for design, construction management and observation services since 2011. Project have included water and sewer pipelines and lift stations.

Well No. 8 PFAS Ion Exchange (IX) Treatment Plant, California Domestic Water Company - Project Manager. Under a design-build contract, completed a utility and data research of the site and hydraulic assessment. Design plans are being developed for three IX vessel pairs in lead-lag configuration to allow for treatment of PFAS. It utilizes beaded resin media with high selectivity for PFAS and it requires no regenerate chemicals or brine solutions. Design also included the IX vessels anchor bolt plan and structural pad plan.



DAVID SONG, PE | PRINCIPAL, SENIOR PROJECT MGR.

Contract Role: *Water Dist. &
Storage Task Leader*

Professional Registration:

*Professional Civil Engineer
California No. 76613*

Education: *B.S., Civil*

*Engineering, University of
California, Los Angeles, 2004*

Professional Affiliations:

*American Council of
Engineering Companies
Southern California Water
Utilities Assoc.*

Select Relevant Experience

SCV Water On-call Professional Services - Project Engineer. Responsible for more than 85 projects under this on-call type contact. Projects included engineering reviews, GIS support, potable water pipelines, pump stations, wells (siting and design), tanks (siting and design) and reservoirs as well as water master planning and hydraulic modeling and analysis. Construction management and traffic control plans were also provided on projects as needed.

City of La Verne Annual On-Call Engineering - Project Manager. This annual contract provides engineering services for infrastructure projects including water and sewer master plans, water system improvements, sewer system improvements, street

reconstruction projects and miscellaneous engineering. Projects include the design of reservoirs, pump stations, rehabilitation of existing wells, treatment to remove volatile organic compounds, numerous street and alley reconstruction projects, a 1.5-mile new roadway access into the hillside including all infrastructure, bridge widening, bike and horse trails, miles of pipelines, and building renovations. This on-call also included coordinating all La Verne efforts with Caltrans for the construction of the 30 freeway extensions through La Verne. This included providing extensive plan checking of the freeway plans as well as all subdivision work that impacted La Verne's utilities.

San Gabriel County Water District Annual On-Call Engineering - Project Manager. Responsible for oversight of projects where the firm serves as District Engineer. Project completed under this contract have included 8,000 gpm booster pump station, 7,500 lineal feet of 24-inch pipeline and two large reservoir projects. Construction management was also provided for the 3.8 MG and 6.0 MG reservoirs for compliance with the EIR and seismic design requirements and coordinated the project with the State Division of Dam Safety.





Valley County Water District Annual On-Call Engineering - Project Manager.

Project types have included grading and drainage improvements, planning-checking assistance, blending water study, water master plan/updates, UWMP update, water/hydraulic modeling, environmental assistance, pipeline design (8- to 12-inches) and meters projects (27), pump stations (3), reservoirs (6), wells (6) and treatment. To date, more than 85 projects have been completed.

Well No. 35 Building, Facilities and Equipment, Liberty Utilities - Project Engineer. Responsible for design and construction management/observation services for the new Well No. 35 at Apple Valley Ranchos Water Company's (now Liberty Utilities). Well No. 35 replaced the existing on-site well due to declining pumping capacity as the source of supply for the system is completely provided by groundwater production. The new well was sized to deliver approximately 2,000 to 2,500 gpm of flow. The production well pumps directly into the distribution system. As a result, the production well will have to overcome the static lift associated with local groundwater conditions to the elevation of the well discharge head, drawdown, headlosses associated with piping, fittings, valves, and the resulting pressure of the distribution system at the connection point. Disinfection of well discharge was provided by the on-site generation system (MIOX).

Reservoir No. 2 Pump Station and Transmission Pipeline, Valencia Heights Water Company - Project Engineer. Responsible for replacement of the two closed-couple horizontal pumps with three vertical turbine pumps and the existing corrugated metal structure (supported with wood timbers) building with a new masonry building. The site is relatively small and there is limited access to the building and reservoir. Pump station upgrades required replacement with limited downtime of the station and reservoir. The original pumps individually drew suction from the adjacent reservoir. The new system will allow for suction from either the reservoir or the transmission main leading into the reservoir.

Phase 1, 2, 3, 4 & 5 Water Improvement Projects, Valley County Water District - Project Engineer/Manager. Projects included design and construction administration for numerous CIP water main replacement projects. Designed approximately 16,500 linear feet of 8-inch and 12-inch ductile iron pipeline replacement including service connections, fire hydrants and street improvements over 5 phases.



GREG RIPPERGER, PE | ASSOCIATE, PROJECT MANAGER

Contract Role: *Hydraulic/
Hydrologic Engineering &
Construction Management
Task Leader*

Professional Registration:
*Professional Civil Engineer
California No. 79499*

Education: *B.S., Civil
Engineering, Oklahoma State
University, 2008*

Professional Affiliations:
*American Council of
Engineering Companies
American Water Works Assoc.
Southern California Water
Utilities Assoc.*

Select Relevant Experience

SCV Water On-call Professional Services - Project Engineer. Responsible for more than 25 projects under this contact. Projects have included engineering reviews, GIS support, potable water pipeline, pump station, well (siting and design), tank (siting and design), and reservoir designs as well as water master planning and hydraulic modeling and analysis. Construction management and traffic control plans were also provided on projects as needed.

City of La Verne Annual On-Call Engineering - Project Engineer. This annual contract provides engineering services for infrastructure projects including water and sewer master plans, water system improvements, sewer system improvements, street reconstruction projects and miscellaneous engineering. Projects include the design of reservoirs, pump stations, rehabilitation of existing wells, treatment to remove volatile organic compounds, numerous street and alley reconstruction projects, a 1.5-mile new

roadway access into the hillside including all infrastructure, bridge widening, bike and horse trails, miles of pipelines, and building renovations. This on-call also included coordinating all La Verne efforts with Caltrans for the construction of the 30 freeway extensions through La Verne. This included providing extensive plan checking of the freeway plans as well as all subdivision work that impacted La Verne's utilities.

City of Monrovia On-Call Engineering Services - Project Manager. Provided on-call, as-needed engineering and surveying services. Projects have included electrical system improvements, permit assistance, master planning, site design, water and sewer replacement and design, design of reservoirs and wells and construction management. In addition to overseeing the design and construction management of the Station Square Transit Village associated with the MTAS Gold Line extension, Mr. Ripperger prepared the 2015 Water





Master Plan Update and assisted Monrovia with a five-year, \$50 million project to overhaul their water, sewer and street infrastructure.

Elsinore Valley Municipal Water District Engineering Manager Services - Project Engineer. Responsible for specialized engineering expertise to supplement staff and provide engineering management services from 2015 to 2016. Supplemental staff were present in Elsinore Valley Municipal Water District's office on a routine basis to assist the Engineering Department with organization, management, work tasks and meetings with staff, outside agencies and developers. Engineering support was provided for large design projects and in a collaborative fashion to assist with organization, distribution and management of design projects and development of request for proposals for consultant distribution. Projects included Lakeland Village construction management services and Lee Lake Recycled Pipeline Analysis.

City of La Verne Water Master Plan and Water Quality Assessment - Project Engineer. Responsible for developing the policy and direction for urban development and implemented conservation measures. Completed a study to verify the results of the prior Lead Corrosion Study (prepared by another firm) and Nitrification Monitoring and Control Plan to determine additional operational adjustments and system improvements to be made to minimize the occurrence of nitrification and corrosion. Also included an analysis of the system to determine sensitivities to nitrification and ultimately solutions to minimize loss of disinfectant and nitrification. Developed the water system model, summarized the operational and administrative CIP projects, prepared concepts to conceptualize CIP project and descriptions for the need and benefits of each project summarized.

Sunny Slope Water Company UWMP - Project Manager. Prepared this plan in compliance with the UWMP Act to satisfy all statutory and regulatory requirements established by the Department of Water Resource. The report fulfilled a variety of planning, informational and legal requirement and served as a primary source for integrated water and land use planning at the district, city and county levels per compliance with State Bill (SB) 610 and SB 221 related to water assessment and procurement of water supplies prior to construction of new development.



**OCTAVIO SOLORZA, QSD/P, CPESC | PRINCIPAL, SENIOR
PROJECT MANAGER**

Contract Role: *Site Design &
Water Resources Task Leader*

Professional Registration:
*Certified Professional in Erosion
and Sediment Control, No.
6958*

*Qualified Stormwater Pollution
Prevention Plan Developer/
Practitioner, No. 23025*

Education: *B.S., Civil
Engineering, California State
Polytechnic University
Pomona, 1986*

Select Relevant Experience

West Garden Grove Supplemental Transmission Main - Designer. Completed design and full construction management of approximately 24,000 linear feet of 16-inch pipeline within street right-of-way of Garden Grove, Stanton and Caltrans. The project also included installation of approximately 5,000 feet of 4-inch to 10-inch distribution pipeline replacement, approximately 3,000 feet of 15-inch to 24-inch vitrified clay pipe sewer replacement, jack and bore under existing railroad crossings, span an existing flood channel, service connections, water meters, fire hydrants, street improvements and complete traffic control design.

Water Main Replacements, City of Azusa - Designer. Designed the installation of two 3,500 gpm wells, over a mile of

24-inch transmission pipeline and connections to a canal and a reservoir. Project included new roll apart building enclosures, chlorine facilities, 16-inch discharge piping and appurtenances, 12-inch flush to waste system, 480-volt motor controls and SCADA, site security features and site improvements.

Reclaimed Water Pump Station, Forest Lawn Mortuary - Project Manager. Responsible for the design and installation of new mechanical pumping equipment and piping to draw water from an existing reclaimed water reservoir to a new reclaimed water reservoir. Project included improvements to the electrical service required to supply power to the new pumps, lighting, and power outlets and circuits for miscellaneous equipment. Telemetry was used to provide communication between the pump station and new tanks.

Catala and Princess Pressure Stations, now SCV Water - Civil/Site Design. This project included design and construction management to replace existing hydro-pneumatic stations with new pumps equipped with variable frequency drives to provide domestic supply to two of sub-zones. The Catala station included a block wall building and the Princess station



included a self-supported metal roof structure both were equipped with associated electrical and SCADA equipment. Oversight was also provided for cost estimation of materials, equipment and labor to prepare bid documents. After bidding, reviews included submittals, request for information (RFIs) and construction activities.

Oakglade Reservoir, City of Monrovia - Civil/Site Design. This project involved the design of a new 1.5 MG reservoir with a diameter of 100 feet and approximately 30 feet in height. This was a partially buried, circular, pre-stressed concrete reservoir that involved shoring and deep excavation with an underground water pipeline extending from the new reservoirs to the distribution system and an underground storm drain pipeline from the new reservoirs to the catch basin. This project also included demolition of the existing reservoir to replace it with a reservoir that maximized the buildable area. The project also included the preparation of a California Environmental Quality Act (CEQA) report, which was designed to provide the public and other government agencies with an analysis of the potential consequences associated with the implementation of this project.

Charter Oak Reservoir No. 4 Tank Design and Seismic Retrofit, City of Covina - Stormwater Compliance. Responsible for the new 3.0 MG, concrete Charter Oak Tank No. 4; seismic and performance improvements to the existing 3.0 MG, concrete Charter Oak Tank No. 1; and roof replacement to the 1.45 MG partially buried Cypress Reservoir. Permits were required from Covina and the Department of Public Health and included Standard Urban Stormwater Mitigation Plan and National Pollutant Discharge Elimination System. Charter Oak Tank No. 4 is a circular prestressed concrete tank with a low-profile concrete roof.

Well No. 35 Building, Facilities and Equipment, Liberty Utilities - Construction Manager. Responsible for construction management/observation services for the new Well No. 35. The new well (approximately 2,000 to 2,500 gpm of flow) replaced the existing on-site well due to declining pumping capacity as the source of supply for the system is completely provided by groundwater production. The production well had to overcome the static lift associated with local groundwater conditions to the elevation of the well discharge head, drawdown, headlosses associated with piping, fittings, valves, and the resulting pressure of the distribution system at the connection point. Disinfection of well discharge was provided by the on-site generation system (MIOX).



SKY YOUNGER, PE | PRINCIPAL ELECTRICAL ENGINEER

Contract Role: *Electrical / I&C*

Task Leader

Professional Registration:

Professional Electrical Engineer

California No. 16176

Education: *B.S., Electrical*

Engineering, University of

Nebraska, Lincoln, 1978

Select Relevant Experience

Electrical System Improvements, City of Monrovia -

Electrical Engineer. Completed design and permitting for a complete replacement of the electrical system that provides power for Monrovia's major source of water. Work includes specifying, designing and installing a new 3000A service entrance section, 1000 KW standby generator, soft-start motor controllers and I&C for numerous wells and booster pumps totaling more than 2300

horsepower.

Amethyst Road Water Turnout Pipeline, City of Victorville - Electrical Engineer.

Designed approximately 5,425 linear feet of 24-inch pipeline in existing right-of-way along Amethyst Road from the Mojave Water Agency (MWA) Turnout 5 on Mesa Road to the pumping station at Sycamore Street and Amethyst Road. Project scope items included hydraulic analysis to determine the required pipe size, alignment analysis, utility coordination/relocation and project stakeholder coordination. Permit coordination included the State Water Resource Control Board, U.S. Army Corps of Engineers, State Fish and Game and County of San Bernardino. Coordinated with Southern California Edison (SCE) for a new 120/240V single phase service for new power to the flowmeter control panel.

MWA Metering Station Turnout No. 5, City of Victorville - Electrical Engineer.

Responsible for designing T5, the largest of the three turnouts and the Amethyst Road Water Pipeline. T5 is planned to import 2.9 million gallons per day (MGD) (3,248 Fiscal Year) in Phase 1 and 6.1 MGD in Phase 2 (total of 9 MGD) out of 14 MGD through this interconnection. T5 will be located within existing public right-of-way on Mesa Street between Mesa Avenue and Amethyst Road. A new magnetic flowmeter control panel will be installed adjacent to the flowmeter masonry building that includes the power and control functionality required by the new flowmeter project. Power for the flowmeter control panel will be provided from SCE new 120/240V single phase service adjacent to one of the SCE power poles on the Mesa Road. The new flowmeter control panel will be provided with an





Allen Bradley Compact Logix controller, redundant 24V power supplies, uninterruptible power supply, digital input card for sampler status and an air conditioner. The new flowmeter control panel will be integrated with MWA's existing SCADA system and will be able to communicate with Victorville's SCADA system.

Four Grade Separation Pump Station Upgrades, City of Industry - Electrical Engineer. Prepared a report summarizing inspection deficiencies found at Industry's four pump stations, explored options to address the deficiencies and made recommendations for the best alternatives. The pumps had not had major upgrades since they were built in the late 1960s and 1970s. The pumps and motors, discharge piping and valving needed to be replaced. In addition, the station controls and telemetry needed to be updated to allow remote monitoring and controls and site lighting and alarm systems need to be upgraded. Modern programmable logic control controls, state-of-the-art sensors and monitoring equipment should be provided to ensure efficient operation, provided notifications for preventive maintenance and safety of operators. Hardwired back-up controls should be added to ensure pump operation in the event of programmable logic control or transducer failure.

Lamanda Park Booster Pump Station, California American Water - Electrical Engineer. Project included the design of new replacement booster pumps, including mechanical and electrical components. A detailed design critique was provided to determine the required modifications to the existing hydraulic pressure zone pumping system to identify the most energy efficient and cost-effective project while maintaining simplified construction and operating procedures. Pump 1 was completely removed, while Pump 2 was replaced with a new 900 gpm 25 horsepower pump rated at 80 feet total dynamic head (TDH) and Pump 3 was left as is.

Well 11 Equipping, Pico Water District - Electrical Engineer. Responsible for the design of a well along with chorine equipment, generator and site improvements to Well No. 11. Due to the sensitivity of nearby residential neighborhoods and businesses, the project also included design of a soundproof rolling building to provide access to the wellhead. Also provided bidding and construction management support.



EUGENE CHRIS DUNCAN, PLS | SURVEY MANAGER

Contract Role: Survey, Legals &
Easement Task Leader

Professional Registration:

Professional Land Surveyor
California No. 7745

Education: Extension Courses,
Field Surveying, California
State University of Los Angeles

Professional Affiliations:

California Land Surveyors
Association

Select Relevant Experience

Reservoir 10A Rehabilitation, La Habra Heights County Water District - Surveyor. Responsible for the full inside and outside recoating of La Habra's Reservoir 10A, with the addition of a flex-tend to the inlet/outlet piping, update of the roof railing system, addition of a new air-gap overflow drain basin and a 'dog door' access manway. Project also included full bidding documents, with drawings, and placing the project out to bid, managing RFIs and addenda, reviewing bids and making recommendation for award. Full construction management and observation services will be provided at the appropriate time, in

addition to conducting a warranty phase inspection.

Water Main Replacement Projects, City of Brea - Survey Manager. Designed multiple water main replacement projects as identified in the seven-year CIP for Fiscal Year 2018-19 through 2024-25 in conjunction with street improvements according to the 2017 Pavement Management Plan. CIP budgets have been allocated for design, construction and construction engineering into four construction projects. Funding sources for this project are predominately from the 420 Water Fund with a portion also coming from the 220 Gas Tax Fund. Design and engineering services include utility research and notification, topographic survey, hydraulic water modeling and analysis, potholing, geotechnical review, soil corrosivity analysis fire hydrants, valves, services, pavement rehabilitation, signage, striping and bidding support services.

Workman Mill 48-inch Water Main Replacement, City of Industry - Surveyor. The project consisted of designed and construction management of approximately 3,100 linear feet of 48-inch steel pipe and traffic control plans that encroached within the jurisdictions of the City of Industry, Los Angeles County, Caltrans, and Union Pacific Railroad. The project included jack and bore under an existing railroad crossing with a 64-



inch steel casing, concrete encasement of the main within the 60 Freeway underpass, access manholes, complete traffic control design, and permit approvals from all agencies.

Lamanda Park Booster Pump Station, California American Water - Surveyor. Project included the design of new replacement booster pumps, including mechanical and electrical components. A detailed design critique was provided to determine the required modifications to the existing hydraulic pressure zone pumping system to identify the most energy efficient and cost-effective project while maintaining simplified construction and operating procedures. Pump 1 was completely removed, while Pump 2 was replaced with a new 900 gpm 25 horsepower pump rated at 80 feet TDH and Pump 3 was left as is.

Miller Reservoir, Orchard Dale Water District - Surveyor. Responsible for the design of a new steel tank reservoir. Project includes excavation, removal and installation of 14-inch steel piping, 12-inch steel piping, fittings, storm water storage units, area drain, concrete retaining walls, concrete masonry block walls, motorized wrought iron gates, asphalt concrete pavement, concrete cross gutter replacement and miscellaneous electrical work.

Rosemead Well No. 11 Equipping, Pico Water District - Surveyor. Responsible for the design of a well along with chlorine equipment, generator and site improvements to Well No. 11. Due to the sensitivity of nearby residential neighborhoods and businesses, the project also included design of a soundproof rolling building to provide access to the wellhead. Also provided bidding and construction management support.

Well No. 8 PFAS IX Treatment Plant, California Domestic Water Company - Survey Manager. Under a design-build contract, this project performed a complete utility and data research of the site and hydraulic assessment. Design plans are being developed for three IX vessel pairs in lead-lag configuration to allow for treatment of PFAS. It utilizes beaded resin media with high selectivity for PFAS and it requires no regenerate chemicals or brine solutions. Design also included the IX vessels anchor bolt plan and structural pad plan.



THOMAS C. BENSON, JR., PE, GE | LEIGHTON CONSULTING

Contract Role:

Geotechnical Task Leader

Professional Registration:

*Professional Civil Engineer
California No. 69578*

Education: M.S., Geotechnical

*Engineering, University of
California, Berkeley, 1982*

B.S., Civil Engineering,

*Michigan State University,
1981*

Professional Affiliations:

*Structural Engineers Association
of Southern CA (SEAOSC)*

2004-2006 Board Member

International Code Council

American Concrete Institute

American Society of Civil Engrs.

International Society for Soil

*Mechanics and Foundation
Engineering*

Consulting Engineers and Land

Surveyors of CA, Los Angeles

Chapter Past President

Mr. Benson brings more than 38 years of geotechnical experience on a wide range of waterworks projects in Southern California. His technical experience in Southern California has been broad to meet the challenges of the region. He has been the technical lead on numerous earthwork, shoring, dewatering, seismic, liquefaction, slope stability, tunneling, rock stabilization and soil improvement studies. In addition, he has managed engineering geology tasks such as geologic mapping, hydrogeologic studies, fault studies, scour analyses and rock stability analyses. His projects have been in widely different geotechnical environments ranging from Long Beach estuaries to Mount Wilson granitic peaks. Since much of this work has been in the urbanized Los Angeles area, he has managed numerous geo-environmental projects dealing with fuel hydrocarbons, solvents, lead, metals and other compounds in the soil and groundwater. Mr. Benson's geotechnical team (engineers and geologists) won the 1996 Outstanding Project Award from the California Geotechnical Engineers Association (CGEA), for the Dulzura Pipeline Restoration Project located in San Diego County. This remote project required rock stabilization innovations and geotechnical exploration on difficult to access, steep granitic slopes. Large boulders that could roll onto the pipeline were stabilized in-place with rock anchors.

Select Relevant Experience

La Habra Heights Reservoir, La Habra, CA - Geotechnical Engineer for geotechnical exploration and foundation report. Tank was constructed at the bottom of a canyon on transition cuts and a central fill. Reinforced concrete retaining walls were constructed to support cuts in the canyon walls. These walls were in excess of 30 feet high,





and were supported by permanently tied-back soldier piles. Earth anchor tie-backs were drilled into the bedrock. Corrosion protection for these permanent tie-backs was an important geotechnical consideration. Similar designs were used in 1992 for Tank 2 and in 2010 for Tank 9.

Gould Mesa Steel Water Tanks, City of Pasadena - Two steel water tanks were constructed upon a cut pad on a natural plateau above the Arroyo Seco, north of JPL. Some fill was placed for the perimeter roadway around the tank. A Keystone retaining wall was constructed to support this fill, and a cantilever soldier-pile retaining wall was used in an upslope cut zone. Stability was a concern for the steeply descending adjacent slope down to the Arroyo Seco.

Reclaimed Water Tank, Glendale, CA - A steel tank was constructed on a cut pad north of Scholl Canyon Landfill in the granitic rock of the San Rafael Hills. Due to the integrity of the rock, steep cuts were possible, with less steep cuts in the colluvial soils. A cost-effective exploration was conceived due to nearby exposed cuts in the granitic rock, consisting predominantly of a geophysical survey to estimate rock excavation difficulty, along with shallow test pits to test overlying colluvium.

Seismic Evaluation of Ten Existing Reservoirs, Ontario, CA - Project Manager responsible for geologic and seismic hazards review for ten existing potable water reservoirs in Upland and northern Ontario. Assisted in development of current seismic design parameters such as ground motion factors using ASCE 7-05, ACI and AWWA updated criteria, and developing site-specific response spectra to evaluate each reservoir, including low damping and long period spectra for hydrodynamic (sloshing) analyses.

Water Pipeline Replacements, La Crescenta - Geotechnical Engineer of record for 14 different pipeline projects for the Crescenta Valley Water District. Most of these projects consisted of 8-inch diameter pressurized cement mortar lined and coated steel water pipelines, installed in residential streets typically 3-feet below grade. These pipelines were installed in the cities of Glendale, Montrose and La Crescenta.



VAHÉ PETROSSIAN, PE, SE | ANB CONSULTING ENGINEERS

Contract Role: *Structural
Engineering Task Leader*

Professional Registration:

*Registered Civil Engineer
California C42780*

*Registered Structural Engineer
California S3421*

Education: *M.S., Structural
Engineering, 1979*

B.S., Civil Engineering, 1977

Mr. Petrossian has over 26 years of experience in structural engineering. His experience includes design and analysis of Concrete Reservoirs, elevated tanks, pump stations, storm drain structures, municipal buildings, highway and local pedestrian bridges, retaining structures, and other infrastructure facilities. Mr. Petrossian has extensive experience in State-of-Art Structural analysis. He is active in several Code writing committees that oversee several subcommittees that develop Codes and guidelines for Earthquake Resistant Designs.

Mr. Petrossian has designed numerous reservoirs utilizing the latest computer aided design technology, coupled with the latest industry standards and AWWA design criteria. He is experienced in the design of post tensioned and wire wrapped concrete reservoirs, as well as steel tanks. His experience also includes design and restoration of water and sewer lines and other facilities.

Select Relevant Experience

Signal Peak, Irvine Ranch Water District - Designed of two completely buried 2.6 MG reservoirs; one for reclaimed and one for domestic water.

Reservoir No. 2A, City of Pomona - Designed this 3.7 MG reservoir that included two options of wire wrapped concrete reservoir and welded steel tank.

Shopping Center II Tank, California American Water Company – Completed the structural design of a 5.2 MG tank constructed in Thousand Oaks. This concrete reservoir consists of a post-tensioned floor, wire wound walls, and conventional concrete roof and is partially buried.

Potrero II, California American Water Company - This 6.0 MG concrete reservoir has 37-foot high walls, tensioned with grouted thread bars, vertically, and wire wound and shot created, horizontally.



Reservoir No. 11, Rowland Water District - This 5.0 MG concrete reservoir is partially buried and, due to the unusual site geology and proximity of active faults, a special seismic design had to be performed.

San Simeon Reservoir, State of California - This 1.0 MG circular reservoir is completely buried near Hearst Castle. The walls have been tensioned with seven wire; conventional strands anchored at the pilasters. The roof consists of a two-way slab and is thoroughly waterproofed to carry three feet of overburden.

Lower Busch Tank Rehabilitation, LA County Waterworks District 29 – Completed the seismic retrofit of this partially buried concrete reservoir built in 1920's. The concrete reservoir was circular and reinforced with vertical and horizontal mild reinforcing steel and covered with conventional wood framed roof.

Burbank Reservoir No. 4 - Constructed in the 1950's this project involved in the testing, rebar detection, evaluation, and analysis of the two-way roof slab to carry the proposed playground over three feet of fill.

Monk Hill Chlorine and Ammonia Treatment Facility Building Pump Stations, City of Pasadena - Design included a Span-crete Roof over many chambers and interior cranes.

Monk Hill Ventura Well Pump Building Pump Stations, City of Pasadena - Design included a Concrete Slab Roof supporting three heavy suction pumps.

Monk Hill Exterior Treatment Pad Steel Vessels, City of Pasadena – Designed the housing for a multitude of steel vessels of various sizes.

C-2 Well Pump Station Building, City of Cerritos - Design included a Span-crete Roof and interior cranes.

Walker Well Pump Station Addition and La Palma Yard Chlorination Buildings, City of La Palma - Design included emergency showers, disabled bathrooms, and anti-terror security devices. The exteriors were architecturally designed with sheet metal mansards to hide the roof and equipment and blend in with the surrounding residential area.

City of Beverly Hills Pump House Buildings - Designed three pump house buildings with special consideration to the aesthetics as well as enclosure of silencer units.





JORDAN KEAR, PG, GHG | KEAR GROUNDWATER

Contract Role: Hydrogeology

Task Leader

Professional Registration:

Professional Geologist

California No. 6960

Certified Hydrogeologist

California No. 749

Education: M.S., Geological

Sciences, California State

University, Northridge, 2005

B.S., Geological Sciences,

University of California, Santa

Barbara, 1994

Mr. Kear has practiced water resources and environmental geology since 1994, he brings broad experience in California regulatory and water supply development issues that includes the design, construction, development, testing, and maintenance of water supply wells. He also has considerable experience in conducting aquifer tests to evaluate well capacity and other issues, and routinely conducts water quality analyses to assist with evaluation of source acceptability and definition of any treatment requirements. Mr. Kear has been successful in locating production wells in a variety of geologic formations including consolidated bedrock, fractured and/or cavernous formations, and unconsolidated alluvial formations.

Groundwater resource studies have involved water well locating, designing, construction monitoring (more than 100 wells), and testing (more than 100 wells). Mr. Kear has designed and implemented water quality and quantity tests for numerous water supply wells at various stages of construction, ranging from zone testing in pilot holes to down-well testing and overall evaluation of new and very old wells. His environmental experience includes soil and groundwater assessments, remediation investigations, and remediation feasibility studies. Conceptual and analytical modeling that incorporates both drinking water aquifers and sites of environmental concern is a particular strength of Mr. Kear's, and his expertise has been relied upon by counsel working in both environmental and water resource litigation.

Select Relevant Experience

Water supply well location study, Central Basin, Suburban Water Systems -

Recent data suggested that portions of the Central Basin at the water company's access points may have water of sufficient quality and quantity to warrant exploration and groundwater development. Kear Groundwater evaluated several possible locations in the target areas, and selected several locations for additional investigation. Preliminary designs of new wells at





five specific properties were prepared, with well construction recently completed to 1,500 feet at a location in La Mirada and to commence at a second in Whittier in 2013.

Irrigation Supply Well Monitoring and Evaluation, Los Angeles Country Club -

Several water wells were constructed to extract groundwater of questionable quality from older alluvial strata near Quaternary faults and oil fields. In addition to requiring treatment prior to irrigation use, water quality issues such as corrosivity, hydrogen sulfide content, and bacterial presence necessitated detailed well monitoring to closely observe well performance over time. Performed aquifer testing, groundwater sampling and specialized analyses as part of a long-term monitoring program that allowed for key managerial decisions regarding well rehabilitation and replacement.

Landscape irrigation Well Site Selection, Design, Construction Supervision, and Testing, Stone Canyon Residence, Los Angeles, California -

Using detailed geologic mapping and evaluation, Mr. Kear selected a new exploratory well site in bedrock formation. Nearby evidence suggested that poor quality water in low quantities were to be expected, but a fault that is known to be a barrier to groundwater flow separated the project site from the known data points. Drilling, geophysical data, and cuttings evaluation indicated that successful development of the groundwater supply was feasible. The well was completed, developed, and tested to produce water of excellent quality at a rate that exceeded expectations by three-fold.

Golden State Vintners Well No. 3 -

Kear Groundwater was retained to help the client formulate a plan to provide improved water quality for the CA DPH-regulated drinking water system. Nitrate and 1,2,3-trichloropropane (1,2,3-TCP) were consistently detected at or above MCLs in two of the system's water supply wells. KG evaluated the wells, the geology, and nearby hydrogeologic data to prepare a preliminary design for a new well that would meet water quality objectives. During drilling, KG confirmed that the geology matched the anticipated conditions, designed a series of aquifer zone isolation tests to confirm anticipated water quality conditions, and provided final design and construction oversight to provide a new well through construction, development and testing that produced hundreds of gpm of water with nitrate concentrations less than half of the MCL and no detectable 1,2,3-TCP.





CHRIS HAMPSON | MERIDIAN CONSULTING

Contract Role: *Environmental
Task Leader*

Certifications:

*AERMOD Air Dispersion
Modeling*

Education: *B.S., Environmental
Management and Protection,
California Polytechnic State
University, San Luis Obispo,
California*

Professional Affiliations:

*Advisory Chair—Environment,
WHEEL Committee Ventura
County Coalition of Labor,
Agriculture and Business
Board Member, Assoc. of Water
Agencies Ventura County*

Mr. Hampson has more than 12 years of experience in environmental analysis for a variety of water infrastructure and development projects. He has successfully managed and performed analysis for environmental documents in compliance with the CEQA and the National Environmental Policy Act (NEPA) for federal, state, and local government agencies and private-sector clients. He is responsible for a variety of tasks, including technical editing, report organization, project scheduling, subconsultant coordination, and client contact.

Mr. Hampson has managed the preparation of various environmental documents pursuant to CEQA, including EIRs, Mitigated Negative Declarations (MNDs), and Initial Studies (ISs). He has prepared EIRs for a variety of projects, including water infrastructure, residential, mixed-use, commercial, general, and specific projects. In addition, Mr. Hampson has prepared and managed a joint CEQA/NEPA documents in the support of federally-assisted water infrastructure projects. He also has

experience in preparing noise assessments and conducting noise analyses and modeling in relation to both long-term and short-term construction impacts.

He has managed water infrastructure projects that involved the construction of transmission pipelines, water pumps and water tanks, and related direct and indirect environmental issues. He has considerable experience coordinating between various government agencies and clients, including the US Environmental Protection Agency and the US Fish and Wildlife Service. Mr. Hampson has assisted on and prepared various water supply assessments for mixed-use projects in accordance with SB 221 (Subdivision Map Act) and SB 610 (Water Code).





Select Relevant Experience

Project Manager of the IS/MND for the **Victorville Amethyst Pipeline** project in the Victorville, California. This proposed project involved the construction of an approximately 1-mile-long recycled water pipeline to import water into the Victorville Water District as part of groundwater recharge efforts. Also managed and directed permit applications from natural resource agencies for crossing waters of the State and waters of the US.

Project manager for the **Recycled Water Program, Phase 2** projects in Santa Clarita. Prepared an MND/EA for the Recycled Water Program, Phase IIA project, which tiered from the adopted Recycled Water Master Plan EIR. The applicant proceeded with the project, which will provide approximately 0.46 mgd, of recycled water to Castaic Lake Water Agency customers. This project consisted of three phases involving the construction of a water pump, a pipeline, and a water tank for recycled water operations. The environmental documentation complied with both CEQA and NEPA, addressing the resolution of issues regarding stream flow and diversion of water from the Santa Clara River and habitat of the listed species, including the three-spined stickleback. The project included coordination with the USEPA, the US Fish and Wildlife Service, and the State Office of Historic Preservation. Additionally, managed the **Phase IID CEQA-Plus MND** for the Westridge Parkway recycled water project for the SCV Water.

Project manager for the **Deane Tank Expansion** project in Santa Clarita, California. A MND is in the process of being prepared for the project which would provide additional water storage capacity for fire protection, emergency and operational needs at the Deane Pressure Zone, which is deficient in storage by 4.22 MG, as of 2013.

Co-project manager and lead analyst for the IS/MND for the **Upland Wells** project, which evaluated a well-siting study for possible “upland” wells to increase local water supplies to Solvang in Santa Barbara County. Five upland well sites were selected for study, drilling, and testing. While the five well locations are within relatively undisturbed sites, potential biological and cultural resources would be of concern during testing and construction of each well.



CIVILTEC
engineering inc.

Civil, Water, Wastewater, Drainage, Transportation and
Electrical/Controls Engineering • Construction Management • Surveying
California • Arizona





Statement of Qualifications

As-Needed Professional Engineering Services

Prepared for
Palmdale
Water District

ENGINEERING SERVICES

December 29, 2020



Stantec Consulting Services Inc.
300 N Lake Avenue, #400, Pasadena, CA 91101

December 29, 2020

Palmdale Water District

Attention: Scott Rogers, Engineering/Grants Manager
2019 East Avenue Q
Palmdale, CA 93550

Reference: Statement of Qualifications—As-Needed Professional Engineering Services

Dear Mr. Rogers,

Balancing the demands utilities face in today's water climate is intense, whether it's accurately projecting future water demands, meeting water demands during drought conditions, over drafted groundwater basins, changing regulations, water reliability, making use of local recycled water resources, rehabilitation and replacement, or meeting water quality needs. The list of responsibilities goes on and meeting these demands in a fiscally responsible manner when revenues have recently declined is a real challenge all utilities are facing today.

With 23 offices throughout California and our Pasadena office just one hour from Palmdale, Stantec offers the depth of experience in all engineering disciplines to help you meet your vast challenges in a fiscally responsible manner. As an added value to you, we have added Amy Broughton, funding services lead to our team should you want assistance with funding. Amy and our team of over 140 funding experts have helped clients obtain over \$4B in grant and loan funding.

As shown in the following Statement of Qualifications, Stantec is well qualified and would like to be considered to provide on-call engineering services in support of your capital improvement projects. We provide on-call engineering services to clients of all sizes for projects of all complexities throughout California. Some of our more recent on-call engineering services contracts include the Orange County Water District, Metropolitan Water District, Los Angeles Department of Water and Power, Los Angeles County Department of Public Works, Sacramento Area Flood Control Agency, Eastern Municipal Water District, California Department of Water Resources, and numerous others.

Stantec has no actual, apparent, or potential conflict of interest resulting from any financial, business, or other relationship with the Palmdale Water District or property owners that may that may impact the outcome of this contract or the District's ongoing construction projects. We also have no current clients who may have a financial interest in the outcome of this contract or the District's construction projects that will follow. Stantec has no financial interest or relationship with any property owners or any construction companies that might submit a bid on the District construction contract.

As we are all aware, we are working in unprecedented times as a result of the COVID-19 pandemic. The situation is fluid. Our proposal is based on our understanding of performing these services in normal conditions. As the nature and extent of the impacts due to this outbreak cannot be fully identified or quantified at this time, we feel it would be

prudent to submit this proposal based on normal conditions, without accounting for impacts due to this outbreak, and to discuss with you once

we are able to evaluate the impacts and to work collaboratively with you on a path forward. We would be pleased to have a further discussion with you to share our respective plans and efforts to help mitigate the impact of this evolving situation on your proposed project.

Should you have any questions regarding our proposal, please contact Tama Snow at (949) 533-7736.

We acknowledge receipt of Question & Answer dated December 10, 2020.

Sincerely,

STANTEC CONSULTING SERVICES INC.



TAMA S. SNOW, PE

Senior Principal, Project Manager

(949) 533-7736 | tama.snow@stantec.com



KARI D. SHIVELY, PE

Vice President, Regional Business Leader-Water

(916) 418-8405 | kari.shively@stantec.com

Read more about Stantec's COVID-19 response, including how we are helping clients and communities navigate the global pandemic.

 [View the article](#)

Introduction

PROJECT UNDERSTANDING

The Palmdale Water District's (PWD/District) boundaries encompass approximately 187 square miles of land in northeastern Los Angeles County and currently serves a population of approximately 115,000. Domestic water is currently supplied from State Project Water and local groundwater. During non-drought years, State Project Water meets sixty percent of the District's water demands while the other 40 percent is supplied from the adjudicated groundwater basin. During drought years, groundwater pumping is increased upwards of 50-60 percent.

Today, the PWD's water system is comprised of a 35 million gallon per day (mgd) water treatment plant treating water in the Palmdale Lake surface water reservoir, Littlerock Dam and Reservoir, over 400 miles of pipelines, 21 active extraction wells, 17 booster stations, 21 storage tanks with a storage capacity of over 50 million gallons, 14 pressure reducing stations, and an 8.5-mile irrigation ditch that transports water from Littlerock Reservoir to Palmdale Lake for treatment.

Wastewater services within Palmdale Water District's service area boundaries are primarily provided by the Los Angeles County Sanitation District (LASAN) No. 20 and LASAN No. 14. In 1953, LASAN constructed the Palmdale Water Reclamation Plant (PWRP) and recycled water was utilized for agricultural irrigation. Today the PWRP has a recycled water capacity of 12 mgd and PWD has rights to 4,000 AFY for groundwater recharge and 1,325 AFY to expand the recycled water purple pipe program.

It is our understanding that under this as-needed professional engineering services contract there will

be a variety of projects to support the District's Capital Improvement Program that may include: hydraulic modeling and infrastructure sizing, demand forecasting, structural and process assessments, modifications to the Carter Water Treatment Plant to build redundancy into the treatment train, groundwater injection wells to replenish the groundwater basin and fully utilize the recycled water available through the agreement with the Los Angeles County Sanitation District No. 20, sediment removal behind Littlerock Dam to increase the reservoir capacity, installation of fire pumps to meet fire flow requirements; new storage tanks near 47th Street and East Avenue, and on Mt. Emma Road and 47th Street East; three new wells and well equipping for wells 27, 28, and 34; booster stations; as well as conversion of the irrigation canal to a pipeline from Littlerock Reservoir to Palmdale Lake to prevent water loss.

Based on the scope of services presented in the Request for Qualifications, Stantec has the ability to meet contract needs and in-house staff with the experience to be responsive and exceed the District's expectations. For added value to the District, we have added Kyle Groundwater, Inc. (KGI) to our team to provide hydrogeological services.

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WHY STANTEC

Successful projects under this contract require a team familiar with the local conditions, State Water Project, Metropolitan Water District (MWD), LA County Sanitation District, Department of Water Resources (DWR), and the Division of Drinking Water. Stantec (through acquisition of MWH) has been providing a diverse array of planning and engineering services to the MWD for over 20 consecutive years in which we have completed over 250 task orders ranging in fees from \$10,000 to \$1M. In addition, we have an extraordinary relationship with the DWR and have been providing engineering consulting services to them since 2000 and currently, have several active as-needed engineering services contracts. Stantec, through its MWH acquisition, completed Palmdale Water District's Water System Master Plan in 2016 and we are currently completing a water augmentation study for you. In addition, our subconsultant, KGI, has recently completed Well Assessment of wells 36 and 37 for you and is currently working with your team on the Well Rehabilitation and Prioritization Program.

Stantec has the in-house capabilities to provide all services on your timeline and we have added funding expert Amy Broughton to our team should you desire to explore additional funding to support your program. Amy and her team of 140 funding experts have secured over \$4B in grant and loan funding for our clients.

METHOD FOR ACCOMPLISHING THE WORK

Stantec will take into consideration your needs, your community, and your budget when preparing contract documents or design plans and specifications. Our overall approach is to provide functional and quality design documents or contract documents that minimize impacts to the public during construction, keep construction costs in check, and are easy to operate and exhibit low operational and maintenance costs.

To achieve this, we have created a multidisciplinary engineering and design delivery team focused on innovative, client-tailored designs.

Our approach to implementing and completing specific projects is proven and successful and is the same no matter the size of the project.

For each task order, our project manager will take the following steps:

- ✓ Understand the Scope of Work and the PWD's schedule.
- ✓ Select Technical Task Leader with the appropriate experience.
- ✓ Select subconsultants to help make certain the most specialized personnel are available to assist in completing the task order.
- ✓ Execute the work conforming to PWD's standards and procedures.



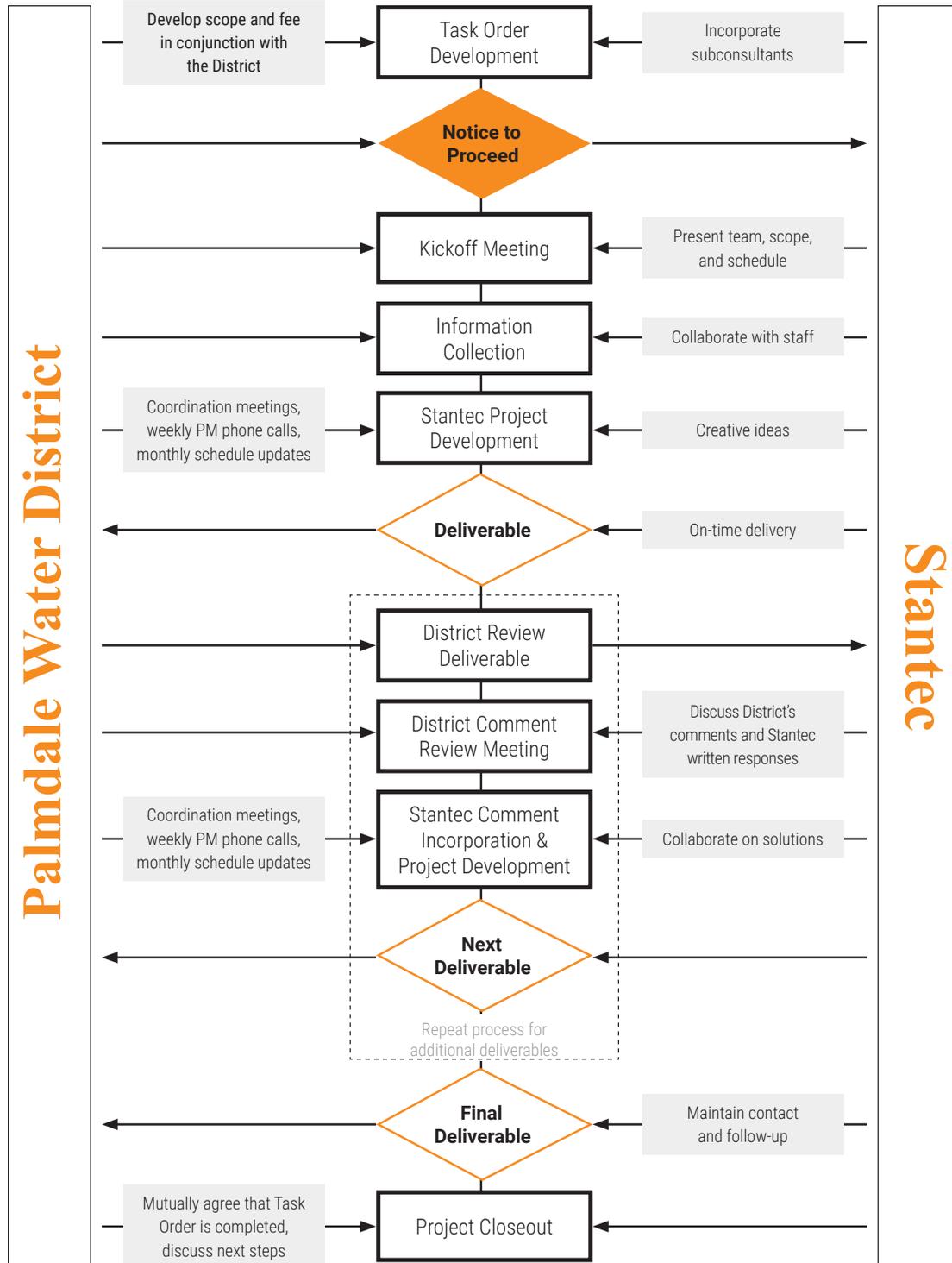
View the article

How Stantec's North American Funding Program Connects Clients with Capital Share
Our network of 140 funding specialists can help clients access the more than \$500 billion in annual federal funding they need to transform their communities.



Figure 1 below shows the anticipated key steps for a typical task order and identifies how we will bring collaboration to the District on all aspects of a typical project.

Figure 1 - Task Order Process



Stantec and District Collaboration During Project Delivery

PROJECT MANAGEMENT

Stantec will use proven management techniques and typically utilizes Civil 3D, AutoCAD and standard Microsoft Office software (Word, Project, Excel, PowerPoint) to execute our work. We cater to the needs of our clients and have access to many software packages and the staff that is well trained in using it should the District prefer other software. We are flexible to accommodate your needs. Our robust project management system is aligned with the Project Management Institute's Project Management Body of Knowledge. From early conception of a task order, this process is used to guide the project team towards project delivery excellence. To maintain lines of communication, our project manager will hold regularly scheduled project calls with the District as well as internal project calls with subconsultants and discipline leads. These calls are intended to address data needs, design questions, and coordination.

MAINTAIN A "REAL TIME" PROJECT SCHEDULE

Stantec understands the importance of timely completion of work. During the process of planning a project, the project manager will work with the District to define the timetable for project completion.

By ensuring that personnel with the appropriate experience and availability are assigned, our project manager will establish Stantec's initial capacity to comply with the District's required schedule. Our team will use Stantec's standard procedures and tools to track the project schedule and budget.

Our system allows the project manager to compare project expenditures with the percentage of work completed and facilitates our ability to effectively balance resources and identify staffing needs.

As work begins, weekly and monthly updates are generated to compare actual progress with the baseline schedule. Variances are identified that allow the project manager to adjust resources and avoid schedule delays. Progress is formally reported to the District's project manager on a monthly basis and updated with frequent communication, so all are informed.

INVOICES

Stantec will provide monthly progress reports along with all invoices summarizing the work that has been completed and the work planned for the following month.

QUALITY ASSURANCE AND QUALITY CONTROL

Stantec has developed and implemented a thorough and complete Quality Assurance and Quality Control (QA/QC) program to help make certain quality work products are consistently produced.

We have a proven procedure for establishing and maintaining the quality of our professional work products. In fact, our QA/QC protocols are integrated into our overall Integrated Management System (IMS) that requires continuous reviews during the development of the project, from the initial stages through approved construction documents. The QA/QC procedure is founded on selecting an experienced team using proven procedures consistently, following strict standards for engineering, checking to help ensure compliance, and adapting rapidly to unusual events.

A Profile of the Firm

SPECIFIC TECHNICAL CAPABILITIES OF THE FIRM(S) FOR THE PROJECT

Stantec Consulting Services Inc. (Stantec) is a professional corporation and a member of the Stantec family of companies. Stantec is a New York Corporation established in 1954.

Our local in-house staff are well qualified to provide the full suite of as-needed professional engineering services to support the PWD's Capital Improvement Program. Stantec has successfully completed these types of services, whether under our numerous as-needed contracts within the past five years or serving clients on specific projects.

We are designers, engineers, scientists, funding experts, and project managers, offering experts in condition assessment, conveyance, water treatment, well equipping, innovating together at the intersection of community, creativity, and client relationships. Balancing these priorities results in projects that advance the quality of life in the communities we serve both globally and locally within Los Angeles and Kern Counties.

We have 23 offices throughout California and our Pasadena office, comprised of 105 staff, is just a 60-minute drive from Palmdale. We offer the full suite of experiences from our national and international firm of resources of more than 22,000 employees in 350 offices. We take pride in our ability to offer our resources and expertise to create value in a timely and cost-effective manner that benefits our local projects throughout Los Angeles and Kern Counties.

To provide added value and local expertise we have added Kyle Groundwater, Inc. (KGI), a California Corporation located in Pomona founded in early 2018 by Russell Kyle in response to a demand for experienced and innovative hydrogeological solutions from Southern California clients. KGI has a reputation for approaching each project with fresh eyes and providing a superior and customized work product.

We are a fiscally responsible firm and look out for our clients' best interests. For specific task orders or projects within the Palmdale as-needed professional engineering services contract, if there is a local subconsultant that can bring added value to the project, we are open to exploring those opportunities to meet your budgetary and project needs.

We are involved in hundreds of professional organizations with staff on committees and in board positions, enabling us to be at the forefront of upcoming changes in regulations as well as guiding the decision making process.



View the article

Stantec awarded the American Water Works Association's Diversity Award in 2019.



American Water Works Association

Dedicated to the World's Most Important Resource®

B Qualifications of the Firm

PRIOR EXPERIENCE ON AS-NEEDED PROFESSIONAL SERVICES

The best measure of our success in exceeding our clients' expectations on previous and existing as-needed contracts, as well as individual projects, is best described directly by our clients. We encourage you to contact the references outlined below in **Table 1** to discuss how our experience and our commitment to deliver on-time and within budget will benefit the Palmdale Water District.

100+
number of active on-call
contracts within California

Table 1 - Reference Table

	Project Name	Contract Period	Client Contact Information
Stanitec	On-Call Agreement for Water Treatment Facilities, Conveyance, and Distribution Facilities	2000-Current	Metropolitan Water District of Southern CA Gloria Lai-Bluml (213) 217-7538 glaibluml@mwdh2o.com
	On-Call Water and Wastewater Services	2017-Current	Coachella Valley Water District (CVWD) Carrie Oliphant (670) 398-2651 coliphant@cvwd.org
	On-Call Wastewater and Environmental Engineering Services	2016-Current	Los Angeles Bureau of Engineering/ Department of Public Works Ethan Wong (310) 648-6120 ethan.wong@lacity.org
	SFPW As-Needed Mechanical Engineering Services	2016-Current	San Francisco Department of Public Works Eugene Ling (628) 271-2728 eugene.ling@sfdpw.org
	Ontario Municipal Utilities Company (OMUC) Professional Engineering On-Call Services	2020-Current	City of Ontario, Ontario Municipal Utilities Omar Gonzalez, PE, Principal Engineer (909) 395-2578 OEGonzalez@ontarioca.gov
KGI	On-Call Contract for Professional Hydrogeological Services	Current	California Water Service Clyde Arucan (310) 257-1447 carucan@calwater.com

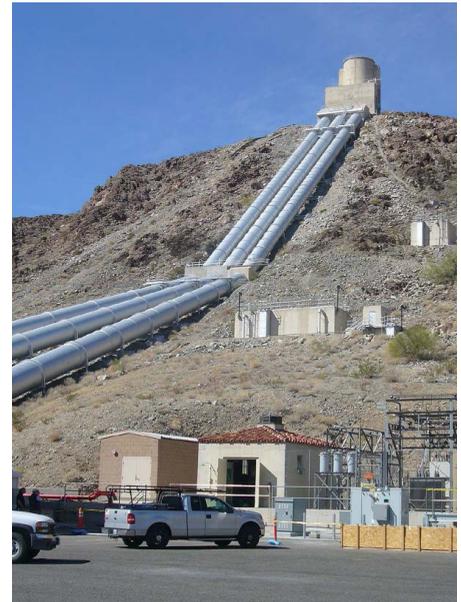
ON-CALL WATER TREATMENT FACILITIES, CONVEYANCE, AND DISTRIBUTION FACILITIES

SOUTHERN CALIFORNIA

Stantec has provided on-call services to MWDSC for nearly 20 years, delivering over 250 task orders to date ranging in fees from \$10K to \$1M and encompassing a wide range of projects and disciplines. Task orders have included conceptual, preliminary, final design, and construction-related services, as well as investigations, technical analysis, scheduling, environmental services, hydraulic analysis, value engineering, operations, regulatory support, CAD/BIM services, cost estimation, and energy master planning. Our projects have involved both new facilities and rehabilitation of existing facilities related to water treatment, transmission, pump stations, hydropower, storage, solar, dams, and large rotating equipment.

Task orders we have delivered for MWDSC include:

- Condition assessment of Colorado River Aqueduct facilities, including main pumping plants and piping.
- Seismic assessment studies of various reservoirs and treatment facilities.
- Drought relief projects to address the severe drought of 2014-2015, including multiple pump station and pressure control stations combinations under an accelerated schedule.
- Rehabilitation of hydroelectric plants, including piping and control systems.
- Regional Recycled Water Program performed the initial study to determine the feasibility and cost of installing an extensive recycled water distribution system throughout Los Angeles to deliver recycled water produced at a new/recycled water facility in Carson, California. The initial study included the review of proposed pipeline routes, which included pipes ranging in size from 24 to 84 inches.
- Completed conceptual site planning of a full-scale, 150-mgd Advanced Water Treatment (AWT) facility at LACSD's Joint Water Pollution Control Plant.
- Provided complete engineering services and is currently operating the Advanced Purification Center for MWDSC. This facility is demonstrating the proposed full-scale treatment process for regulatory approval, and includes development and implementation of the testing and monitoring plan.



Client Contact Information

Metropolitan Water District of SC

Gloria Lai-Bluml

(213) 217-7538 | glaibluml@mwdh2o.com

Relevant Team Members

Jim Borchardt, Project Manager

Tyler Hadacek, Project Engineer

Michael Adelman, Water Treatment Engineer

Zakir Hirani, Process Engineer

Kyleen Marcella, Project Engineer

Discipline leads vary dependent on scope and resource availability.

LINDLEY RESERVOIR REPLACEMENT PROJECT

ESCONDIDO, CALIFORNIA

The Lindley Reservoir Project will replace an aging, above-ground steel tank with two new 1.5-million-gallon buried prestressed concrete tanks. The project was developed by the City after it determined that the existing tank had reached the end of its lifecycle, was outside of current seismic codes, and was too high-profile for the surrounding suburban community. Utilizing California's current conservative seismic and stormwater design criteria, our team determined that prestressed concrete tanks were the most cost-effective and resilient options for the design. Additionally, by burying the tanks and landscaping the area, we were able to hide the tanks from the viewshed of the surrounding community. The selected site for the new tanks is on an unoccupied hillside comprised primarily of extremely hard granitic rock. Given its structure, the hillside site also created a potential sliding moment for the reservoir, endangering the residential homes below. To accommodate these issues, the Stantec team developed a means to dowel the reservoir foundations into the granitic rock to prevent sliding.

Client Contact Information

City of Escondido
Randy Mann, Senior Engineer
(760) 839-6290 Ext. 7031
rmann@escondido.org

Relevant Team Members

Tama Snow, Project Manager
Chris Mote, Project Engineer
Long Hoang, Electrical Lead
Lloyd Soohoo, Structural Lead
Kavoos Farahani, Electrical
Maurice Amendolagine, Geotech
Nadarajan Sankaran, I&C
David Wilcoxson, SCADA

WELL REHABILITATION PRIORITIZATION PROGRAM

PALMDALE, CALIFORNIA

PWD meets the water demand of its almost 28,000 service connections through a combination of treated surface water from the SWP, and groundwater pumped from water supply wells. PWD's 22 active groundwater production wells account for approximately 40 percent of water supplied to its customers, the majority of which is pumped directly into the distribution system following disinfection. PWD's primary goal for this project is to prepare a roadmap to maximize local water supply sources and reduce reliance on costly imported water. This planning document will guide PWD in decision-making for future well maintenance and well replacement projects designed to optimize and maintain production capacity. It will identify those wells that are in most need of rehabilitation and that offer the best chance for success at the lowest cost. It will also identify wells that should be operated to failure while planning for replacement.

KGI developed a rehabilitation and replacement prioritization plan for the PWD well field groundwater production wells. This project involved a thorough evaluation and ranking of each well as to overall condition, rehabilitation feasibility and estimated remaining well life, and development of modular technical specifications for well rehabilitation.

Client Contact Information

Palmdale Water District
Scott Rogers, PE
(661) 456-1020
srogers@palmdalewater.org

Relevant Team Members

Russell Kyle (KGI), Project
Manager/Hydrogeologist

C Proposed Personnel Experience

ORGANIZATIONAL CHART

Engaging the right people is the cornerstone of any successful project. Tama has carefully selected this team to respond to the PWD projects anticipated in this contract. The project technical leads are all engineers with experience, leadership, and dedication needed to help ensure success. Resumes for Tama, Venu Kolli, our Principal-in-Charge, and the **project technical leads** are included in the **Appendix**. Additional resumes are available by request and will be submitted to PWD based on staff selected for each task order.



SUB-CONSULTANT
 Kyle Groundwater, Inc. (KGI)

Project Manager
 Tama Snow, PE*

Principal-in-Charge
 Venu Kolli, PE, PMP*

Technical Advisors/QA/QC
 Russ Snow, PE, PMP—*Conveyance*
 Craig Wilcox, PE, SE, LEED AP—*Reservoirs*
 Jim Borchardt, PE—*Water Treatment*

PROJECT TECHNICAL LEADS

Condition Assessment/ Planning Lead	Conveyance Lead	Water Treatment Lead	Well Equipping Lead
James Cathcart, PE*	Matt Carpenter, PE*	Mike Price, PE, T5*	Conan Monson, PE*

RESOURCES

CIVIL/SMALL-DIAMETER PIPELINES Chris Mote, PE Jonny Zukowski, PE	GEOTECHNICAL Maurice Amendolagine, GE, PE GROUNDWATER WELLS Tom Regan, PG, CEG, CHG Russell Kyle, PG, CHG* (KGI)	PUMP MECHANICAL Jonny Zukowski, PE Cole Warrick, EIT
CONDITION ASSESSMENT Jigar Shah, PE— <i>Pipeline</i> Simon Lin, PhD, PE, SE— <i>Structural</i>	HYDRAULICS/INFRASTRUCTURE SIZING Jeff Dunn, PE Michael Lu, PE	RECYCLED WATER/ADVANCED TREATMENT Zakir Hirani, PE, BCEE Kyleen Marcella, EIT
COST ESTIMATING Jim Loucks, CCP, PMP	INSTRUMENTATION & CONTROLS/SCADA Adelina Pirijanyan, PE, QSD	STRUCTURAL Lloyd Soohoo, PE, SE
ELECTRICAL Kavoo Farahani, PE, PEng.	LARGE-DIAMETER PIPELINES Joseph Long, PE Joe Ortiz, PE	SURVEYING Ray Mansur, PLS
ENVIRONMENTAL Sarah Garber, CCP, PMP Michael Weber		WATER TREATMENT PROCESS Tyler Hadacek, PE Michael Adelman, PE
FUNDING Amy Broughton*		

* Resumes included

FIRM'S EXPERIENCE

Table 2 - Relevant Project Experience Table

Project Name Client Date Completed	Project Description								Scope of Services Provided												Team Member, Role			
	Water Treatment Plant/Advanced Water Treatment	Well Equipping/Treatment	Steel Tank	Concrete Tank	Well Drilling / Abandonment	Pump Station	T main (dia < 36")	T main (dia > 36")	Master Planning/Feasibility Study	Planning	Hydraulics	Environmental	Funding	Geotechnical	Surveying	Civil	Structural	Mechanical	Process	Electrical		I & C / SCADA	Cost Estimating	Construction Support Services
San Fernando Groundwater Basin Remediation Project LADWP & Kiewit 2020-Current	☑	☑	☑			☑	☑	☑		☑	☑	☑				☑	☑	☑	☑	☑	☑	☑	☑	C. Wilcox, Structural J. Cathcart, Planning Lead T. Hadacek, Process Lead M. Adelman, Process Engineer J. Borchardt, Tech Advisor/QA/QC J. Ortiz, Pipeline Engineer S. Lin, Condition Assmt D. Wilcoxson, SCADA
Lake Forest Recycled Water Pump Station Irvine Ranch Water District 2019-Current					☑	☑	☑			☑	☑				☑	☑	☑	☑	☑	☑	☑	☑	☑	J. Long, Project Manager T. Snow, Project Design Engineer R. Robison, Designer C. Warrick, Project Engineer M. Amendolagine, Geotechnical T. Regan, Hydrogeologist J. Dunn, Hydraulics M. Lu, Stormwater C. Mote, QA/QC R. Mansur, Surveying J. Cathcart, Tech Advisor
Lindley Reservoir Replacement Project City of Escondido 2018-Current				☑		☑	☑			☑	☑				☑	☑	☑	☑	☑	☑	☑	☑	☑	T. Snow, Project Manager C. Mote, Project Engineer K. Farahani, Electrical M. Amendolagine, Geotech N. Sankaran, I&C D. Wilcoxson, SCADA L. Soohoo, Structural
High Desert Water Banking Project Kern Water Bank Authority 2019-Current		☑			☑	☑	☑			☑	☑	☑			☑	☑	☑	☑	☑	☑	☑	☑	☑	J. Long, Project Manager T. Snow, Project Engineer R. Robison, Designer C. Warrick, Project Engineer
1050 Zone Pump Station Moulton Niguel Water District 2019-Current						☑	☑			☑	☑	☑			☑	☑	☑	☑	☑	☑	☑	☑	☑	J. Cathcart, Project Manager T. Snow, Project Engineer J. Long, Tech Advisor C. Warrick, Project Engineer R. Robison, Designer K. Farahani, Electrical D. Wilcoxson, SCADA J. Loucks, Cost Estimating
Peck Reservoir Replacement Project Wellhead Water Treatment City of Manhattan Beach 2017-Current		☑				☑				☑	☑				☑	☑	☑	☑	☑	☑	☑	☑	☑	C. Wilcox, Structural C. Mote, Civil Lead

NOTES: This exhibits the ability of our staff to work on multiple projects. Whether individual or as-needed projects, it's about the right people and the right skills to deliver on-time.

Project Name Client Date Completed	Project Description								Scope of Services Provided											Team Member, Role				
	Water Treatment Plant / Advanced Water Treatment	Well Equipping/Treatment	Steel Tank	Concrete Tank	Well Drilling / Abandonment	Pump Station	Tmain (dia < 36")	Tmain (dia > 36")	Master Planning/Feasibility Study	Planning	Hydraulics	Environmental	Funding	Geotechnical	Surveying	Civil	Structural	Mechanical	Process		Electrical	I & C / SCADA	Cost Estimating	Construction Support Services
Design & Operation of Demonstration Facility for Potential Regional Recycled Water Supply Program Metropolitan Water District of SoCal 2016-Current	☑								☑	☑								☑	☑	☑	☑	☑		J. Borchardt, Tech Advisor Z. Hirani, Sr. Process Engineer M. Adelman, Mechanical T. Hadacek, Project Engineer K. Marcella, Project Engineer J. Loucks, Cost Estimating
Rinconada WTP Residuals Remediation Project Valley Water (SCVWD) 2020-Current	☑			☑	☑				☑				☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	M. Price, Project Manager C. Wilcox, Tech Advisor
Mt. Rose Water Treatment Plant TMWA 2018-Current			☑							☑			☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	C. Monson, Project Manager
Lake Oswego WTP Rehabilitation	☑								☑	☑			☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	M. Price, Project Manager C. Wilcox, Structural
Master Plan Update City of Anaheim 2018-2020								☑	☑	☑														J. Cathcart, Project Manager J. Dunn, Hydraulics Lead M. Lu, Hydraulics J. Loucks, Cost Estimating
Graves Reservoir Replacement and Wellhead Treatment Project City of South Pasadena On-going		☑			☑								☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	C. Wilcox, Structural C. Mote, Project Engineer
Main Canal Rehabilitation Project Patterson Irrigation District 2018-2019					☑	☑				☑					☑	☑	☑							M. Carpenter, Project Manager/Designer
San Joaquin Pipeline San Francisco Public Utilities Commission (SFPUC) 2014-2016							☑			☑			☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	R. Snow, Tech Lead C. Wilcox, Structural
Water System Master Plan City of Palmdale 2016								☑	☑	☑		☑												Legacy MWH Project, now part of Stantec

D Additional Information

RAW RATE INFO

Stantec's multiplier and staff's raw rates are proprietary information. Final raw hourly rates for the personnel identified in the qualifications and our rate multiplier will be provided under separate cover within two weeks should we be selected for this assignment.

PROFESSIONAL SERVICES AGREEMENT

We accept the Professional Services Agreement included in this SOQ without changes.

CURRENT AND PAST LITIGATION

Stantec has not been involved in any criminal litigation nor found guilty of any criminal wrongdoing. There are no unsatisfied judgments or arbitration awards outstanding against Stantec. As a normal part of professional services industries, Stantec does have some legal proceedings, lawsuits, or claims pending. All have been reported to Stantec's insurers who are in the process of adjusting/managing them. None will have a material effect on the financial position of the company or its ability to undertake this assignment. Perhaps of greater comfort to our clients is the fact that We seek to deal with client concerns and claims promptly and fairly through our Risk Management group. As a public company, Stantec has substantial assets and maintains a high professional liability insurance limit. Stantec's claims history has resulted in relatively low insurance premiums when compared with firms of similar size and character.

CONFLICT OF INTEREST

Stantec confirms that it is not aware of any conflict of interest that may exist and be required to be reported at this time. Stantec shall endeavor not to enter into contracts with third parties or engage itself in any activities which may cause conflicts of interest. If a conflict arises impacting the services, Stantec shall provide notification, and work to resolve or mitigate it as required.

COMPLIANCE WITH LAW

Stantec confirms all work and services rendered hereunder shall be provided in accordance with all ordinances, resolutions, statutes, rules, and regulations of the District and any federal, state, or local governmental agency of competent jurisdiction.

CONTRACT AMENDMENTS

Prior to performing any out of scope work Stantec will consult with PWD to negotiate additional scope of work and fees to meet the District's project needs.



Tama Snow, PE

Project Manager

Total years of related experience: 29

Education

MS, Engineering, Cal-Poly Pomona, California | BS, Civil Engineering, University of California at Irvine | BA, Mathematics, University of California Riverside

Licenses/Certifications

Professional Engineer #56934, California

Bio

Tama has over 29 years of experience in planning and design of water and recycled water infrastructure. Passionate about what she does, she likes to see projects come to fruition from the conceptual phase through construction. For the Palmdale As-Needed project, Tama will serve as the Project Manager.

Relevant Experience

- **Lake Forest Zone B to C Pump Station | Irvine Ranch Water District | Lake Forest, CA | Project Design Engineer** Stantec was retained by the Irvine Ranch Water District to prepare construction plans and specifications for a new recycled water pump station. The project includes preparing a surge analysis, preparing plans and specifications for decommissioning an existing recycled water pump station and abandoning an existing groundwater well, as well as preparing a preliminary design report, 60 percent, 90 percent, and 100 percent plans and specifications for a new recycled water pump station. Tama is responsible for coordinating project deadlines and deliverables with design staff and subconsultants as well as monitoring project schedule.
- **Lindley Reservoir Replacement Project ESDC | Escondido, CA | Project Manager** Project included the design and construction of two 1.5-million-gallon prestressed concrete reservoirs and providing engineering services during construction. Currently in the construction phase, Tama is in charge of coordinating shop drawing review, responses to requests for clarifications and information, conflict resolution, and managing budget and schedule.
- **High Desert Water Bank Project Water Banking Project | Kern Water Bank Authority | Kern County, CA | Project Engineer** Stantec was retained by the Antelope Valley-East Kern Water Agency to design a water banking operation to enhance water supply reliability to its customers, storing unused State Water Project (SWP) water supplies for later recovery when SWP allocations are low. The scope of work for Phase 1 of the project includes developing a hydrogeological model, installation of piezometers and recovery wells, recharge monitoring, well field design, design of a turn-in and turn out structure from the SWP Canal, pipeline design, and well equipping. For phase 1, 10 and 30 percent design drawings and specifications will be completed.

Tama Snow, PE

Relevant Experience (continued)

- **1050 Zone Pump Station | Moulton Niguel Water District | Project Engineer** Stantec was retained by the Moulton Niguel Water District to prepare plans and specifications for the 1050 Zone pump station that will provide the District additional system reliability as well as provide back-up fireflow. The project includes an environmental survey, preparation of environmental documents, surveying, potholing, geotechnical, civil, mechanical, electrical, I&C, SCADA, and completing a preliminary design report and construction plans and specifications for a 500-gpm pump station and 3000-gpm fire flow as well as design of approximately one mile of 16-inch suction and discharge pipelines. To date, the environmental survey, environmental documents, as well as the 30 percent design have been completed and 60 percent design is underway.
- **Feasibility Study to Develop the Simi Valley Basin as a Potable Water Resource* | Simi Valley, CA | Project Manager** Project manager to evaluate utilizing groundwater from the Simi Valley Basin. The study presented three alternatives to develop the Simi Valley Basin as a potable water supply. Alternatives evaluated well locations, treatment plant locations, type of treatment required, distribution system requirements, brine discharge requirements, and the capital, engineering, and annual operations and maintenance costs. Assisted the District with preparing and obtaining a grant from the United States Bureau of Reclamation to cover 50 percent of the study costs.
- **Hydraulic Modeling On-Call Services* | Otay Water District | Spring Valley, CA | Project Manager** Utilizing Otay Water District's (OWD) existing hydraulic model and data from OWD's GIS and SCADA systems, responsible for conducting steady state and extended period dynamic modeling analyses of the existing and future potable water and recycled water systems, performing pressure surge analyses for pressure zones or pipelines, identifying improvements, and recommendations to remedy identified system deficiencies to meet future conditions and conducting fire flow analyses. These services were being performed under a two year on-call services contract from June 2017 through June 2019. Responsible to get fireflow requests completed within a 10 day turnaround. All deadlines were met.
- **Stockdale West Wellhead Equipping and Conveyance Facilities* | Irvine Ranch Water District | Bakersfield, CA | Project Manager** Project included the design of wellhead equipment for three deep aquifer wells and pipelines to convey up to 9000 gpm of untreated water to a turn-in into the Central Valley Canal. Preparing preliminary design report, construction drawings, and specifications. Design completed October 2015.

** denotes projects completed with other firms*



Venu Kolli, PE, PMP

Principal-in-Charge

Total years of related experience: 31

Education

MBA, Finance and Strategy, Paul Merage School of Business - University of California, Irvine |
MS, Environmental Engineering, New Jersey Institute of Technology, Newark, New Jersey |
BS, Civil Engineering, Jawaharlal Nehru Technological University, Kukatpally, Telangana

Licenses/Certifications

Professional Engineer #78197, California | Project Management Professional (PMP)®

Bio

Venu has 31 years of experience in all phases of civil and environmental engineering. He has extensive civil engineering experience on a wide variety of water, sewer, pump station design, master planning, and sewer modeling projects. His background includes design and project management responsibilities for large water and wastewater infrastructure projects and pump station projects. He has worked on more than 20 pump station and 47 pipeline design or rehabilitation projects. As a principal, he is responsible for the overall management and coordination for the project and providing technical oversight and quality management. His responsibilities will involve the side-by-side, working relationship with the design team, subconsultants, and the client.

Relevant Experience

- **Unit 8, Second Gap Connection Pipeline | Los Angeles Department of Water and Power (LADWP) | Los Angeles, CA | QC Manager** Venu provided QC services for the design of 3100 linear feet of 24-inch ductile iron pipeline to expand LADWP's recycled water service to the Dominguez Gap Facilities.
- **Palm Desert Groundwater Replenishment Project, Phase 2* | Coachella Valley Water District | Palm Desert, CA | Project Manager** Venu prepared a Preliminary Design Report identifying a proposed pipeline alignment, three replenishment pond locations, design parameters, scour analysis, protection of existing facilities, and anticipated costs to replenish 15,000 AFY of groundwater in the Whitewater River Stormwater Channel using Colorado River Water from the Mid-Valley Pipeline. He prepared design plans and specifications for the construction of three replenishment ponds within the Whitewater River Stormwater Channel between Cook Street and Fred Warning Drive, and 4,000 linear feet of pipeline.

** denotes projects completed with other firms*



James Cathcart, PE

Condition Assessment/Planning Lead

Total years of related experience: 43

Education

MS, Civil Engineering, California State University at Long Beach, California | BS, Civil Engineering, State University of New York at Buffalo

Licenses/Certifications

Professional Engineer #C31518, California | Professional Engineer #CE014350, Nevada

Bio

Jim has more than 43 years of experience specializing in water resources supply and development in California and throughout the western US. His technical experience includes program/project management and engineering specializing in planning; design; construction management of water, wastewater, and reclamation infrastructure; computer modeling; master planning; ground and surface water treatment; transmission and storage; condition assessment; and pipeline design. He also has provided expert witness services for water system planning, modeling, and design.

Relevant Experience

- **Lake Forest Zone B to C Pump Station | Irvine Ranch Water District | Lake Forest, CA | Tech Advisor** Stantec was retained by the Irvine Ranch Water District to prepare construction plans and specifications for a new recycled water pump station. The project includes preparing a surge analysis, preparing plans and specifications for decommissioning an existing recycled water pump station, and abandoning an existing groundwater well.
- **1050 Zone Pump Station | Moulton Niguel Water District | Project Manager** Stantec was retained by the Moulton Niguel Water District to prepare plans and specifications for the 1050 Zone pump station that will provide the District additional system reliability as well as provide back-up fireflow. The project includes an environmental survey, preparation of environmental documents, surveying, potholing, geotechnical, civil, mechanical, electrical, I&C, SCADA, and completing a preliminary design report and construction plans and specifications for a 500-gpm pump station and 3000-gpm fire flow as well as design of approximately one mile of 16-inch suction and discharge pipelines.
- **2018 Sewer and Water Master Plan | East Valley Water District | Highlands, CA | Project Manager** As part of the master plan updates, Stantec evaluated potential changes in EVWD's potable supply from mainly groundwater to mainly surface water over the future planning horizons. The two updated master plans address condition assessment of EVWD facilities, model update and calibration, system evaluations, and development of a comprehensive CIP.



Matt Carpenter, PE

Conveyance Lead

Total years of related experience: 21

Education

BS, Civil Engineering, California State University, Sacramento

Licenses/Certifications

Professional Engineer #66888, California

Bio

Matt has 21 years of design and construction experience on large conveyance and wet infrastructure projects. His role on the project will be as a conveyance project technical lead focusing on leading design teams and tasks. His extensive experience includes planning, design, coordination, construction support, and construction management on large-diameter transmission pipelines, pump stations, treatment facilities, reservoirs, wells, canals, and fish screen intake facilities for public agencies and irrigation districts across California. Matt is ideally suited for this project role due to his related experience as the project technical lead and lead civil engineer on the North Valley Regional Recycled Water Program Design-Build Project, which included a 32-mgd recycled water pump station and more than seven miles of 42-inch transmission pipeline. Over the years Matt has gained specific experience working with SCWA on successful projects such as the Vineyard Surface Water Treatment Plant, Excelsior Pipeline, Anatolia Groundwater Treatment Plant and Wells, and Wildhawk Groundwater Treatment Plant.

Relevant Experience

- **Main Canal Rehabilitation Project | Patterson Irrigation District | Patterson, CA | Project Technical Lead** Matt is responsible for the preliminary project planning, project design team coordination, preparation of design plans and specifications, and oversight of the overall project design. This project consists of a complete modernization of the existing Patterson Irrigation District Main Canal System, including nearly two miles of new concrete lined canals, nearly 1.5 miles of 90-inch-diameter, cement-mortar-lined-and-coated steel pipeline, two 200-cubic-feet-per-second (cfs) pump stations, and multiple lateral and customer turnout improvements off of the new main delivery system.
- **SunRidge Phase 1 Water Supply Facilities Excelsior Pipeline Project | AKT Development and Sacramento County Water Agency | Sacramento, CA | Project Engineer** Matt served as project engineer on this \$11M project consisting of approximately seven miles of a 30-inch-diameter raw water transmission pipeline. His design duties included alignment analysis and selection, project team coordination, agency coordination, utility coordination, and preparation of design plans and specifications. During construction Matt attended weekly progress meetings, performed submittal and RFI review, and led and coordinated the ESDC team.



Mike Price, PE, T5

Water Treatment Lead

Total years of related experience: 44

Education

MS, Environmental Engineering, University of Illinois | BS, Civil Engineering, University of Illinois

Licenses/Certifications

Professional Engineer #32080, California | Professional Engineer #46602, Washington | Professional Engineer #78692, Ohio | Grade 5 Water Treatment Operator #14149, California

Bio

A professional engineer and certified Grade 5 water treatment plant operator with over four decades of experience, Mike has led the design, construction, and operation of over 25 water and recycled water treatment plants in his 23-year tenure with Stantec. His projects have utilized a variety of water treatment technologies, such as conventional filtration, high-rate sedimentation, ozonation, micro-filtration, reverse osmosis, granular activated carbon filtration, ultraviolet disinfection, and many chemical feed systems. Mike has been an instrumental team member in helping workshop design ideas with clients to develop and determine the best solution forward. He has been involved in some of Stantec's largest treatment projects, with a specialty in tertiary treatment.

Relevant Experience

- **Rinconada WTP Residuals Remediation Project | Valley Water (SCVWD) | San Jose, CA | Project Manager** SCVWD staff identified a number of issues with the operation of the residuals handling system at the 80-mgd Rinconada WTP since it went online in early 2016. As a result of the plant's function and location, near-maximum solids production can be expected to occur continuously over multiple months. Under this project, Stantec updated the plant's solids generation estimates, identified deficiencies, evaluated alternatives for upgrading the system, and is now designing the recommended improvements.
- **Lake Oswego-Tigard Water Treatment Plant (LO-T WTP) Expansion | Lake Oswego-Tigard Water Partnership | Lake Oswego and Tigard, OR | Technical Advisor** Mike provided expert review for this upgrade project, doubling the Lake Oswego Water Treatment Plant's capacity from 15 to 38 mgd. Following a detailed evaluation of the existing processes and water quality requirements, Mike oversaw detailed designs for the upgraded processes, which included intermediate ozonation, biologically active carbon filtration, sludge thickening, and mechanical dewatering equipment.



Conan Monson, PE

Well Equipping Lead

Total years of related experience: 23

Education

BS, Environmental Engineering

Licenses/Certifications

Professional Engineer #75452, California | Professional Engineer #334351, Utah | Professional Engineer #42433, Arizona | Professional Engineer #56485, Arizona

Bio

Conan is a registered professional engineer with 23 years of experience in the planning, design and construction of water supply facilities, including pumping stations, groundwater wells, treatment plants, pipelines, and storage facilities. Conan has led the design, bidding, construction, and startup phases and served as the construction manager for many water supply projects. He is ideally suited for the role as Well Equipping Lead through his experience in leading the design and construction of multiple well and pump station projects for municipal water agencies working in a multidiscipline team environment. For the Zone 7 Water Agency, Conan has led the design of multiple new and retrofitted well and pump station projects.

Relevant Experience

- **Mt. Rose Water Treatment Plant | TMWA | Reno, NV | Technical Lead** Conan is the technical lead through the construction and startup of the new 4-mgd Mt. Rose WTP. This plant consists of a package treatment system with plate settlers, adsorption clarifiers, dual media filters, and UV disinfection.
- **Chain of Lakes Wells 1,2 &5 | Zone 7 Water Agency | Livermore, CA | Project Manager/Lead Design Engineer** Conan was the project manager and lead design engineer for new drinking water wells with capacities of 1,500, 2,200, and 3,400 gpm. The projects also included the design of a new central chloramination treatment system and connection to an existing 36-inch distribution main.
- **Zone 1 Well Improvements Project | Placer County Water Agency | Project Manager** Conan was the project manager and lead design engineer for the retrofit of an existing 900-gpm potable water well and a new 900-gpm potable water well with sodium hypochlorite disinfection facilities at both locations.
- **Miners Ranch WTP | South Feather Water & Power Agency | Lead Design Engineer** Conan was lead design engineer for the improvements to the MRWTP that included new raw water pumps, chemical jet mixing system, adsorptions clarifiers, dual media filters, finished water storage, sludge storage and dewatering facilities, chemical feed storage and feed facilities, and wash water return facilities. The improvements expanded full conventional treatment from 14 to 21 mgd.



Amy Broughton

Funding

Total years of related experience: 21

Education

MBA, Entrepreneurship and Finance, University of Colorado at Boulder, Leeds School of Business, Boulder, Colorado | BA, History, Colorado College, Colorado Springs, Colorado

Bio

Amy is a Principal Consultant with Stantec in its Broomfield, CO office. She is a financial and management consultant focused on supporting complex infrastructure projects and transformative business practices. Amy has developed and delivered projects across sectors, applying organizational, financial, and operational analysis to increase efficiency, manage risk, and identify the best solutions for unique client challenges. With her strong understanding of industry trends, funding and financing options, and infrastructure project delivery, Amy helps clients identify and secure funding for projects. Bringing the right knowledge to the right projects, Amy coordinates Stantec's dedicated team of more than 150 funding specialists. This community of practice was formed to help communities secure the funding they need to achieve their project goals. Spread throughout the US and Canada, this group helps develop funding strategies, pursue grants and loans, and manage project delivery.

Relevant Experience

- **Watershed Asset Management Plan and Funding Strategy (WAMP) | City of San Diego | San Diego, CA | Funding Specialist** Amy led the Financial Consulting Team that provided the City with a comprehensive roadmap for funding the updated WAMP. Her work included compiling a list of grants, loans, and other funding options available to the City, along with a strategy for updating the rate revenue and fees that are charged to the City's customers.
- **Sewer System Evaluation and Rehabilitation Program (SSERP) | Sewerage and Water Board of New Orleans (SWBNO) | New Orleans, LA | Project Principal/Funding Specialist** Sewerage and Water Board of New Orleans' (SWBNO) SSERP was developed to address the acute rehabilitation and repair needs of the City of New Orleans' sewer system. The city is striving to adapt and "Live with Water." Amy was the project principal on the team that developed the successful EPA 2019 WIFIA Letter of Interest for SSERP and continues to support the city and SWBNO with the WIFIA Application. The more than \$150M loan is expected to greatly expedite the delivery of these critical infrastructure projects and save SWBNO millions in financing costs.



RUSSELL KYLE, PG, CHG



TITLE

Principal Hydrogeologist

REGISTRATIONS/ CERTIFICATIONS

Registered Professional Geologist, California No. 7648

Certified Hydrogeologist, California No. 822

EDUCATION

MS, Environmental Hydrogeology, California State University – Los Angeles, 2006

BS, Geology, California Polytechnic University – Pomona, 1996

PROFESSIONAL AFFILIATIONS

American Water Works Association – Chair of CA/NV Water Well Technology Committee

American Water Works Association National Well Standards Committee

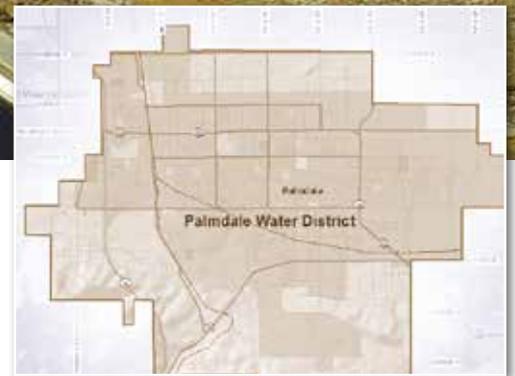
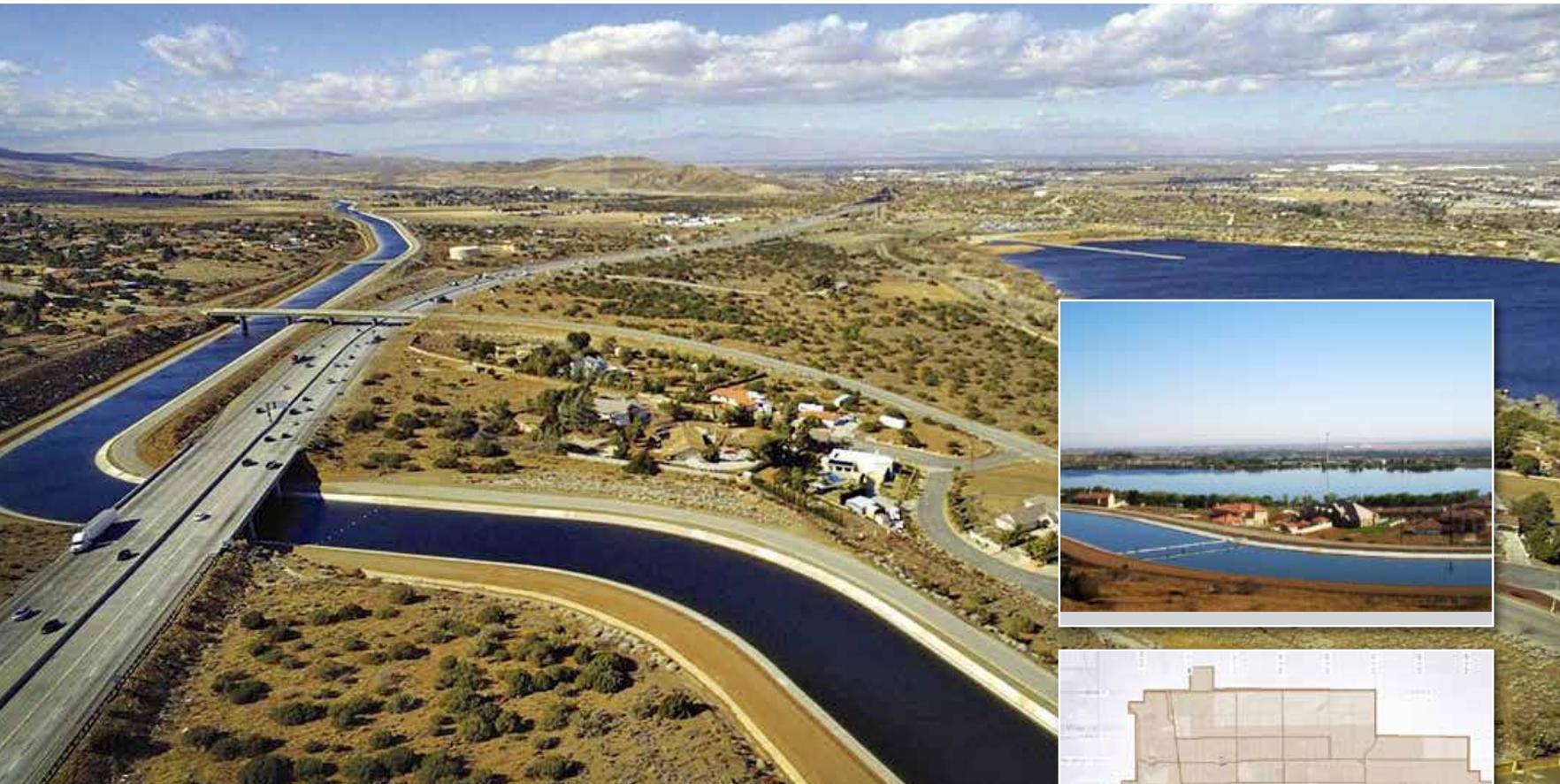
Mr. Kyle has more than 20 years of experience with a wide variety of groundwater resource related projects for public and private clients within the western United States, Mexico, and Africa, with a focus on groundwater resources development in Southern California. The scope of his technical experience includes groundwater basin evaluations, water supply studies, well siting investigations, artificial recharge feasibility evaluations, well field condition assessments, well rehabilitation, desalination feedwater supply studies, and geophysical surveys. Over the course of his career he has been responsible for installation of more than 150 water supply wells and 70 monitoring wells and exploratory borings, including management of a team of field inspectors, coordination with drilling contractors and regulatory agencies, well design, and construction management. Recent notable projects include installation of a potable water supply wells for California Water Service Company, South Montebello Irrigation District, and Long Beach Water Department, and development of water supply planning documents for the Long Beach Water Department, Palmdale Water District, California Water Service Company, and City of Riverside. He is also active within the water resources community and is currently a member and past-Chair to the AWWA CA-NV Water Well Technology Committee, and a voting member of the AWWA National Well Standards Committee. He has also been asked to lend his expertise to the newly convened TAC responsible for developing revisions to the California Department of Water Resources Well Standards.

EXPERIENCE

Collection Main and New Well Site Study – Long Beach Water Department – Long Beach, California. The Long Beach Water Department (LBWD) currently owns and operates 28 groundwater supply wells located throughout the city, in addition to a new well currently being equipped, and a second well recently constructed. LBWD's goal is to optimize local water supply sources and maintain a production well field with suitable capacity through the year 2032. Mr. Kyle served as Principal-in-Charge for a well siting study to evaluate areas favorable for installation of new production wells within the Central and West Coast Basins, and within relative proximity to the existing collection main pipeline. Sites were ranked based upon a scientific approach and weighted decision matrix. Potential well sites were further assessed by incorporating anticipated well locations and capacities into LBWD's hydraulic model to assess the ability of the existing collection main system to accommodate additional flow from the new wells, including minimum and maximum capacity scenarios.

East Los Angeles Well 62-02 – California Water Service Company - Commerce, California. Mr. Kyle provided design and construction inspection services for a new high-capacity water supply well in Commerce to augment the District's groundwater supply. Deep aquifer units in the area are impacted with various constituents of concern, including methane, ammonia, and sulfides, while the shallow aquifers are impacted by manganese and local industrial contaminants. The well has been successfully constructed within both aquifer regimes and plans are in place to temporarily backfill the lower well screen with the goal of treating groundwater from those aquifers at a future date.

Hazen



Statement of Qualifications for

As-Needed Professional Engineering Services

December 29, 2020

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- B Professional Services Agreement
- C Introductory Letters
- D Subconsultant's Rate Schedule



Hazen and Sawyer
800 W. 6th Street, Suite 400
Los Angeles, CA 90017 • 213.234.1080

December 29, 2020

Palmdale Water District
Attn: Scott Rogers
Engineering/Grants Manager
2029 East Ave Q
Palmdale, CA 93550

Re: Statement of Qualifications for As-Needed Professional Engineering Services

Dear Mr. Rogers:

Hazen and Sawyer (Hazen) is excited about this opportunity to serve the Palmdale Water District (PWD). We feel that Hazen is a good fit for PWD given our extensive water engineering experience that covers all areas of need by PWD. PWD needs a consulting engineer they can trust to serve the best long-term interests of the District and this is a perfect fit with Hazen's culture of providing top quality service since we were first established in 1951.

Hazen's size as a medium-sized firm with access to national resources is also a good fit with PWD. We are small enough to care and provide responsive service while having access to all the experts needed to solve PWD's challenges. Of particular relevance to PWD is Hazen's unique and strong experience in drinking water treatment with extensive capabilities in both surface water and groundwater treatment projects.

Another unique characteristic of Hazen is the importance we place on engaging with our client's operation and maintenance staff. We have certified water treatment plant operators on staff to work in support of our client's O&M staff to commission, troubleshoot and optimize plants. We will encourage and foster input from your O&M staff to make sure that the projects we design will be reliable and effective to achieve the District's objectives.

Proposed Project Team

Hazen has been successfully delivering engineering services to our clients under as-needed contracts for several years in Southern California. We are proposing Dave Jones, PE who is a vice president in our Los Angeles office as our contract manager. Based on the specific project needs of PWD, Dave will select a project manager best suited for your project. Many of our project managers are familiar with PWD staff including:

- Marc Solomon for Environmental Compliance Documentation
- Alex Gorzalski and Silvana Ghiu for Water Treatment
- Russ Kyle for Well Drilling and Hydrogeology
- Nicole Blute for Water Quality

Marc Solomon will also serve as Principal-in-Charge to ensure that PWD is receiving top quality and responsive services.

Hazen has read Section IV.D of the RFP related to Conflict of Interest. We certify that we comply with all requirements of this section and have no conflicts of interest related to working for the District. We also have read Section IV.E – Compliance with Law and certify that we have and will comply with this provision as well.

Professional Services Agreement

Hazen has reviewed the Professional Services Agreement included with the Request for Proposals. We have included our comments in Appendix B.

Sincerely,

A handwritten signature in blue ink that reads "Dave Jones". The signature is written in a cursive style with a long horizontal stroke at the end.

Dave Jones, PE

Vice President | Contract Manager

Section 1 & 2

Introductory Letter | Firm Qualifications



Section No. 1

Introductory Letter

In response to Section IV.C of the RFP, each of our proposed subconsultants have prepared an introductory letter. These letters are included in Appendix C of this proposal.

Hazen has included three subconsultants on our team as follows:

- Converse Consultants to provide geotechnical and hazardous materials services.
- Psomas to provide surveying and field support services for environmental compliance documentation and construction management.
- Weck Laboratories to provide analytical testing services.

Section No. 2

Firm Qualifications

Hazen is a nationally-recognized environmental engineering and consulting firm. Hazen is one of the largest firms in the U.S. providing exclusively water engineering services with 1,200 professionals and support staff in 67 offices throughout the U.S. We have three local offices in Southern California devoted to serving agencies such as Palmdale Water District.

Founded in 1951, Hazen developed a reputation for the technical quality and timeliness of our work. The integration of talent and resources with our singular focus exclusively water engineering services greatly benefits our clients by providing access to the best resources for your assignments and enables us to structure the most effective project teams for assignments for PWD. Our team will be managed out of our Los Angeles office, which consists of 16 staff members, with expert support from our other California offices.

Hazen is best suited to provide the services requested in this solicitation because of our of water treatment plant design and optimization expertise that PWD values in combination with our wide breadth of engineering capabilities that covers all the services in your RFP. Hazen is a firm with technical competence to provide full-service engineering: civil, mechanical, water treatment and conveyance systems, water supply planning services, groundwater facilities, structural, architectural, mechanical, instrumentation and electrical for treatment, conveyance and storage facilities.

SINCE 1951

HAZEN AND SAWYER HAS
FOCUSED ON TWO THINGS



*Providing Safe Drinking
Water and Controlling*



Water Pollution.



ENR TOP FIRM



1,200 Professionals

ALL WE DO IS WATER



Hazen has been a sound and reliable fixture in water engineering business in Southern California for nearly 10 years. The company is growing in California and beyond and is fully capable to provide services to PWD for many years to come.

Through our work for the Palmdale Sanitary District (County Sanitation District No. 20), we are well acquainted with the local environment and conditions of the Palmdale area including water conservation, water reuse, flood management and weather-related impacts.

Hazen has a demonstrated knowledge of water supplies from the Department of Water Resources State Water Project, having conducted water quality related projects for Metropolitan Water District of Southern California on SWP, grant funding application and implementation support for LADWP, and water supply planning studies for BAWSCA and Zone 7. We also can assist PWD with engineering support on aqueducts, intakes, dredging operations, and dams, as needed. Our team is experienced in permitting with the Division of Drinking Water, including for new permits and amendments.

Hazen staff in all of our offices are active in water professional associations including AWWA, WEF, ACWA, WaterReuse and locally-based organizations, including involvement in committees. Hazen is active in all the conferences including making technical presentations and sponsoring client events. Through our strong connection with professional organizations, we are able to bring the latest technology and keep current on new and upcoming regulations for our clients. For the project team members for your contract, the resumes included in this proposal lists the professional organizations that each team member is involved in.

Current and Past Litigation

Over the last five years there have not been any claims pending or asserted against Hazen and Sawyer by any of its clients, including claims related to errors and omissions, percent of change order values to project bid costs.

Section 3

Personnel Experience

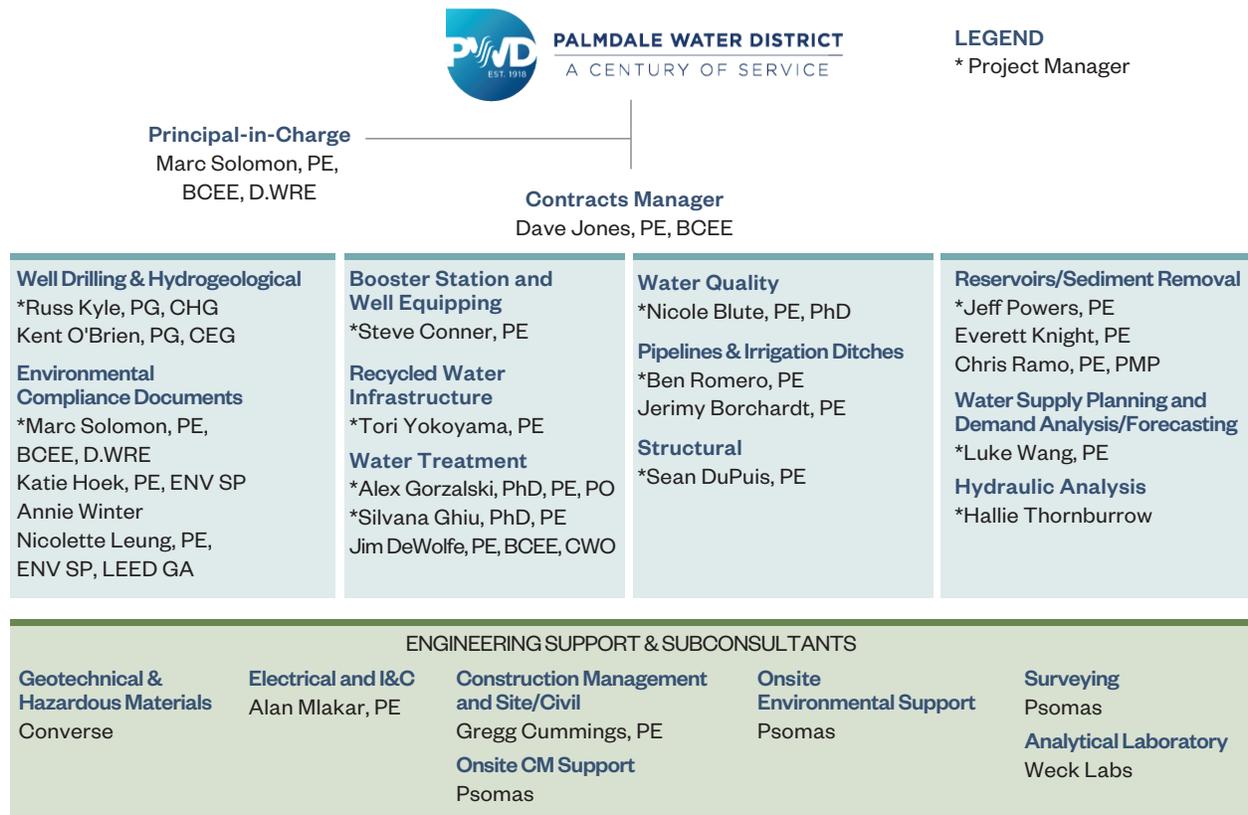


Section No. 3

Personnel Experience

Our proposed team organizational chart is presented below.

The primary point of contact to administer this as-needed contract is Dave Jones, Vice President in our LA Office. He has been managing and overseeing water engineering contracts and projects in Southern California for nearly 20 years. Dave will be responsible for making sure that the specific project managers assigned to task orders under this contract exceed the expectations of the District. As Principal-in-Charge, Marc Solomon provides an independent executive level contact to PWD to make sure that Hazen is delivering top quality and responsive engineering services.



LEGEND
* Project Manager

Staff Role	Qualifications
 Marc Solomon, PE, BCEE, D.WRE <i>Principal in Charge / Environmental Compliance Documents</i>	Mr. Solomon's broad project experience has exposed him to all phases of project planning, environmental documentation, permitting, design, construction management, and operational reliability. Marc's diverse educational background and experience has allowed him to be involved in a wide range of projects encompassing water, environment, transportation, buildings, and energy markets. This unique and diverse experience enhances his project management abilities and his ability to work effectively with project teams and externally with elected officials, engineers, operators, contractors, and the general public.

Staff Role	Qualifications
 <p>Dave Jones, PE, BCEE <i>Contracts Manager</i></p>	<p>Mr. Jones serves as Hazen and Sawyer's Los Angeles Office Operations Manager. He has over 35 years of experience in recycled water, stormwater, wastewater and drinking water projects throughout the State of California. An accomplished project manager, he provides technical and management capabilities to work in collaborative settings involving complex projects and community interests. He has a wide variety of experience in regulatory agency compliance and community stakeholder collaboration. He has managed a wide variety of projects from initial planning, through design, construction and operation. Dave has managed as-needed engineering services contracts in Southern California for the past 20 years. He has successfully demonstrated the ability to oversee multiple project managers delivering various task orders for Hazen's water clients.</p>
 <p>Russ Kyle, PG, CHG <i>Well Drilling & Hydrogeological</i></p>	<p>Mr. Kyle has 23 years of experience with a wide variety of groundwater resource related projects for public clients within the western United States with a focus on groundwater resources development in Southern California. The scope of his technical experience includes groundwater basin evaluations, water supply studies, well siting investigations, artificial recharge feasibility evaluations, well field condition assessments, and well rehabilitation. He has been responsible for siting and installation of more than 150 water supply wells and 70 monitoring wells and exploratory borings, including management of field inspectors, coordination with drilling contractors and regulatory agencies, permitting, well design, and construction management.</p> <p>Mr. Kyle is currently working on three projects for Palmdale Water District, including a well rehabilitation and redevelopment prioritization planning document, a well site assessment and preliminary design study, and assessment, repair, and redevelopment of Well 7A.</p>
 <p>Ben Romero, PE <i>Pipelines & Irrigation Ditches</i></p>	<p>Mr. Romero serves as Hazen's Conveyance Practice Lead for the West Region. He has over 24 years of water resources engineering experience. He has spent the last 19 years specializing in water and wastewater conveyance design and construction throughout the state of California. He has managed a wide variety of projects from initial planning, through design, and construction. His specific qualifications include: water transmission and distribution pipeline design, pipeline routing studies, cost estimates, hydraulic modeling, pressure pipe condition assessments, pipeline point repair and rehabilitation, pump station design, project management, design management, construction management, and construction inspection. He is also experienced in the use of many different hydraulic and hydrologic modeling programs such as H2ONET, MOUSE, SAM, NETWK, PROSIM, CVGSM, and SANJASM.</p>
 <p>Alex Gorzalski, PhD, PE, PO <i>Water Treatment</i></p>	<p>Mr. Gorzalski is experienced in process engineering and utility operations. His water treatment experience includes managing the operations and maintenance of a 120-mgd water treatment plant. He has experience in water treatment process design, including design of groundwater treatment plants, greenfield surface WTPs, and expansion of large surface WTPs. As a certified water treatment plant operator he engages in hands-on optimization activities client operations staff, including conducting filter surveillance and optimization of residuals dewatering processes. Mr. Gorzalski co-leads Hazen's emergency preparedness working group and has worked on nearly two dozen risk assessment and emergency response projects.</p>
 <p>Silvana Ghiu, PhD, PE <i>Water Treatment</i></p>	<p>Dr. Ghiu has extensive experience in water treatment plant design covering all aspects of project development including feasibility studies, pilot testing, detailed design, design review, manufacturing, cost estimation, and startup and commissioning. Silvana's expertise also includes groundwater water quality assessment and treatment as well as evaluation of disinfection stability in distribution water systems. She has completed the design for over 20 treatment plants with an emphasis on groundwater treatment.</p>

Staff Role	Qualifications
 <p>Nicole Blute, PE, PhD <i>Water Quality</i></p>	<p>Dr. Blute serves as Hazen and Sawyer’s Drinking Water Practice Lead for the West Region. She has over 20 years of experience in drinking water treatment and aquatic chemistry. She specializes in drinking water treatment and system planning particularly for impaired groundwater. She is a leader in chromium-6 treatment, having led over a decade of technology testing forming the basis for the Best Available Technologies set by California. Dr. Blute develops and is the project manager on a wide variety of water projects, notably facility planning, groundwater treatment projects, distribution system water quality projects, technology testing for emerging inorganic and organic constituents, and disinfection strategy evaluations. Dr. Blute has experience in regulatory agency compliance and funding applications for municipalities. She has also been the Program Director on complex projects from planning through design.</p>
 <p>Luke Wang, PE <i>Water Supply Planning and Demand Analysis/ Forecasting</i></p>	<p>Mr. Wang specializes in water resources planning and operations and has extensive experience in data management, analytics, and decision support. His experience includes reservoir operations, source water allocation planning, demand projection, and infrastructure capacity planning. He is a skilled data scientist and has designed models for system optimization and water supply / quality forecasting. He is a specialist in data visualization and communication as he has developed analytical dashboards for several applications in the water industry.</p>
 <p>Jeff Powers <i>Reservoirs Sediment Removal</i></p>	<p>Mr. Powers is a technical project lead with over 300 dam design/rehabilitation projects to his credit along with over 80 dam breach analyses. Mr. Powers specializes in high hazard dam design and renovation, river and floodplain hydraulic analysis, storm drainage system design, culvert and bridge analysis, and levee rehabilitation. In conjunction with his dam design project experience, Mr. Powers has significant expertise modeling dam failures and floodplains utilizing both 1D and 2D models, analyzing existing and proposed culverts, and modeling bridges.</p>
<p>P S O M A S Psomas <i>Onsite CM Support/ Environmental Support/ Surveying</i></p>	<p>Psomas is dedicated to balancing the natural and built environment, Psomas is ranked one of the top consulting engineering firms in the United States by Engineering News Record (ENR) magazine. They serve public and private clients in the site development, transportation, water, and energy markets with the following core services offered: environmental services, civil engineering, land surveying, including three-dimensional (3D) laser scanning, and construction management.</p>
 <p>Converse Consultants <i>Geotechnical & Hazardous Materials</i></p>	<p>In 1946, Professor Frederick J. Converse established Converse Consultants (Converse) to provide the construction industry with geotechnical engineering and geological services. Converse is an employee-owned corporation, with 9 offices and more than 150 employees throughout the California and the United States. Their professional and technical staff includes in-house geotechnical engineers, engineering geologists, environmental scientists, deputy inspectors, laboratory and field technicians, drafting/CAD specialists, and other specialized support personnel. Our laboratories are certified by the Division of the State Architect (DSA), California Department of Transportation (Caltrans), US Army Corps of Engineers, American Association of State Highway and Transportation Officials (AASHTO), and the Cement and Concrete Reference Laboratory (CCRL). A registered civil engineer supervises each lab to ensure all of our equipment is calibrated regularly, and quality control is available 24/7. Whatever the challenge, Converse can meet all your geotechnical and materials testing needs.</p>
 <p>Weck Labs Analytical Laboratory</p>	<p>Weck Laboratories, Inc. was established in 1964 in the City of Industry, California, as a Consulting Firm and Contract Laboratory dedicated to solve industrial problems, including production and environmental aspects. Through the years, the Company has grown in facility, equipment, personnel and experience, becoming a full service environmental testing laboratory. The services directly available are analysis of drinking water, wastewater, hazardous waste, groundwater, soil, sediment, tissue and air, sampling services and consultation with chemists and environmental professionals.</p>

1014-008

Section 4

Project References



Section No. 4

Project References

The list of projects below demonstrates the diverse skills and capabilities that Hazen offers PWD. While these projects are listed under specific areas of expertise, most of them include a variety of engineering disciplines needed for successful delivery. We have selected five of these projects to highlight below that cover a wide breadth of engineering capabilities that Hazen offers.

Relevant Project Experience	Relevant Project Experience
Well Drilling and Hydrogeological	Water Treatment
La Brea Groundwater Supply Treatment, Beverly Hills, CA	La Brea Groundwater Supply Treatment, Beverly Hills, CA
Well 274 Replacement Project, Modesto, CA	Tertiary Filter Condition Assessment, Irvine Ranch Water District, Irvine, CA
Well C-8 Design and Equipping, Banning, CA	Marston WTP, Denver Water, CO
Booster Stations and Well Equipping	North Water Treatment Plant, Gilbert, AZ
La Brea Groundwater Supply, Beverly Hills, CA	Regional WTP, Tampa Bay Water, FL
Eastside Water Treatment, Chino, CA	Croton Water Treatment Plant, New York City Department of Environmental Protection, NY
Glenoaks Pump No. 1 Replacement Project, Glendale Water & Power, CA	Chromium 6 Compliance Study and Wellhead Treatment Systems Design, Indio Water Authority, AZ
Glorietta Park Pump Station Pumping Unit No. 2 Replacement, Glendale Water & Power, CA	Environmental Compliance Documentation
Pipelines	Chromium 6 Removal Project, Coachella Water Authority, CA
La Brea Groundwater Supply Pipeline, Beverly Hills, CA	Chromium 6 Removal Project, Coachella Valley Water District, CA
Tracy Hills Raw Water Supply Pump Station and Pipeline, Byron Bethany Irrigation District, CA	Union Sanitary District Wastewater Treatment Plant, Union City, CA
Planning Services for Task 2 – 1st Aqueduct Bifurcation Structures, San Diego County Water Authority, CA	Hollenbeck Park Lake Rehabilitation and Stormwater Project - LA Sanitation, CA
Engineering Treatment and Conveyance 2017-2019, Metropolitan Water District of Southern California, CA	Climate Vulnerability Study, Sanitation District No. 20, CA
Section 53 and 99 Improvements Design and Engineering Services During Construction, Massachusetts Water Resources Authority, Various Locations, MA	Water Supply Planning and Demand Analysis/Forecasting
Reservoirs/Sediment Removal	Development of Water Demand Models and Forecasts for Urban Water Management San Diego County Water Authority, CA
Whitewater Siphons Erosion Control Structure, Metropolitan Water District of Southern California, CA	Water Demand Study 2050, East Bay Municipal Utilities District, CA
Inundation Maps and Supporting Technical Studies, Glendale Water and Power, CA	Water Supply Reliability Model Development and Analysis Services, Bay Area Water Supply & Conservation Agency Regional, CA
West Area Water Quality Control Facility Outfall Improvements, Atlanta, GA	Construction Management
CAT 211 -Gilboa Dam and Schoharie Reservoir Improvements, Schoharie County, NY	Advanced Water Purification Facility and Product Water Pump Station, Monterey One Water, CA
Maintenance Dredging at the Hoffer WTP, Fayetteville, NC	West Napa Pump Station, Napa Sanitation District, CA
	Tracy Hills Raw Water Supply Pump Station and Pipeline, Byron Bethany Irrigation District, CA



La Brea Groundwater Pipeline, Wells and Treatment
City of Beverly Hills, CA

The City is expanding its local water supply and infrastructure to provide resiliency, reliability and a high level of customer service. This project is a critical step that aligns with the City’s Water Enterprise Plan and La Brea Subarea Preliminary Design Report (PDR). The City is moving forward with a project to expand their local water supply by developing groundwater in the La Brea Subarea of the Central Groundwater Basin. Transmission pipelines, expansion of the Foothill Water Treatment Plant, and new groundwater wells are all being designed and constructed.

The scope of the project includes design of conveyance facilities for approximately 4-miles, which includes rehabilitation of the existing 18” RCP in La Cienega Boulevard, and a new pipeline from La Cienega Boulevard and Olympic Avenue to the Foothill WTP. The pipeline traverses through City of Los Angeles and City of Beverly Hills right-of-way.

Specialty disciplines include hydrogeology, electrical, instrumentation and control, structural, architectural, HVAC, surge analysis, hazardous materials testing, permitting, geotechnical, survey, CCTV, potholing, traffic control, and cost estimating.

Project Relevance

- 20,000 LF raw water pipeline
- Feasibility Study
- Preliminary Design Report
- Final Design
- Construction Support

Project Dates

2019 - Ongoing
 (In Construction)

Project Cost

\$1.8M

Reference

Vince Damasse
 Water Resources Manager
 (310) 285-2491
 vdamasse@beverlyhills.org



Trenching through a residential neighborhood in Beverly Hills.



Sliplining fusible C900 PVC across the intersection of La Cienega Blvd and Olympic Blvd in Los Angeles

West WTP Preliminary Design

Columbia Power & Water Systems, TN

Hazen and Sawyer is partnering with Columbia Power & Water Services (CPWS) in Columbia, TN to complete the preliminary design and, ultimately, the final design of a new 12-mgd “greenfield” water treatment plant. Over the past several years, Hazen has helped CPWS complete a Master Plan to address the significant growth in the middle Tennessee region while improving reliability, redundancy, and resiliency of the water treatment system. The new plant will supplement the existing 20-mgd water treatment plant.

Hazen recently completed a year-long pilot to test conventional pretreatment and membrane filtration. Based on this pilot and the previous master planning, the new plant will consist of conventional rapid mix, flocculation, and sedimentation with plate settler, membrane filtration, and GAC post-filter contactors. Part of this work includes the permitting of the new raw water withdrawal (Aquatic Resource Alteration Permit – ARAP) for the proposed West WTP.

Hazen will also be completing design of miscellaneous improvements at the existing water treatment plant as well as a new Information Management System for CPWS. Hazen is also coordinating with other consultants within the CPWS Long-Term Water Supply Program on modifications to the existing raw water intake pump station, a new intake and raw water pump station on the Duck River, raw water transmission mains connecting the intakes to the existing and new WTPs, and finished water transmission mains connecting the West WTP to the existing distribution system. Overall, the program is estimated to cost approximately \$225M with approximately \$70M dedicated to the new West WTP. The West WTP will have an initial capacity of 12 mgd, expandable to 16 mgd.

Project Relevance

- Design of surface water treatment plant with similar treatment processes to PWD’s Leslie O. Carter WTP.
- Study and design of water pumping station and transmission pipelines

Project Dates

2020 - 2021

Project Cost

\$225M

Reference

Jonathan Hardin, PE
Vice President of Water
Operations
Jonathan.Hardin@cpws.com



San Diego County Water Authority Planning Services for Aqueduct Flow Control Facilities

San Diego County Water Authority, San Diego, CA

The San Diego County Water Authority (Water Authority) is the regional wholesale water supplier for 24 member agencies. The Water Authority owns and operates approximately 310 miles of buried, large-diameter water conveyance pipelines with many critical flow control facilities (FCF) located along these conveyance pipelines that are used for water transmission. The Water Authority's Water Resources Department which is responsible for planning projects for the Water Authority's capital improvement program (CIP) identified the need for a planning study of the 11 bifurcation FCFs of the Water Authority's First Aqueduct with the objectives of identifying improvements required to make the Water Authority's water operations and maintenance operations safer, more efficient, and more flexible.

Hazen team members completed an extensive alternatives evaluation that included several pipeline isolation alternatives for replacing the 11 existing bifurcations structures as well as identifying additional site improvements including security, treatment, and communications. The pipeline isolation alternatives evaluation included construction cost estimates for each alternative, and a shutdown cost and life-cycle cost evaluation for each alternative to better understand the total cost of implementing each alternative.

In addition, the Water Authority identified the need for a planning study at the SD 5ABC Flow Control Facility (FCF) to address hydraulic system concerns. Hazen team members completed an alternatives evaluation that included several viable alternatives for replacing the SD 5ABC FCF and completed a hydraulic analyses based on the various flow demand deliveries.

The Hazen team collaborated closely with the Water Authority with in-person site visits for evaluation of existing bifurcation sites, workshops and virtual meetings to discuss the Water Authority's operations, and pipeline isolation facility features. Several intermediate milestones were incorporated into the planning study to ensure Water Authority buy-in and develop criteria and weighting during the alternative's evaluation.

Project Relevance

- Alternatives Analysis
- Planning Level Conceptual Design of New Facilities and Transmission Pipelines
- Multiple Stakeholder Coordination
- Environmental and Permitting Evaluation
- Cost Estimates

Project Dates

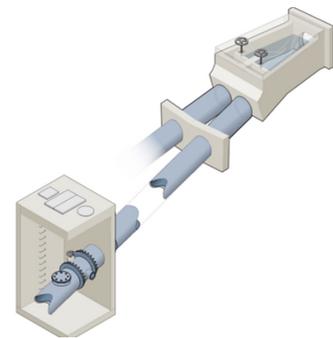
2019 - 2020

Project Cost

\$365,400

Reference

Sami Sweis, P.E
Project Manager
ssweis@sdowa.com
(858) 522-6765



Development of Water Demand Models and Forecasts San Diego County Water Authority, CA

The San Diego County Water Authority (Water Authority) is a regional wholesale water supplier to 24 member retail agencies, which include the City of San Diego and Pendleton Military Reservation. Through its member retail agencies, the Water Authority provides water to more than 3 million urban, suburban and rural customers, who reside across an expansive area of both coastal and inland climate zones. For long-term planning purposes, the Water Authority must forecast water needs to support decisions concerning capital expenditures, implementation of water conservation programs and changes to the structure and level of its water prices.

Hazen staff have created and periodically updated predictive models of water demands in the Water Authority region for single-family, multifamily, nonresidential and agricultural customer classes. Most recently, Hazen staff have directed the development of projection models and long range forecasts of water demands out to 2050 in support of the Water Authority's 2015 Urban Water Management Plan.

This project included the following major components:

- Utility survey of member agencies to collect historical water use and retail pricing data
- Compilation of historical and projected socioeconomic and land use data from the San Diego Association of Governments
- Estimation and calibration of models for single-family, multifamily, nonresidential and agricultural sectors, using advanced statistical analysis techniques, controlling for economic, land use, and demographic differences, as well for the effects of water supply shortage restrictions
- Development of weather response relationships at the member agency level and corresponding weather indices for identifying single and multi-year weather scenarios
- Preparation of Water Authority, member agency and sectoral forecasts on annual and monthly time steps, embodied in a relational database

Project Relevance

- Alternatives Analysis
- Hydraulics Analysis
- Planning Level Conceptual Design of New Facilities and Transmission Pipelines
- Multiple Stakeholder Coordination
- Environmental and Permitting Evaluation
- Cost Estimates

Project Dates

2014-2016

Project Cost

\$459,160

Reference

Tim Bombardier
Prin. Water Resources
Specialist
(858) 522-6757
tbombardier@sdcwa.org



Hazen developed the current set of Water Authority water demand models and the demand forecast utilized by the 2015 Urban Water Management Plan. The proposed Project Director, Dr. Jack Kiefer, managed the development of these and previous models and forecasts for the Water Authority.

P.O. Hoffer Water Treatment Facility Reliability Improvements and Expansion - Intake Structure Dredging

Public Works Commission of the City of Fayetteville, NC

The P.O. Hoffer Water Treatment Facility (WTF), operated by the Public Works Commission of the City of Fayetteville (PWC), provides drinking water and fire flow protection to the City, Fort Bragg military base, and surrounding areas. Originally constructed in 1967 with a capacity of 8 million gallons per day (MGD), the P.O. Hoffer WTF has subsequently been expanded in 8-MGD increments to a current day capacity of 32-MGD to accommodate system demand growth.

Aging plant infrastructure needs have necessitated upgrades to the existing water treatment processes to ensure a sustainable delivery of treated water to the PWC customers. Furthermore, PWC has proactively prepared for additional capacity needs to support plans to develop the utility's service base as a regional water purveyor in the growing Cumberland County area. As PWC's partner, Hazen has provided engineering design and construction services to assist in addressing these reliability and expansion needs.

As part of the phased improvements, Hazen directed dredging activities that were used to support replacement of two 54-inch wedge-wire screens at the raw water intake. Additional dredging was completed upstream in the river to mitigate excessive sediment deposition rates at the intake. Hydraulic dredging techniques were utilized to complete this work. Spoil materials were conveyed to a "bermed" area allowing the sediment to naturally dewater before hauling off site for disposal at a local landfill. Dredged materials were first tested for contaminants to confirm the acceptable disposal option.

In addition, Eight new 2-mgd gravity filters with accompanying filter piping gallery were designed to allow the total plant capacity to increase by 16 mgd. Filters boxes include anthracite and sand filter media, support gravel, Wheeler bottom underdrains, wash troughs, and surface sweeps. The filter piping gallery will connect to the existing gallery with a matching terrazzo. Filter control kiosks, one for each set of four filters are designated for the mezzanine area and have the capability of controlling filter operations (including backwash) for all new filters.



Project Relevance

- Sediment removal
- Water treatment plant improvements - process and structural

Project Date

2020

Project Cost

Construction Cost: \$17.4M (includes 1A and 1B projects).

Phase 1A design = \$845,000
 Phase 1A construction (CA/CO) = \$980,000
 Phase 1B design = \$300,000
 Phase 1B construction (CA/CO) = \$374,000

Reference

Chris Smith
 Water Resource Treatment
 Manager
 (910) 223-4708
chris.smith@faypwc.com

Section 5

Raw Rate Schedule and Firm Multiplier



Section No. 5**Raw Rate Schedule and Firm Multiplier**

The table below presents Hazen's raw rate schedule for the proposed project team members. These rates will apply until July 1, 2021. At that time, Hazen adjusts salaries for our staff. Our firm multiplier is 3.20.

Subconsultant rates have been included in Appendix D.

Staff	Raw Rate
Marc Solomon	\$116.87
Dave Jones	\$111.68
Kent O'Brien	\$62.50
Katie Hoek	\$65.04
Annie Winter	\$45.00
Nicolette Leung	\$52.40
Steve Conner	\$84.81
Tori Yokoyama	\$81.06
Alex Gorzalski	\$58.56
Silvana Ghiu	\$77.16
Jim DeWolfe	\$88.51
Nicole Blute	\$106.06
Ben Romero	\$100.87
Jerimy Borchardt	\$77.12
Sean DuPuis	\$59.13
Jeff Powers	\$81.78
Everett Knight	\$82.64
Chris Ramo	\$65.87
Luke Wang	\$62.88
Hallie Thornburrow	\$50.48
Alan Mlakar	\$62.88
Gregg Cummings	\$98.75

Appendix A

Resumes





Marc S. Solomon, PE, BCEE, D.WRE

Principal in Charge | Environmental Compliance Documents

Mr. Solomon has over 38 years of experience in the planning, design and O&M consulting. His broad project experience has exposed him to all phases of project planning, design, system modeling, system controls, construction management and operational reliability.

Mr. Solomon's diverse educational background and experience has allowed him to be involved in a wide range of projects encompassing water, transportation, environment, buildings, and energy markets. This unique and diverse experience enhances his project management abilities, as he is able to work effectively with engineers, operators and the general public. Projects in which Mr. Solomon participated include:

Union Sanitary District, Wastewater Treatment Plant, Union City, CA. CEQA Plus Program-level Mitigated Negative Declaration

This project included a Program-level Initial Study/Mitigated Negative Declaration for a \$350M wastewater treatment plant upgrade. Because of the potential for Federal funding, a CEQA Plus document was prepared. As part of the work, a project-specific document was prepared for the first phase of the overall program.

Seeley Water District, Wastewater Treatment Plant, Seeley, CA. CEQA Plus Mitigated Negative Declaration

The project included an Initial Study and Mitigated Negative Declaration to upgrade an existing wastewater treatment plant. The project is expected to receive Federal funding so a CEQA Plus document was prepared.

City of Banning, Water Well, Banning, CA. CEQA Plus Mitigated Negative Declaration

The project includes an Initial Study and Mitigated Negative Declaration for a new drinking water well in the City of Banning.

City of Santa Rosa, Rehabilitation of Lift Stations, Santa Rosa, CA. CEQA Categorically Exemption

As a result of the 2017 wildfires, two of the City's lift stations were badly damaged. FEMA funding was secured to rehabilitate the lift stations. Hazen provided CEQA consultation and preparation of the Notice of Determination.

Education

BS, Civil Engineering, Duke University, North Carolina

MS, Public Health, Tulane University, Louisiana

Certification/License

Professional Engineer

Water Treatment Plant Operator

Water Distribution System Operator

Diplomat, Water Resource Engineer

Board Certified Environmental Engineer

Value Engineering Certification

8-Hour OSHA Training

Areas of Expertise

- Managing complex water, wastewater, and recycled water projects
- Design of mechanical and electrical systems
- Permit Consulting
- O&M consulting
- Workshop Facilitation using Multi-Complex Decision Analysis

Professional Activities

AWWA, WEF, CWEA, ASCE, AAEE, Adjunct Teacher Santa Rosa JC

Publications

Contributing Author, "WEF MOP8, Design of Municipal Wastewater Treatment Plants, Centrifuge Dewatering"

Contributing Author, "WEF MOP11, Operation of Municipal Wastewater Treatment Plants"

"Soil Filter Beds: The West Coast Experience, WEF"

Co-author, Bringing Recycled Water to Town – The City of Santa Rosa's Urban Reuse Project"

Co-author, "Video and Sonar Inspection Guides Coronado Transbay Force Main Rehabilitation"

Co-author, "Recycled Water-The Chile Experience"

San Diego County Water Authority Aqueduct Flow Control, San Diego, CA. CEQA Plus Document

The project includes improvements to San Diego County Water Authority aqueduct flow control facilities. Some of the facilities are located near sensitive receptors and the entire project is within a habitat conservation plan area. Hazen is developing the initial analysis to determine the appropriate level of CEQA. Following the concept phase, Hazen will prepare the CEQA document.

Chromium 6 Removal Project, Coachella Valley Water District, Palm Desert, CA

This \$250MM project included a CEQA Plus Environmental Impact Report to address the new treatment systems for the removal of Chromium 6 from the potable water system. Marc also led the AB52 Consultation process with 12 Native American Tribes. Additionally, Marc led the permitting effort with over 20 agencies.

Chromium 6 Removal Project, Coachella Water Authority, Coachella, CA

The project included an Initial Study/Mitigated Negative Declaration, AB52 Consultation, and permitting for the new treatment systems for the removal of Chromium 6 from the potable water system.

Flood Protection, Regional Water Reuse Facility, Santa Rosa, CA

Mr. Solomon was project manager for the initial CEQA effort, AB 52 Consultation and permitting for a flood protection wall, berm and gate project at the Regional Water Reuse Facility.

Disinfection System, Regional Water Reuse Facility, Santa Rosa, CA

Mr. Solomon was project manager for the initial CEQA effort, AB 52 Consultation and permitting for a new UV Disinfection system at the Regional Water Reuse Facility.

Kitty Hawk Recycled Water Transmission Main, Livermore, CA

The project included an Initial Study and Mitigated Negative Declaration for a new 24-inch diameter recycled water transmission main from the Water Reclamation Facility crossing CA State Highway I-580 to the north portion of the City.

West College Utility Facility, Santa Rosa, CA

The project included an Initial Study and Mitigated Negative Declaration for a new \$30MM City operations and maintenance facility including new emergency operations center.

Geysers Recharge Project, Santa Rosa, CA

The project included an Environmental Impact Report for a new \$350MM recycled water system including 40-miles of 42-inch diameter pressure pipe and 4 pump stations.



Dave Jones, PE, BCEE

Contracts Manager

Mr. Jones has over 35 years of experience in wastewater, recycled water, stormwater, and drinking water projects. He is also well-versed in regulatory agency and permit compliance as well as project management and direction from the initial planning and design phases through to the construction and operation phases.

Education

MBA, University of Southern California

MS, Civil/Environmental Engineering, Stanford University

BS, Civil Engineering, Northeastern University

Certification/License

Professional Engineer

Board Certified Environmental Engineer (BCEE)

Areas of Expertise

- Project management
- Project delivery
- Drinking water
- Wastewater
- Water recycling
- Stormwater quality management

Professional Activities

California Association of Sanitation Agencies

Orange County Water Association

Water Environment Federation

WaterReuse Foundation

West Basin MWD – OnCall Engineering Services Contract

Contract Manager. Mr. Jones oversees all of Hazen’s projects on the On-Call Contract providing review and approvals of deliverables, quality assurance/quality control (QA/QC) and contract management. As part of this contract, Dave has performed as Project Director for a Recycled Water Residuals Disposal Study and Project Manager for the condition assessment and design of repairs and rehabilitation of the Barrier Water Pump Station and Equalization Basin project.

Water Replenishment District of Southern California - OnCall Engineering Services Contract

Contract Manager. Mr. Jones oversees all of Hazen’s projects on the On-Call Contract providing review and approvals of deliverables, quality assurance/quality control (QA/QC) and contract management. As part of this contract, Dave has performed as Project Director for the following task orders:

- Design of a new Ferric Chloride Storage and Feed System at the LVL AWTF
- Consolidation Evaluation of the Sativa LA County Water District
- CEQA documentation for the Maywood Mutual Water Company No. 3
- Condition Assessment of the Robert W. Goldsworthy Desalter

Carson Regional Water Recycling Facility Phase II Expansion, West Basin Municipal Water District, Carson, CA

Project Manager and Primary Point of Contact, prior to joining Hazen, with the District and LADWP (the funding agency) for the preliminary engineering design, water quality analysis, and pilot testing for the 12-mgd biological nitrification expansion to the Carson Regional facility. This project was a cornerstone of the City of Los Angeles’ Recycled Water Master Plan to achieve the Mayor’s 2020 recycled water goals. The \$50 million project involves advanced treatment to remove ammonia nitrogen for industrial cooling towers and also micro-filtration for feed water to reverse osmosis units for industrial boiler feed water.

Hyperion Water Reclamation Plant, City of Los Angeles, CA

Project Manager for the Hyperion Water Reclamation Plant Wastewater Modeling Project to develop a calibrated process model for the Hyperion Water Reclamation Plant (WRP). Tasks included thorough historical plant data evaluations, plant as-built review, plant wide mass balance development, process model development and calibration, and staff training. The process model developed is a powerful tool that provides insight to current and future operation of the Hyperion plant. This process model will be used to assist Hyperion staff with what-if analyses, evaluating improvement to support the Operation Next Water Supply Program.

Biological and Advanced Treatment at Joint Water Pollution Control Plant, Los Angeles County Sanitation Districts, CA

Principal-in-Charge for the technical analysis and preliminary design of wastewater treatment upgrades for the 150-mgd Regional Recycled Water Program, a partnership between Los Angeles County Sanitation Districts and the Metropolitan Water District to increase local water supplies. One of the largest pure oxygen plants in the world, the Joint Water Pollution Control Plant will require nutrient removal and advanced water pretreatment prior to groundwater recharge or direct potable reuse.

City of San Bernardino Municipal Water Department Water Reclamation Plant (WRP) Facilities Assessment and Master Plan

Project Manager. Conducted an asset inventory and condition assessment of facilities, equipment and other assets for the City's 60-year-old, 33-mgd WRP. Work involved review of all WRP data including as-built drawings and computerized maintenance management system (CMMS) and preparation of a desktop inventory. The inventory was verified by field visits throughout the WRP including assessment of the condition of the assets. A risk-based condition assessment was prepared including determination of remaining useful life estimated costs for rehabilitation and replacement for input into the capital improvement program for the WRP. Based on the condition assessment, a master plan was prepared to identify near-term (within 5 years) and longer-term (greater than 5 years) recommended improvements for both capital and operation & maintenance projects. The final deliverable included interactive asset management dashboards linked to the City's intranet.

Wastewater Program Management and Coordination, Domestic Water Reclamation Plant, City of Hollister, CA

Managed and coordinated the design, construction, environmental compliance, permitting, and financing activities for a \$105 million program to expand and upgrade the City's wastewater system to convert it from an oxidation pond to a zero-discharge water reclamation system. The specific program management activities included: coordination and oversight of seven consulting contracts totaling more than \$8 million involving the planning, design, and financing of the various program elements; quality control/quality assurance of work products by other firms for all program elements; overall program cost estimating and cost/schedule control; planning and facilitation of permit acquisition; coordination of financing team with engineering including the preparation of the preliminary official statement to obtain bond financing; agronomic analysis supporting the effluent disposal facilities planning; and coordination and integration with the regional water and wastewater master plan prepared by others.

WRP Headworks Design, Coachella Valley Water District, CA

Project Manager for the preliminary engineering and detailed design of two headworks facilities to serve the District's WRP 4 and WRP 7 with a total construction value of \$30 million. The initial design capacity is 20 mgd each (peak hourly flow) designed to be easily expandable to 40 mgd. Treatment facilities include perforated plate screens followed by dry-pit submersible pumps and a vortex grit chamber. Work includes pre-selection of key equipment to achieve the District's goal of similar quality equipment at both WRPs. The scope also included CEQA compliance, detailed design, and design engineering services during construction.



Russ Kyle, PG, CHG

Well Drilling & Hydrogeology

Mr. Kyle has 20 years of experience with a wide variety of groundwater resource related projects for public and private clients, with a focus on groundwater resources development in Southern California.

Education

MS Geological Sciences, California State University - Los Angeles

BS Geology, California State Polytechnic University - Pomona

Certification/License

Registered Professional Geologist

Certified Hydrogeologist

Areas of Expertise

- Groundwater Resource Development
- Groundwater Planning
- Well Design and Construction
- Well Rehabilitation
- Well Field Condition Assessments
- Permitting
- Regulatory Compliance

Professional Activities

AWWA CA-NV Water Well Technology Committee, Chair

AWWA National Well Standards Committee, Voting Member

The scope of his technical experience includes groundwater basin evaluations, water supply studies, well siting investigations, artificial recharge feasibility evaluations, well field condition assessments, well rehabilitation, desalination feedwater supply studies, and geophysical surveys. Over the course of his career he has been responsible for installation of more than 145 water supply wells and 70 monitoring wells and exploratory borings, including management of a team of field inspectors, coordination with drilling contractors and regulatory agencies, well design, and construction management. Recent notable projects include installation of a potable water supply wells for California Water Service Company, Golden State Water Company, and Long Beach Water Department, and development of well rehabilitation, replacement, prioritization plans for the Cities of Riverside and Long Beach Water Department.

Geohydrologic and Engineering Design Services for the City of Banning Well C-8, Banning, CA

Well Design. Well C-8 is going to be a new well for increased supply for the City of Banning. Services include well siting study, planning and design for both the well drilling and equipping, and construction services. (Design: 2018-2019)

Installation of Replacement Well to Improve Water Quality Using In-Well Blending for Small Disadvantaged Community, Modesto, CA

Well Design. Designing a replacement well for the City of Modesto on behalf of the City of Grayson. The existing Well 274 is one of two wells that are the only source of municipal water for the City of Grayson's approximately one thousand residents. The existing Well 274 is shallow and extracts groundwater from the upper portion of the aquifer system degraded by nitrate at concentrations exceeding the MCL. The intent of this project is to design and install a well with two screen sections to extract and blend contaminated and uncontaminated water to meet MCL requirements. The Project also includes consideration of space and utility upgrades for a future treatment system and / or storage tank. To this end, the concept-level design considers a future Reverse Osmosis (RO) treatment plant or application of emerging technology for the biological treatment of nitrate. (Design: 2017)

Preliminary Design for City of Banning Well C-7, City of Banning, CA

Mr. Kyle prepared a site assessment and preliminary design for proposed well C-7 to be located at in the north-eastern portion of the City's service area at the future home of a planned industrial business park. Mr. Kyle provided an assessment of the proposed well site, including anticipated well capacity and groundwater quality, preliminary design, construction logistics, and identification of construction constraints and required permits.

Wells W and Z, Indio Water Authority, Indio, CA

Mr. Kyle an evaluation of Wells W and Z with the goal of assessing the feasibility of reducing hexavalent chromium concentrations below the California MCL through well modification rather than application of expensive water quality treatment. The work involved time-series, variable-flow, and depth-specific water quality and flow profile testing. Results suggested that well modification may result in a positive outcome which led to follow-on verification testing through use of inflatable pneumatic packers. This testing also indicated that favorable results could be achieved but further work was placed on hold due to revocation of the MCL.

Wells 3B and U, Indio Water Authority, Indio, CA

Mr. Kyle was tasked with evaluating Wells 3B and U and preparing a recommended course of action and associated work plan to rehabilitate and redevelop the wells. Additionally, a plan for evaluating depth-specific water quality was prepared as it is the desire of IWA to evaluate the wells as to feasibility of improving water quality by well modification should the hexavalent chromium MCL be reinstated.

Design and Construction of High Capacity Well No. 1, City of Bellflower, CA

Mr. Kyle was technical lead providing professional hydrogeologic services during installation of a new municipal supply well for the City, the purpose of which was to replace several active wells identified for retirement by the Department of Drinking Water. The project included well siting, preliminary and final design, bidding, construction management, and inspection services during construction. The well was successfully completed with a recommended pumping rate of 3,500 gpm, with an associated specific capacity of 110 gpm/ft.

Regional Recharge and Recovery Project (R-Cubed), Mojave Water Agency, Hesperia, CA

The Mojave Water Agency was formed to manage ground water resources, and coordinate water producers in the high desert area, also receiving and distributing State Water Project (SWP) water to various recharge facilities. The ultimate goal of the project was to recharge up to 40,000 acre-ft of SWP water through a system of extraction wells, monitoring wells, pumping stations, reservoirs, and conveyance pipelines. A preliminary hydrogeological feasibility assessment was conducted to assess groundwater level response to aquifer recharge, and to determine the optimal locations for extraction wells. Mr. Kyle was the lead project manager for the hydrogeological portions of the project, providing groundwater modeling support, well field interference evaluations, steel corrosion studies, and installation of six high capacity wells. All Phase 1 wells have been successfully completed and have been pumped at rates exceeding 4,000 gpm with specific capacities in excess of 140 gpm/ft.

West Coast Basin Well 1, Long Beach Water Department, Long Beach, CA

The Long Beach Water Department (LBWD) installed a new potable water supply well in the West Coast Basin. This well will be the only well within the system which will not be treated by the District's centralized water treatment facility, and as such, water quality was of paramount import. Mr. Kyle served as project manager to provide design, permitting, construction management, and inspection services during the project. The well was successfully competed despite significant logistical challenges and was tested at 2,000 gpm with a specific capacity of approximately 100 gpm/ft.



Benjamin Romero, PE

Pipelines & Irrigation Ditches

Mr. Romero serves as Hazen's Conveyance Practice Lead for the West Region. He has over 25 years of water resources engineering experience. Ben has spent the last 19 years specializing in water and wastewater conveyance design and construction throughout the state of California.

Education

BS, Civil Engineering, University of California, Davis

Certification/License

Professional Engineer

Authorized Entrants and Attendants for Permit-Required Confined Spaces (OSHA 29 CFR 1910.146)

Areas of Expertise

- Project Management/Delivery
- QA/QC
- Water Conveyance System Planning, Design, and Construction
- Sanitary Sewer System Design
- Pipeline Design: WSP, DIP, PVC, HDPE, RCP
- Trenchless Pipe Design: Jack and Bore, Micro-tunneling, and Horizontal Directional Drilling (HDD)
- Pipeline Alignment Analysis (routing studies)
- Alternative Analysis
- Utility Investigations
- Permitting
- Services During Construction
- Construction Inspection
- Pipeline condition assessment and rehabilitation
- Hydraulic modeling/analysis

San Diego County Water Authority Planning Services for Task 3 - San Diego 5ABC Flow Control Facility Replacement, San Diego County Water Authority, San Diego, CA

Task Lead. This project includes preliminary alternatives analysis, planning level conceptual design and cost estimates for new facilities and transmission pipelines including stakeholder coordination, environmental review and permitting evaluation of several viable alternatives for replacing the SD 5ABC FCF. The Hazen team identified and recommended the preferred alternative for further evaluation during next phase of preliminary design. In addition, team members completed a hydraulic analyses based on the various flow demand deliveries through the Second Aqueduct system from the Miramar Vent to the Red Cedar Crossover to determine if the higher hydraulic gradients required to operate the 5ABC at velocities exceeding 10 fps and/or the Red Cedar hydraulic constraint is causing the back-up in Miramar vent. Team members collaborated closely with the Water Authority throughout this project using in-person workshops and virtual meetings to review the results and discuss the recommendations during each of the project milestones.

MWRA Section 53 and 99 Pipeline Improvements Design and Engineering Services During Construction, Massachusetts Water Resources, Boston, MA

Lead Project Engineer. This project includes preliminary design, final design, and engineering services during construction for approximately 11,500 feet of 48-inch-diameter to 68-inch-diameter pipeline to improve the hydraulic capacity and reliability of the Water Authority's Northern High-Pressure zone by rehabilitating existing pipe and/or installing new pipeline sections that will be connected to the Sections 53 and 99 water system. Hazen team members performed comprehensive pipeline alternatives routing analysis, hydraulic analysis of proposed alternatives, preliminary design, pipeline condition assessments, construction cost estimates, and defensible final design contract documents and engineering services during construction for three large diameter water transmission pipelines which will be constructed under three (3) separate construction contracts.

Byrd Park Reservoir Zone 1N Supply Main and Inlet Valve Replacement, City of Richmond Department of Public Utilities, Richmond, VA

Technical QC Reviewer. Final engineering design contract documents (design and specifications) for the construction of two new 20-inch Zone 1N water supply mains including inlet valve replacements adjacent to the Byrd Park Reservoir.

Yard Piping Condition Assessment, West Basin Municipal Water District, El Segundo, CA

Technical Advisor. Development of a risk-based condition assessment program for yard piping at Edward C. Little Water Recycling Facility, Carson, and Chevron Treatment Facilities.

Otay Water District, Design for 5 Potable Water Pipeline Replacements, San Diego County, CA

Technical QA/QC Reviewer. Preliminary design for 4,100 LF and final design of 7,850 LF of pipelines ranging from 8-inches to 14-inches in diameter, bidding, and engineering construction support services. Key issues addressed for this project include an accelerated design and construction schedule to meet County of San Diego repaving moratoriums, pipe replacement in constrained residential areas, high service pressures, and trenchless methods. Project is currently underway.

Mountain House Raw Water Pipeline – Hydraulic Evaluation and Condition Assessment Project, Byron-Bethany Irrigation District, Bryon, CA

Project Manager. Field investigation, hydraulic evaluation, and condition assessment for 3.75 miles of a 30-inch diameter bar-wrapped welded-steel pipeline that delivers raw water to a local community water treatment plant.

CS-296 Pipeline Management, Design, Engineering Support During Construction, and Development of Improvement Plan for In-Line Inspection Tool, San Francisco Public Utilities Commission (Hetch Hetchy Water and Power), Moccasin, CA

Project Manager/Project Engineer. Condition inspection services for 37 miles of the San Joaquin Pipeline 1 including final design pipeline packages (58-inch WSP and 84-inch WSP), a conceptual design vault and roll-out section for SJPL 1, and the condition assessment of the 84-inch steel penstock and valve located at Moccasin.

City of Sacramento Utilities Department, Sacramento, CA

Project Engineer. condition assessment and corrosion evaluation of the City of Sacramento's stormwater collection system. Provided field testing and data analysis for the condition assessment of 32 pump stations and 112 steel outfall pipelines associated with the pump stations.

Pajaro Valley Water Management Agency (PVWMA), Watsonville, CA

Project Engineer. Corrosion field testing, data collection and evaluation study of a raw water conveyance facility connecting PVWMA's water supply from the Pajaro River for agricultural distribution throughout Watsonville and Pajaro Valley area. The project consists of approximately 25 miles of varying diameter pipelines.

East Bay Municipal Utility District (EBMUD), Oakland, CA

Project Engineer. Corrosion field testing, data collection and evaluation study of major water conveyance facility connecting EBMUD's water supply from the American River to their Mokelumne Aqueducts in San Joaquin County. The project included approximately 17 miles of 108-inch-diameter pipeline and two pumping plants (total of 38,000 hp). Responsibilities included conducting field tests and data analysis as part of the corrosion study.



Alex Gorzalski, PhD, PE, PO

Water Treatment

Mr. Gorzalski is a professional engineer experienced in process engineering, utility operations, and emergency response. His experience includes serving as the chief of a 120 MGD water treatment plant.

Education

Ph.D. Environmental Engineering,
University of North Carolina at
Chapel Hill

M.S. Environmental Engineering,
University of North Carolina at
Chapel Hill

B.S. Civil Engineering, University
of Wisconsin-Madison

Certification/License

Professional Engineer

Professional Operator – Water
Treatment

FEMA ICS-100, IS-700, IS-800

Areas of Expertise

- Utility operations
- Physical/chemical processes
- Water chemistry
- Water utility data analytics

Refereed Journal Publications

- Gorzalski, A.S., G.W. Harrington, O. Coronell. 2020. Impact of Model Selection on Predicted Contaminant Degradation in Water Treatment. *AWWA Water Science*: 1, 4: e1154.
- Gorzalski, A.S., G.W. Harrington, O. Coronell. 2019. Assessing flow segregation and mixing by modeling residual disinfectant conversion. *AWWA Water Science*: 1, 4: e1154
- Gorzalski, A.S., G.W. Harrington, O. Coronell. 2018. Modeling water treatment reactor hydraulics using reactor networks. *J. AWWA*: 110, 8: 13-29.

Plant 30 Wellhead Treatment Design, Monte Vista Water District, Montclair, CA

Mr. Gorzalski provided QA/QC for a Water Quality Monitoring Plan for Monte Vista, including details on regulatory-driven sampling frequency, analytical methods, and reporting procedures for all analyses conducted by the water system.

Water Quality Evaluation Study, Jurupa Community Services District, Jurupa Valley, CA

Process Engineer for an analysis to evaluate design alternatives to address a range of water quality constituents, including TDS, nitrate, PFAS, VOCs, 1,2,3-TCP, 1,1-DCE, and perchlorate. This study included the development of short-term options to mitigate service risks resulting from out of service wells, as well as long-term design alternatives to address regulated contaminants, while allowing flexibility to comply with potential future regulations.

PFAS Treatment Evaluation and Design, Rubidoux Community Services District, Riverside, CA

Mr. Gorzalski is providing support on the process mechanical design for 7 MGD of PFAS treatment at Rubidoux, including design and development of specifications for ion exchange treatment.

Centralized Groundwater Treatment Facility, City of Monterey Park, Monterey Park, CA

Mr. Gorzalski provided technical support to the Design-Build team in addressing the State Water Boards Division of Drinking Water (DDW) requirements for lead/lag PFAS treatment design.

West WTP Preliminary Design Phase, Columbia Power & Water Systems, Columbia, TN

Project engineer supporting the design of a greenfield surface water treatment plant including coagulation, flocculation, plate settlers, low pressure membranes, GAC, and chlorine disinfection. Responsible for providing operations support, including the preparation of the startup plan

- Gorzalski, A.S., C. Donley, O. Coronell. 2017. Elemental composition of membrane foulant layers using EDS, XPS, and RBS. *J. of Membrane Science*: 522, 31-44.
- Gorzalski, A.S.; A. Spiesman. 2015. Insights on Chlorate Occurrence, Intra-System Variability, and Source Water Concentrations. *J. AWWA*: 107, 11: E613-626.
- Gorzalski, A.S.; O. Coronell. 2014. Fouling of nanofiltration membranes in full- and bench- scale systems treating groundwater containing silica. *J. of Membrane Science*: 468, 349-359.
- Imam, S.; S. Yilmaz, U. Sohmen, A.S. Gorzalski, J.L. Reed, D.R. Noguera, T.J. Donohue. 2011. iRsp1095: A genome-scale reconstruction of the *Rhodobacter sphaeroides* metabolic network. *BMC Systems Biology*: 5, 116.
- Read, J. S.; A. Shade, C.H. Wu, A.S. Gorzalski, K.D. McMahon. 2011. "Gradual Entrainment Lake inverter" (GELI): A novel device for experimental lake mixing. *Limnology and Oceanography Methods*: 9, 14-28.

Manuals of Practice and Research Reports

- AWWA M20: Water Chlorination and Chloramination Practices and Principles
- AWWA M68: Water Quality in Distribution Systems
- Moltz, H.L.N.; R. Mandel, K.R. Bencala, J.B. Palmer, A. Nagel, S. Kaiser, A.S. Gorzalski. 2018. Forest Cover Impacts on Drinking Water Utility Treatment Costs in a Large Watershed. Water Research Foundation, Denver, CO.
- Starke, J.A.; S. Yilmaz; A.S. Gorzalski; D.R. Noguera; G.W. Harrington. 2013. Characterizing the Microbial Community Responsible for Nitrification. Water Research Foundation, Denver, CO.

Davis Street Transfer Station Stormwater Treatment, San Leandro, CA

Project engineer for the design of industrial stormwater conveyance and treatment system. Treatment processes evaluated included coagulation, flocculation, high-rate settling (plate settler and dissolved air floatation), media filtration, GAC, and ion exchange. Managed bench-scale and pilot-scale testing.

Water Utility Operations, Washington Aqueduct, DC

Operations Engineer at a large water utility serving over 1 million people in Washington, DC and northern Virginia. Acted as chief of a 120-mgd conventional water treatment plant. Experienced in troubleshooting operational and water quality problems, implementing operations key performance indicators, developing calibration and preventative maintenance programs, optimizing backwash processes, and training operations staff.

Advanced Treatment Pilot Study, Washington Aqueduct, Washington, DC

Technical advisor for piloting ozonation, biofiltration, and UV disinfection, and assessing effects of treatment changes on distribution system materials using pipe loops. The purpose of the pilot was to assess the efficacy of the selected treatment technologies for improving filtration performance, reducing taste and odor, and reducing organic DBP precursors.

Advanced Treatment Study, Washington Aqueduct, DC

Technical Lead for study assessing the feasibility of retrofitting 225-mgd and 120 -mgd conventional treatment plants with ozonation, biofiltration, and UV disinfection. Determined desired level of treatment for taste and odor compounds, organics reduction, and pathogen disinfection.

Ammonia and Corrosion Control Treatment Alternatives Study (Confidential)

Project manager for feasibility study of different technologies to treat a groundwater with high ammonia. Treatment alternatives were also developed to address copper corrosion in the distribution system.

Identification of Membrane Foulants and Optimum Cleaning Strategies, Cape Fear Public Utility Authority, NC

Performed membrane autopsy to identify membrane foulants. Constructed bench-scale apparatuses for testing alternative cleaning solutions and analyzed effect of cleaning on foulant removal and flux recovery. Performed a cost-benefit analysis of CIP and energy cost.

Operation of Pilot-Scale Water Treatment Plant, University of Wisconsin-Madison, WI

Operated a pilot-scale conventional water treatment plant and chloraminated distribution. Monitored water quality, adjusted chemical doses, backwashed filters, and diagnosed treatment issues.



Silvana Ghiu, PhD, PE

Water Treatment

Dr. Ghiu has extensive experience in water quality characterization, field testing, and design of water treatment plants. She has worked extensively within California on projects involving both primary and secondary disinfection systems; from strategic alternative evaluations at the feasibility level to conceptual and detailed design.

Education

PhD, Environmental Engineering,
University of South Florida

MS, Environmental Science and
Policy, Central European
University

MS, Atmospheric Physics,
University of Bucharest

BS, Engineering Physics,
University of Bucharest

Certification/License

Professional Engineer

Areas of Expertise

- Groundwater treatment
- Raw water characterization
- Membrane system design and operation

Technical Publications

Gatza, D, F. Fuchs, M. Serna, S. Ghiu and G. Filteau:
"Comprehensive Results of West Basin Municipal Water District's Multi-Year Ocean Water Desalination Demonstration Project". Proceedings of the AMTA/AWWA Annual Conference. Las Vegas, NV. March 2014.

Ghiu, S, G. Filteau, and D. McKinney: "Seawater Desalination Energy Consumption Modeling". Proceedings of the AMTA/AWWA Annual Conference. Las Vegas, NV. March 2014.

Ghiu, S, G. Filteau, and D. McKinney: "Seawater Desalination Energy Consumption Modeling". Proceedings of the Water Reuse California Annual Conference.

Santa Clarita Valley Water Agency, Santa Clara and Honby Wells PFAS Treatment Final Design

Process and Mechanical Lead. Santa Clara and Honby wells (total of 2,300 gpm) have been offline due to presence of PFAS contaminants. The treatment system includes cartridge filters, IX system and chemical dosing and storage systems for and onsite generated sodium hypochlorite and liquid ammonium sulfate. Responsible for leading the team for preparing final P&ID and mechanical plans and specifications for the IX treatment of PFAS impacted wells

Chino I Desalter VOC Treatment, Chino Basin Desalter Authority, CA
Technical Advisor. The project includes preliminary and final design of two (2) GAC treatment facilities (1.7 mgd and 3.4 mgd) at the Chino I Desalter Plant for the removal of TCE and 1,2,3-TCP, and evaluation of treatment requirements for 1,4-dioxane, cis-1,2-DCE, 1,2-CDA, PFOA, and PFOS. The goal of this project is to provide groundwater treatment for all CDA bypass wells (CDA Wells I-1 through I-4), and several treated wells (CDA I-16 through 18), plus 10 new wells that will be installed by the County of San Bernardino as part of a Cleanup and Abatement Order issued by the Santa Ana Regional Water Quality Control Board (SARWQCB).

Delta Plant Improvements for PFAS Treatment, City of Monterey Park, CA

Design Manager. Hazen, in partnership with Filanc Construction, is designing and constructing a GAC treatment system for PFAS in the groundwater for a flow of 7,500 gpm. The pretreatment system consist of cartridge filters and chlorine is added to the treated water for disinfection. The groundwater is impacted by 1,4-dioxane and an UV-AOP system was implemented by the team in a previous phase of the project.

Monterey, CA. March 2013.

Ghiu, S, R. Chmielewski, J. DeVille, B. Bergantine, D. DeBoer, and E. Lynne: "Challenges of Selecting NF Membranes for Removal of DBPs Precursors from Softened Groundwater: Watertown Utilities Experience". Proceedings of the AWWA Membrane Technology Conference. Memphis, TN. March 2009.

Boysen, R.E., F. Mohammadesmaeili, S.M. Ghiu, and R.R. McCandless: "Reverse Osmosis Product water Stabilization Alternatives and Considerations". Proceedings of the AWWA Membrane Technology Conference. Memphis, TN. March 2009.

Ghiu S, R. Carnahan and M. Barger: "Comparative analysis of the transport properties of hyperfiltration membranes using Kimura-Sourirajan and Spiegler-Kedem models". Proceedings of the AWWA-Water Quality Technology Conference, Philadelphia, PA, November 2003.

Ghiu S, R. Carnahan and M. Barger: "A quantification of the diffusional and convective flux of salts in CA and TFC reverse osmosis membranes". Proceedings of the IDA World Congress on Desalination and Water Reuse, Bahamas, September-October, 2003.

Water Treatment Plants for Stations 7 and 11, City of Lemoore, CA
Project Manager. Hazen, in partnership with Filanc Construction, was selected by the City of Lemoore to provide progressive design build services for two groundwater treatment plants. The groundwater has been impacted by iron, manganese, ammonia, sulfides, color, turbidity, arsenic and high TOC concentrations forming elevated DBPs in the presence of chlorination. Sixty percent design was completed in sixty days in order to assist Filanc with preparing the guaranteed maximum price (GMP). Final design will proceed in August 2019 with construction scheduled to commence at the end of 2020. Hazen is providing engineering design and services during construction and startup.

Ion Exchange Water Treatment Plant, Coachella Valley Water District, Palm Desert, CA
Project Manager. Feasibility study to assess cost effectiveness of IX brine treatment and brine disposal options. The study will provide the utility sufficient information to make a decision whether different brine minimization strategies can be viable options to the current alternative for brine disposal.

Groundwater Treatment for San Fernando Basin, Los Angeles Department of Water And Power, CA
Task Leader. The project may require but not be limited to services to provide advice and recommendations regarding optimal project scheduling options, budgeting and cost estimating, design drawings, facility layouts, specifications, and project meetings. Services may include Civil, Traffic, Structural, Mechanical, Electrical, Water Quality and Treatment Engineering.

Feasibility Study to Develop the Simo Valley basin as Potable Water Resource, Simi Valley Waterworks District, CA
Task Leader. Responsible for water quality analysis for wells in different regions, identification and placement of the required treatment system as well as blending with local supplies to achieve the water quality goals. Responsible for developing capital and O&M cost estimates and cost-benefit analysis of alternatives for treatment.

Whittier PFAS Treatment Support, Suburban Water System, Covina, CA
Process Mechanical Lead. Suburban Water System's Whittier and La Mirada Systems required engineering design services to remove PFAS compounds from 5 drinking water wells, comprising 10,600 gpm. Hazen is leading the preliminary design and treatment approach evaluation, sharing process mechanical design with the prime consultant, and leading electrical and I&C. Hazen is also providing support on the design of RSSCT bench-scale testing, and is leading the facility permitting.



Nicole Blute, PhD, PE

Water Quality

Dr. Blute develops and leads a wide variety of drinking water system projects, notably including water system planning, groundwater contamination treatment projects including PFAS, technology testing for emerging inorganic and organic contaminants, distribution system water quality projects, and disinfection strategy evaluations.

Education

PhD, Environmental Engineering,
Massachusetts Institute of
Technology

BS, Environmental Science,
University of Rochester, NY

BA, Chemistry, University of
Rochester, NY

Certification/License

Professional Engineer

Areas of Expertise

- Project management
- Groundwater treatment
- Decision analysis
- Advanced treatment
- Source water integration
- Distribution system water quality
- Corrosion control and stabilization
- Bench, pilot, and demonstration testing

Professional Activities

American Water Works
Association

- Research Division Trustee
- Inorganic Contaminants
Committee Chair

Society of Women Engineers

California Nevada AWWA

Recycled Water Committee
Secretary

Plant 30 Wellhead Treatment Final Design, Monte Vista Water District, Montclair, CA

Project Manager. Hazen provided design services to Monte Vista Water District (MVWD) for the design and construction of a 5.8 MGD water treatment facility (expandable to 8.7 MGD) for the removal of 1,2,3-TCP, DBCP, nitrate, and perchlorate from the District's groundwater supply. The project includes raw water pipelines to convey multiple wells to the site, GAC+IX treatment facilities, and waste brine pipeline all within a small site footprint. Hazen's engineering services include preparation of Basis of Design Report (BODR), field investigations, detailed design, CEQA, permitting, bidding services, engineering services during construction, and construction management.

Eastside Water Treatment Facility Expansion, City of Chino, CA

Technical Advisor for the Eastside Water Treatment Facility Expansion. The project involves retrofitting the existing treatment equipment and building to accommodate an expanded capacity from 3,500 to 7,000 gpm. The treatment process consists of GAC for removal of 1,2,3-trichloropropane (1,2,3-TCP), regenerable ion exchange (IX) for the removal of nitrate and perchlorate, and chlorine gas for disinfection. The project also includes pipelines to convey new source water from two additional wells and a brine line that eliminates the need to store and haul waste brine offsite for disposal.

Chino I Desalter VOC Treatment, Chino Basin Desalter Authority, CA

Technical Advisor. The project includes preliminary and final design of two (2) GAC treatment facilities (1.7 mgd and 3.4 mgd) at the Chino I Desalter Plant for the removal of TCE and 1,2,3-TCP, and evaluation of treatment requirements for 1,4-dioxanr, cis-1,2-DCE, 1,2-CDA, PFOA, and PFOS. The goal of this project is to provide groundwater treatment for all CDA bypass wells (CDA Wells I-1 through I-4), and several treated wells (CDA I-16 through 18), plus 10 new wells that will be installed by the County of San Bernardino as part of a Cleanup and Abatement Order issued by the Santa Ana Regional Water Quality Control Board (SARWQCB).

Technical Publications

Blute, N.K., McGuire, M.J., Reich, K., West, N., Voutchkov, N., and MacLaggan, P. 2008. Integration of Desalinated Seawater into a Distribution System: A Corrosion Pilot Study. Journal of the American Water Works Association, v. 100 (9), p. 117-131.

Blute, N., Wu, Y., Imamura, G., Song, Y., Porter, K., Cron, C., Fong, L., Froelich, D., Abueg, R., Henrie, T., Ramesh, S, and Vallejo, F. (2015) Assessment of Ion Exchange, Adsorptive Media and RCF for Cr(VI) Removal. Water Research Foundation Report.

Blute, N., Wu, Y., Cron, C., Fong, L., Froelich, D., and Abueg, R. (2015) Microfiltration in the RCF Process for Hexavalent Chromium Removal from Drinking Water. Water Research Foundation Report.

Chowdhury, Z., Bigley, S., Porter, K.L., Blute, N., Rhoades, J., Westerhoff, P., Bowen, A. (2015) Evaluation of Technologies for Hexavalent Chromium Removal and Development of a Compliance Planning Approach. Water Research Foundation Report.

Najm, I., Brown, N.P, Seo, E., Gallagher, B., Gramith, K., Blute, N., Wu, Y., Yoo, M., Liang, S., Maceiko, S., Kader, S., and Lowry, J. (2014) Impact of Water Quality on Hexavalent Chromium Removal Efficiency and Cost. Water Research Foundation Report.

Blute, N.K., Wu, Y., Porter, K., Imamura, G, McGuire, M.J., Zurn, S., Abueg, R., Froelich, D., and Fong, D. (2013) Hexavalent Chromium Removal Project Report.

Blute, N., Wu, X., Cron, C., Abueg, R., Froelich, D., and Fong, L. 2014. Hexavalent Chromium Treatment Implementation in Glendale, Calif. Journal of the American Water Works Association, v. 106 (3), p. E160-175.

Blute, N.K., Ghosh, A., and Lytle, D. 2012. Assessing Ammonia Treatment Options. Opflow, May issue.

Russell, C.G., Blute, N.K., Via, S., Wu, X., and Chowdhury, Z. 2012. Nationwide Assessment of Nitrosamine Occurrence and Trends. Journal of the American Water Works Association, v. 104 (3), p. 57-58.

Owner's Agent for the San Fernando Basin Groundwater Remediation, Los Angeles Department of Water and Power, Los Angeles, CA

Project Manager and Technical Leader for the Los Angeles Department of Water and Power (LADWP) San Fernando Basin Groundwater Remediation. As the Owner's Agent, the team led by Dr. Blute is conducting a \$48.8M, 10-year project to select and implement remediation, estimated to cost \$600M for planning, design, and construction. Components include the following: Technical evaluation; Regulatory permitting, including 97-005 reports; Design services ranging from 30% to 100% design depending on the project; Procurement assistance; Proposition 1 grant writing; Construction scheduling; and Evaluation of alternate delivery options.

Water Quality Evaluation Study, Jurupa Community Services District, CA

Technical Advisor for an analysis of alternatives to address a range of water quality constituents, including TDS, nitrate, PFAS, VOCs, 1,2,3-TCP, 1,1-DCE, and perchlorate. This study included the development of short-term options to mitigate service risks resulting from out of service wells, in addition to long-term design alternatives to address regulated contaminants. Flexibility to address potential future regulations was considered.

Centralized Groundwater Treatment Facility, City of Monterey Park, Monterey Park, CA

Dr. Blute provided technical support to the Design-Build team in addressing the State Water Boards Division of Drinking Water (DDW) questions about use of advanced oxidation processes (AOP) for 1,4-dioxane and volatile organic compound (VOC) removal and catalytic GAC for peroxide quenching. Dr. Blute led the production of a white paper to summarize industry knowledge on these topics requested by DDW.

PFAS Treatment Evaluation and Design, Rubidoux Community Services District, Riverside, CA

Dr. Blute is the water quality and permitting lead for the Hazen team, which conducted a treatment evaluation and is currently preparing the detailed design of a 7 MGD facility. She is providing support to facilitate DDW permitting discussions.

Water Quality Feasibility Study, City of Chino, Chino, CA

Dr. Blute was the Technical Advisor on a planning project for the City of Chino to identify a permanent solution to fully utilize all City groundwater wells by addressing water quality issues. Treatment and non-treatment options were evaluated for the City's twelve wells. The team evaluated groundwater quality considering current and potential future regulated contaminants, determined compliance approaches, identified best value treatment technologies, and prepared site plans for the leading options.



Luke C. Wang, PE

Water Supply Planning and Demand Analysis/Forecasting

Mr. Wang specializes in water supply planning, operations, and demand forecasting. He is Hazen's Water Resource Management Leader for the West Region.

Education

MS, Earth and Environmental Engineering, Columbia University

BS, Earth and Environmental Engineering, Columbia University

Certification/License

Professional Engineer

Areas of Expertise

- Water supply operations management
- Source water quality
- Big data management and visualization
- Hydrology

Professional Activities

American Water Works Association (AWWA)

AWWA Information Management & Technology Research Committee - Chair

American Geophysical Union

Publications

Arnold, Roger, Luke Wang, Talle Lopez, Sophie James, and Nicole Blute. "Updating Lead and Copper Rule Sample Site Selection: Best Practices from an Innovate Pilot Program." Journal of the American Water Works Association, April 2020: 22-31.

Gong, Gavin, Lucien Wang, Laura Condon, Alastair Shearman, and Upmanu Lall. "A Simple Framework for Incorporating Seasonal Streamflow Forecasts Into Existing Water Resource Management Practices." Journal of the American Water Resources Association 46.3 (2010): 574-585.

Santa Clara Valley Water District (Valley Water) Water Demand Model, San Jose, CA

Project Manager for developing Valley Water's new water demand model. Valley Water is in the process of developing a new water demand model for the purpose of developing long-term water demand projections. The model will be used to support several water supply planning and analysis efforts. As Project Manager, Mr. Wang is responsible for guiding the overall technical direction of the project, as well as maintaining the project budget and schedule.

East Bay Municipal Utility District (EBMUD) 2050 Demand Study, EBMUD, Oakland, CA

Deputy Project Manager for EBMUD's 2050 Demand Study. EBMUD is in the process of developing an econometric model for forecasting water demands in their service area out to the year 2050. The econometric model will explicitly account weather/climate conditions, anticipated land use changes, development trends, and socioeconomic factors (e.g. water rates, jobs, population growth, income) which have been shown to impact water use. The forecasted demands will be a critical component of EBMUD's 2020 Urban Water Management Plan.

Bay Area Water Supply & Conservation Agency Regional Water Supply Reliability Model Development and Analysis Services, San Mateo, CA

Project Manager and lead systems modeler for BAWSCA's Regional Water Supply Reliability Model project. Designed a water supply system model for the Bay Area incorporating regional supply sources (e.g. San Francisco Regional Water System) with locally utilized supplies and detailed estimations of municipal demands. BAWSCA is using the model for long-term water reliability planning and alternatives analysis.

Beverly Hills Integrated Water Resources Master Plan (Water, Sewer, Storm, Recycled, and SCADA), City of Beverly Hills, CA

Provided technical guidance and supported development of the long-range demand forecast for Beverly Hills' Integrated Water Resources Master Plan (IWRMP). The forecasts supported hydraulic modeling of the City's potable water system and will be used to support the City's other long-range planning efforts. The forecasts incorporated both per-capita and land use elements.

Design Services for the Development of New York City's Operation Support Tool, NYCDEP, New York, NY

The Operations Support Tool (OST) is a state-of-the-art decision support system to provide computational and predictive operations and planning support for New York City's 1+ BGD water supply system. OST is an integrated model consisting of a water supply operations model, mechanistic reservoir water quality models, hydrologic forecasts, and a database containing near-real-time system data. Mr. Wang developed hydrologic forecasts, demand forecasts, dynamic reservoir operating rules, and customized dashboards for visualizing model output.

Tampa Bay Water Seasonal Source Water Allocation Decision Support Tool, Tampa Bay Water, Clearwater, FL

Developed a forecast-based decision support tool to set monthly source allocations, minimize anticipated costs, and avert financial and regulatory risks during TBW's annual budgeting process. The tool is a two-stage algorithm consisting of an inner system model and an outer optimization module. Mr. Wang designed and coded the inner system model which simulates TBW's monthly surface water and groundwater supply operations. He also designed and tested the outer optimization module (Genetic Algorithm) which seeks source allocations that minimize expected O&M costs and minimize probability of requiring groundwater permit violations. The tool is used to minimize probability of budget shortfall, budget surpluses, and need for utilizing rate stabilization funds or levying within-year rate increases.

Finished Water Quality (Nitrification and LCR) Engineering Services California Water Service Company, San Jose, CA

Project manager. Provided a variety of finished water operations and management consulting services for the California Water Service Company (Cal Water). In Cal Water's Los Altos District, Hazen developed a nitrification action plan, which includes the following services: •Historical analysis of nitrification in the Los Altos distribution system, including identification of likely drivers. •Development of a tailored nitrification action plan, specific monitoring triggers for instituting operational modifications and potential infrastructural modifications for future control.

Lead and Copper Rule (LCR) assessment, California Water Service Company, San Jose, CA

Project manager assisting Cal Water in 7 districts in Northern and Southern California, including Stockton, Bakersfield, San Carlos, and Westlake. Services in support of the LCR assessments include: •Identification of a Tier 1 customer (single family structures containing copper pipe with lead solder) pool in the district service areas using a GIS data-driven approach. •Outreach to likely Tier 1 customers to gauge interest in participation in the LCR sampling program. •Development of an implementation plan for scaling the data-driven Tier 1 identification program to all Cal Water districts.

Water for the Future, Delaware, NYCDEP, New York, NY

Mr. Wang performed water supply system modeling in support the planned shutdown and repair of New York City's Rondout-West Branch Tunnel. Planning for the Tunnel's shutdown is critical for the reliability of NYC's water supply as it typically supplies 60% of the City's demand. Using NYC's Operations Support Tool (OST) Mr. Wang developed triggers for mobilizing and demobilizing construction of the Rondout-West Branch Tunnel bypass project to ensure maximum water supply reliability during the shutdown. He also modeled the water quality impacts of removing the Delaware System from the City's water supply mix during the shutdown.



Jeff G. Powers, PE

Reservoirs/Sediment Removal

Mr. Powers is an adept Project Manager who has over 200 dam design/rehabilitation projects to his credit along with over 50 dam breach analyses.

Education

BSCE, Southern College of Technology, (Civil Engineering Technology)

Certification/License

Professional Engineer

Safe Dams Program Engineer of Record - Civil Engineering, Hydrology, and Hydraulics

Areas of Expertise

- Dam Engineering
- Water Resources
- Stormwater Management
- Floodplain Mapping/FEMA Map Revisions
- Hydrologic & Hydraulic Modeling
- Site Development
- Transportation Engineering
- Water/Wastewater Design
- Construction Administration

Professional Activities

- Association State Dam Safety Officials (ASDSO) Affiliate Member
- ASDSO Advisory Committee (AdCom)
- Georgia Association of Water Professionals (GAWP)
- American Society of Civil Engineers (ASCE)
- If the association has a specific committee

Mr. Powers specializes in high hazard dam design and renovation, river and floodplain hydraulic analysis, storm drainage system design, culvert and bridge analysis, and levee rehabilitation. In conjunction with his dam design project experience, Mr. Powers has significant expertise modeling dam failures and floodplains utilizing both 1d and 2d models, analyzing existing and proposed culverts, and modeling bridges.

Whitewater Siphons Erosion Control Structure, Metropolitan Water District of Southern California, Los Angeles, CA

Technical Lead. Damage assessment and design of emergency repair of an erosion control structure protecting the Colorado River Aqueduct Whitewater Siphons. Evaluated the hydrology and hydraulics and designed an emergency repair using grouted rip rap, 1T to 8T, that integrated into the remaining structure. Bid documents were prepared on schedule for construction before the next rainy season.

Inundation Maps and Supporting Technical Studies, Glendale Water and Power, CA

Technical Lead. Hazen was retained to develop inundation extents of non-weather-related dam failure and corresponding hydraulic models for dam breach wave routing. Services included two-dimensional breach modeling, database creation for each structure and appurtenances including spillway rating curves, elevation storage curves, and modeling methodology, and developing inundation mapping for five dams (Diederich, Brand Park, Glenoaks 968, Chevy Chase 1290, and East Glorietta) located in the foothills of the Verdugo Mountains and the San Rafael Mountains. Inundation associated with these dams will be used by emergency officials to create evacuation plans for the affected city neighborhoods.

Dam Engineering Services, City of Portsmouth, VA

Technical Lead. Dam engineering services associated with five existing dams in Suffolk County, VA. Services initially included inspections but was expanded to include probable maximum precipitation and design storm evaluation along with dam breach zone inundation mapping. Dams included a large concrete gravity dam and four earthen embankment dams with concrete spillways.

Percy D. Miller Water Treatment Plant River Intake Sill Dam, City of Winchester, VA

Technical Lead. Renovation of a low-head sill dam across the north fork of the Shenandoah River in central Virginia. The dam's concrete ogee shaped weir spans the entire river channel creating sufficient withdrawal depth at the water treatment plant's pump intake. Originally constructed in the early 1950's, the intake is the water treatment plant sole source of raw water. Hazen's initial assessment of the dam indicated that the dam's weir is in excellent condition, but the two rubble stone end walls should be replaced with modern concrete structures. Hazen's scope of service includes an initial visual assessment, hydrological evaluation of the river flows and flood elevations, hydraulic modeling utilizing Flow 3D and HEC-RAS, and development of construction documents for the replacement of the end walls.

Loch Dornie Dam, Grandfather Golf & Country Club, Grandfather Mountain, NC:

Technical Lead. Dam inspection, evaluation, hydrologic and hydraulic analysis, and NC Dam Safety coordination associated with a 55-foot tall earthen embankment dam in Grandfather Mountain, NC. Initial services included an assessment of the dam's ability to safely pass the required design storm through the existing concrete channel spillway and development of potential spillway rehabilitation/replacement options, rehabilitation options associated with seepage along the downstream embankment slope, and slip-lining of the existing corrugated metal drawdown pipe.

Hillview Reservoir Chemical Addition Facilities and Facility and Flow Control Improvements, NYCDEP, Yonkers, NY

Technical Reviewer. Design of new chemical addition facilities, flow control improvements, and facility upgrades at site of New York City's most critical water supply facility. Design efforts included planning, sizing, and siting of the proposed chemical addition facilities to treat over 2-billion gallons per day. Other aspects of the design include electrical upgrades on the space constrained Hillview Reservoir site, replacement of 41 large sluice gates and renovation of 100-year old structures.

Dam Engineering Services, Gwinnett County, GA

Technical Reviewer. Dam engineering services associated with 25 dams for the Department of Water Resource. Services included quarterly inspections, rehabilitation design, Operation & Maintenance Plan development, inundation mapping, and Emergency Action Plan updates. Structures range in size from small residential subdivision dams to NRCS Flood Control Structures and one of the county's raw water reservoirs.

Savage River Dam, Upper Potomac River Commission, Westernport, MD

Technical Expert. Dam Inspection and spillway rehabilitation services for a 182-foot tall earth and rockfill dam classified as a large, high hazard structure by Maryland. The dam's spillway consists of 320-foot concrete side channel spillway which discharges into a 50-foot wide concrete chute spillway. Originally designed by the USACE, the municipal water supply reservoir also provides low flow augmentation for the prized native trout stream below the dam.

Goose Creek Dam, Loudoun Water, Loudoun County, VA

Technical Expert. Design and implementation of flow monitoring and recording system for an existing water supply reservoir. The scope of work included developing a discharge rating curve for the dam's 500-foot wide concrete ogee spillway, selection of monitoring equipment, providing fiber optic connections to the water system existing control system, and installation of security cameras.



Kent O'Brien, PG, CEG

Well Drilling & Hydrogeology

Kent is a Senior Hydrogeologist with over 28 years of professional experience. He specializes in the planning and implementation of strategies to resolve groundwater supply problems.

Education

BS, Geological Science, San Diego State University, San Diego CA

MS, Geology/Hydrogeology, San Diego State University, San Diego, CA

Certification/License

Registered Geologist: CA (6846)

Certified Engineering Geologist: CA (2132)

8-Hour HAZWOPER Annual Courses

Areas of Expertise

- Groundwater Planning
- Groundwater Treatment
- Well Design and Construction
- Well Rehabilitation
- Groundwater CEQA Analysis
- Water Resource Management
- Litigation Support

Experience

- 30 total years
- 4 years with Hazen

Professional Activities

CA-NV AWWA

- Water Well Technology Committee

Groundwater Resource Association (GRA).

Geohydrologic and Engineering Design Services for the City of Banning Well C-8, Banning, CA

QA/QC. Well C-8 is going to be a new well for increased supply for the City of Banning. Services include well siting study, planning and design for both the well drilling and equipping, and construction services. (Design: 2018-2019)

Installation of Replacement Well to Improve Water Quality Using In-Well Blending for Small Disadvantaged Community, Modesto, CA

Project Manager and Geohydrologist. Designing a replacement well for the City of Modesto on behalf of the City of Grayson. The existing Well 274 is one of two wells that are the only source of municipal water for the City of Grayson's approximately one thousand residents. The existing Well 274 is shallow and extracts groundwater from the upper portion of the aquifer system degraded by nitrate at concentrations exceeding the MCL. The intent of this project is to design and install a well with two screen sections to extract and blend contaminated and uncontaminated water to meet MCL requirements. The Project also includes consideration of space and utility upgrades for a future treatment system and / or storage tank. To this end, the concept-level design considers a future Reverse Osmosis (RO) treatment plant or application of emerging technology for the biological treatment of nitrate. (Design: 2017)

New Well Installation and Replacement of Existing Well, Ukiah, CA

Mr. O'Brien was the project manager for fast-track project to install two municipal wells in response to drought conditions. The drought had resulted in the severe reduction in surface water supplies and a sharp increase in the use of groundwater. In addition, the project required the simultaneous evaluation of an existing well that has been losing production capacity and had elevated bacteria. Both wells were designed concurrently and include the installation of multi-zone monitoring wells.

Optimization of Carbon Treatment for PCE and Cost Recovery, Well 4, Sebastopol, CA

Mr. O'Brien is the lead hydrogeologist for a 900-gpm municipal well equipped with dual carbon beds for the treatment of chlorinated solvents caused by a hazardous materials release. Well 4 has been in operation since 1958 and is the primary water production source for the City. Contamination of the groundwater occurred in the 1970's and the plume has been migrating to Well 4 during the last 20 years due to a change in groundwater flow conditions. Treatment by carbon will continue for an additional 30 years. Replacement of the aging Well 4 is required to maintain both plume containment and water supply for the City. Mr. O'Brien is providing litigation support for additional cost recovery from the parties responsible for the contamination to replace Well 4 at the same location and maintain the carbon system in operation.

Design and Permitting of Injection Wells, US Marine Corp, Camp Pendleton, San Diego, CA

Mr. O'Brien completed the design of 16 injection wells and related groundwater monitoring wells for the injection of 870 acre-ft/year of tertiary treated wastewater into the aquifer along the coast north of San Diego, CA. The purpose of the project is to protect the drinking water aquifer from seawater intrusion caused by inland groundwater well pumping and to manage the salt and nutrient loading in the groundwater basin. Mr. O'Brien is also completing the Waste Discharge Requirements technical report and developing a strategy for managing salinity changes in the injection area.

New Well Installation and Replacement of Existing Well, Ukiah, CA

Mr. O'Brien was the project manager for fast-track project to install two municipal wells in response to drought conditions. The drought had resulted in the severe reduction in surface water supplies and a sharp increase in the use of groundwater. In addition, the project required the simultaneous evaluation of an existing well that has been losing production capacity and had elevated bacteria. Both wells were designed concurrently and include the installation of multi-zone monitoring wells.

Groundwater Storage and Recovery Project EIR, City and County of San Francisco, CA

Mr. O'Brien's role was developing the hydrogeologic section for the project level CEQA document related to the aquifer storage and recovery (ASR) project proposed by the San Francisco Public Utilities Commission (SFPUC). The SFPUC proposes to provide surface water to Partner Agencies (the cities of San Bruno, Daly City and Cal Water) to be used in lieu of the agencies pumping groundwater during normal and wet rainfall years. The reduction of pumping by Partner Agencies would ultimately increase groundwater storage within the South Westside Groundwater Basin. Stored groundwater would be utilized by pumping 16 new Project wells during periods of insufficient surface water supplies (i.e., dry years). The EIR is approved and the project is under development.

Power Efficiency Evaluation 19 Municipal Wells, City of Redlands, CA

Mr. O'Brien was the lead hydrogeologist in citywide evaluation of operational efficiency. The broad reaching study evaluated the City's operations to identify cost savings. A focus of the study was the power consumption of the water supply system, half of which consists of 16 operating municipal wells with flow rates up to 2,000 gpm. Mr. O'Brien developed a program to use existing data to identify the most cost effective wells to operate and which to be redeveloped or used only for backup.

Well Construction Litigation Expert, City of Davis, Davis, CA

Mr. O'Brien provided litigation support as a technical expert in well construction standards and standards of municipal well operation on behalf of the City of Davis. The City of Davis was subject to litigation related to the construction and operation of their well field and the spread of chlorinated solvent contamination from a hazardous waste site. The case settled out of court in on terms beneficial to the City of Davis.



Katie Hoek, PE, ENV SP

Environmental Compliance Documents

Ms. Hoek's experience in environmental review and permitting spans over a decade. Her work focuses on identifying potential environmental impacts and working with the design team to minimize or mitigate these impacts.

Education

MS, Civil/Environmental Engineering, Stanford University
BS, St. Lawrence University

Certification/License

Professional Engineer

Areas of Expertise

- Permitting
- EIS/EA
- Water Quality Studies/Reports

Professional Activities

NYSAWWA

- Membership Chair

NYWEA

- Watershed Technical Conference Program Committee Member

Technical Publications

"FEMA All-Hazards Mitigation Plan for the Village of Ellenville, NY."

"What You Always Wanted to Know about Chloramine Disinfection: A Survey of 13 Major Water Utilities" AWWA ACE 10: Chicago, 2006 and AWWA Opflow, Volume 36, No. 11, November 2010

She has led complex permitting efforts through large-scale multi-phased projects and obtained fast-track permit updates due to unforeseen events on sites where permits had already been received. Ms. Hoek understands which permits to prioritize to keep projects on track. She has served in a number of key permitting and environmental roles for high profile water and wastewater projects.

Union Sanitary District, Wastewater Treatment Plant, Union City, CA. CEQA Plus Program-level Mitigated Negative Declaration

This project included a Program-level Initial Study/Mitigated Negative Declaration for a \$350M wastewater treatment plant upgrade. Because of the potential for Federal funding, a CEQA Plus document was prepared. As part of the work, a project-specific document was prepared for the first phase of the overall program.

Seeley Water District, Wastewater Treatment Plant, Seeley, CA. CEQA Plus Mitigated Negative Declaration

The project included an Initial Study and Mitigated Negative Declaration to upgrade an existing wastewater treatment plant. The project is expected to receive Federal funding so a CEQA Plus document was prepared.

City of Banning, Water Well, Banning, CA. CEQA Plus Mitigated Negative Declaration

The project includes an Initial Study and Mitigated Negative Declaration for a new drinking water well in the City of Banning.

City of Santa Rosa, Rehabilitation of Lift Stations, Santa Rosa, CA. CEQA Categorically Exemption

As a result of the 2017 wildfires, two of the City's lift stations were badly damaged. FEMA funding was secured to rehabilitate the lift stations. Hazen provided CEQA consultation and preparation of the Notice of Determination.

San Diego County Water Authority Aqueduct Flow Control, San Diego, CA. CEQA Plus Document

The project includes improvements to San Diego County Water Authority aqueduct flow control facilities. Some of the facilities are located near sensitive receptors and the entire project is within a habitat conservation plan area. Hazen is developing the initial analysis to determine the appropriate level of CEQA. Following the concept phase, Hazen will prepare the CEQA document.

Chromium 6 Removal Project, Coachella Valley Water District, Palm Desert, CA

This \$250MM project included a CEQA Plus Environmental Impact Report to address the new treatment systems for the removal of Chromium 6 from the potable water system. Ms. Hoek provided guidance and support to development of the EIR.

Program Management for CSO Long-Term Control Plan, Lowell Regional Wastewater Utility, MA

Provided permitting assistance with a future/proposed capital project that includes an underground storage facility to reduce sewer surcharging. An Environmental Notification Form was developed, taking into account the characteristics of the proposed facility, a property transfer, and an evaluation of potential environmental impacts using the MEPA checklist.

Nut Island Headworks Odor Control and HVAC Upgrades, Massachusetts Water Resources Authority (MWRA), Quincy, MA

Provided permitting assistance to MWRA in obtaining permits from the local conservations commission, the U.S. Army Corps of Engineers, and MassDEP. Permits included an updated air permit and NPDES permits for general and construction dewatering.

Aqueduct Connection Environmental Support (ACES), NYCDEP, All boroughs, New York, NY,

Program and Portfolio Coordinator. Hazen Project Manager for the ACES contract, which provided permitting and environmental support for several design contracts associated with DEP's Water for the Future priority program. Through this role, Ms. Hoek served as the technical liaison between the design and environmental contracts to ensure design assumptions are well established, identified and communicated. She also shepherded SEQRA reviews (EAS and EIS submittals) and permits through the regulatory process to keep the distinct source augmentation projects on track, which will allow DEP to remove the Delaware Aqueduct from service for the first time in a century and make critical repairs.

New York City Department of Environmental Protection, Bureau of Water Supply (NYCDEP, BWS), On-Call Contract, New York, NY

Ms. Hoek serves as the Technical Permit Resource Coordinator/Lead for on-call task order contracts for New York City DEP projects. The on-call projects include design and implementation of activities to address dam safety items and improvements to water supply infrastructure. The environmental aspect of this work includes preparation and submittal of applicable federal, State, and local permits as well as Environmental Assessment under SEQRA/CEQR. Ms. Hoek is responsible for permit reviews associated with the on-call projects and provides environmental support and oversight for several projects under the on-call contract.

Catalum SPDES Permit Modification EIS, Ulster County, NY, NYC

For the Catalum EIS, Ms. Hoek is serving as a technical resource and also as liaison to the ARWG, a task force of state and local governments, NYCDEP, and stakeholder and citizen groups working to protect and manage the lower Esopus Creek. The Catalum EIS will evaluate potential impacts to the environment from alum addition under an existing SPDES permit at DEP's Kensico Reservoir, and from releases to lower Esopus Creek made by NYCDEP to manage downstream flows and redirect turbid water out of the City's water supply system.



Annie Winter, ENV SP

Environmental Compliance Documents

Ms. Winter brings 9 years of experience guiding clients through complex environmental permitting challenges, ensuring streamlined environmental reviews and complete permit applications. She has experience coordinating with USACE, NPS, USFWS, NMFS, MDE, DNR, as well as navigating county- and municipal-level regulations and requirements.

Education

MSc, Water Resources Management, UNESCO-IHE Institute for Water Education, HSP-Huygens Scholar

BA, Environmental Studies, University of Pennsylvania

Certification/License

Envision™ Sustainability Professional

Areas of Expertise

- NEPA compliance
- SEQRA/CEQR compliance
- Environmental permitting
- Federal/State/Local consultations
- Environmental planning
- Project management
- Interagency coordination
- Public outreach

Professional Activities

American Water Works Association

New York Water Environment Association

Hollenbeck Park Lake Rehabilitation and Stormwater Management Project, Los Angeles, California:

NEPA/CEQA Lead. The City of Los Angeles Bureau of Sanitation (LASAN) is proposed to rehabilitate and revitalize the Hollenbeck Park Lake - a valuable community asset for the Boyle Heights neighborhood in Los Angeles. This project sets the stage to deliver needed water quality improvements that can benefit the Lake and the downstream 6th Street PARC project and LA River. Hazen is leading the pre-design efforts of this project, as well as the environmental review pursuant to the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA), the latter to support an application for California Department of Transportation (Caltrans) funding. Ms. Winter is spearheading the CEQA/NEPA documentation.

East Side Coastal Resiliency Project (ESCR), NYCDDC, Manhattan, New York

Project Manager. Oversaw EIS, permits and approvals (as part of JV) for \$1.4 billion critical resiliency project to construct and operate an integrated flood protection system along the East River waterfront. Project received HUD Community Development Block Grant – Disaster Recovery (CDBG-DR) funding through innovative Rebuild by Design competition. Ms. Winter coordinated the NEPA/SEQRA/CEQR EIS process, oversees the Clean Water Act permitting with USACE and DEC that required an individual permit, provided technical input to analyses and deliverables, maintained clear channels of communication with multiple City agency stakeholders, and supported the City to maintain ambitious schedule as established by HUD. Prepared two Substantial Action Plan Amendments and coordinated public hearings, presentations, and responses to comments as required by HUD funding.

Soapstone Sewer Rehabilitation Project, DC Water, Washington, DC,

NEPA/Permitting Lead and Deputy PM. Ms. Winter serves as NEPA and permitting lead for various sewer rehabilitation projects throughout the District. She is overseeing the NEPA environmental assessment and permitting associated with repair and rehabilitation of sewer infrastructure located within National Parks Service property. The project requires CIPP lining of existing sewers located within Soapstone Valley Park as well as protection of exposed in-stream assets (pipes, manholes). Responsibilities include close coordination with design efforts, NEPA compliance through the production of high-quality defensible environmental documents, public outreach, regulatory agency coordination, and Clean Water Act permitting (Section 401/404).

Aqueduct Connection Environmental Support (ACES), NYCDEP, New York, New York (2013-2016)

Deputy PM. Deputy project manager for Hazen effort to deliver (EIS) and permitting for complex program to support repair of DEP's Delaware Aqueduct. Program includes construction of a bypass tunnel underneath the Hudson River and augmentation projects necessary to support connection of the bypass tunnel to the Delaware Aqueduct. Specific duties include clear and consistent communication and coordination with NYCDEP, SEQRA/CEQR technical review of reports and deliverables, liaising with designers, and contractual support.

Proctors Creek Wastewater Treatment Plant Master Plan, Chesterfield, VA (2020) (32325-016)

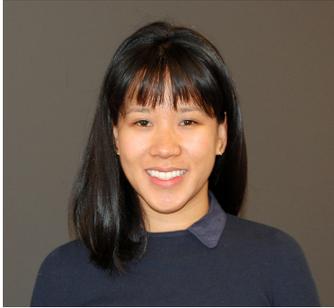
The Master Plan project included asset evaluation, hydraulic evaluation, detailed alternatives analysis with a special focus on nutrient removal options, and a regulatory review. Ms. Winter was responsible for integration of design information into comprehensive, concise, and cogent Master Plan for wastewater treatment facility.

BEPA On-Call: Preparation of Land Use Application and Environmental Assessment Statement (EAS) to Support Lease for DEP Laboratory, NYCDEP BEPA, NY (2018-2019)

Project Scientist. Provided technical project support to prepare and file land use application required for relocation of DEP's laboratory services to new a facility in Brooklyn, NY. Leasing of office space by City agencies is subject to the City's Uniform Land Use Review Procedure (ULURP), which triggers the need for this land use application. This project involved preparing land use application materials and shepherding application through the certification and ULURP public review process in coordination with the New York City Department of City Planning (DCP), the New York City Department of Citywide Administrative Services (DCAS), and NYCDEP. Supported preparation of Environmental Assessment Statement (EAS) for the DEP Lab Relocation project, including development of GIS land use and zoning maps. The leasing of office space by City agencies is subject to environmental review under City Environmental Quality Review (CEQR) and requires the development of an EAS.

Caroline County Rappahannock River Joint Permit Application Planning, Caroline County, VA

Environmental Scientist/Permitting. Caroline County is pursuing a Joint Permit Application (JPA) to withdraw water from the Rappahannock River. The County currently relies on groundwater for water supply, and additional groundwater withdrawals are expected to be limited due to regulations affecting the Eastern Virginia Groundwater Management Area. Unquantifiable adverse impacts are anticipated to anadromous fish as a result of operation of the intake, and consultation with VMRC indicated that mitigation would be required as part of the JPA permit. However, since this ruling has little precedent, coordination and consultation with appropriate institutions and agencies is required to identify appropriate mitigatory actions. Specific responsibilities include close coordination with VMRC, DGIF, USFWS, NOAA-NMFS, VIMS, and VCU to identify appropriate and cost-effective mitigation that will allow for acquisition of permits and approvals as well as preparation of the permit application and review of all associated documentation.



Nicolette Leung, PE, ENV SP, LEED GA

Environmental Compliance Documents

Ms. Leung has 12 years of experience in environmental planning and permitting, as well as stormwater management. She has been integral in multiple projects within New York.

Education

BS, Civil Engineering, University of Virginia

Certification/License

Professional Engineer: NY

Envision Sustainability Professional (ENV SP)

LEED Green Associate (GA)

OSHA 10-Hour Certification

Areas of Expertise

- Environmental planning and permitting
- Stormwater management

Professional Activities

Engineers Without Borders

- New York Professionals Water Environment Federation

Rye Lake Filtration Facility, WJWW, Harrison, NY

Assisted in preparation of environmental review to assess the impacts of construction and operation of a 30-mgd DAF/filtration water treatment facility for the WJWW Rye Lake water source. WJWW is under a New York State Court Order and US EPA Administrative Order to meet enhanced treatment requirements to comply with the New York State Sanitary Code and the US EPA's Surface Water Treatment Rule and Long-Term 2 Enhanced Surface Water Treatment Rule. The project would include a filtration facility, access road, parking lot, utilities installation for water and sewer, and stormwater management features on a 9.6-acre project site. Support included identification of requirements to fulfill New York's SEQRA, development of Full Environmental Assessment Form and supporting documentation, and identification of anticipated government permitting and approvals to advance the project to meet compliance milestones set by the Administrative Order.

Aqueduct Connection Environmental Support, New York City Department of Environmental Protection, New York, NY

Assisted in preparation of a comprehensive environmental impact statement (EIS) to assess the impacts of operational changes to the NYC water supply system, specifically the repair and rehabilitation of the Catskill Aqueduct. Worked with the New York City Department of Environmental Protection (NYCDEP), task leads, and designers to define and apply an organizational structure, language convention, and figure formats to effectively communicate the project description and clearly disclose potential impacts, while meeting CEQR/SEQRA environmental review requirements.

East Side Coastal Resiliency Environmental Planning and Permitting, NYCDEP, New York, NY

The East Side Coastal Resiliency (ESCR) Project will construct an integrated coastal flood risk reduction system for the FEMA-designated 100-year storm flood hazard area, with sea level rise, between Montgomery Street and East 25th Street. Due to its scale and potential for environmental ef-

fects, the ESCR project requires the preparation of an EIS in accordance with NEPA, SEQRA, and CEQR requirements. Specific duties include assisting with EIS preparation, agency and stakeholder coordination, permit applications, and regulatory compliance, including the development of an Action Plan Amendment to meet HUD grant requirements, under a schedule with strict deadlines to meet implementation and funding allocations as established by HUD. The Hazen JV is coordinating extensively with over 25 federal, state, local agencies, and community stakeholders, as well as a team of designers, throughout the environmental review process under an aggressive schedule to provide a means for decision-makers to consider environmental effects along with other aspects of project planning and design. Hazen is leading the permitting process, which involved early and ongoing coordination with regulatory agencies, including the United States Army Corps of Engineers and the New York State Department of Environmental Conservation, to develop streamlined permitting strategies for a wide variety of alternatives. Preliminary identification of required permits and approvals, and disturbance and mitigation plans were developed for the reasonable worst-case design and construction alternative, as design and construction evolved with input from stakeholders.

Catalum SPDES Permit Modification EIS, New York City Department of Environmental Protection, Ulster County, NY

Project Manager. The Catalum EIS will evaluate potential impacts to the environment from alum addition under an existing SPDES permit at Kensico Reservoir, and from releases to the Lower Esopus Creek made by NYCDEP to manage downstream flows and redirect turbid water out of the City's water supply system. Coordinated a team of resource specialists to analyze potential impacts of the releases on natural and built environments along a 30-mile reach of the Lower Esopus Creek under an aggressive Consent Order schedule. Assessments included the analysis of field data, hydraulic and hydrologic models, and desktop studies to evaluate potential impacts to wetlands, hydraulic conditions, stream geomorphology, wildlife, water quality, fish and benthic communities, socioeconomic conditions, and open space and recreation resources. Also ensured the EIS conforms to state and City Environmental Review requirements and coordinated outreach to state officials and a local stakeholder working group.

Zoning Analysis, NYCDEP, New York, NY

Project Manager overseeing the development of a literature review to research and summarize approaches developed and implemented by other municipalities and/or jurisdictions to anticipate and prepare for infrastructure changes to support zoning and redevelopment.

Right of Way Bioswales and Stormwater Greenstreets Design for Newtown Creek Sewersheds, NYCDDC, New York, NY

Performed desktop GIS-based hydraulic analysis of New-town Creek sewersheds to delineate tributary drainage areas within the public right-of-way and to evaluate the required area of green infrastructure for each tributary drainage area. Conducted field walk-throughs to site Right of Way Bioswales and Stormwater Green-streets according to NYCDEP, NYCDOT, and NYCDPR requirements and hydraulic analysis of sewersheds. Developed plan for geotechnical borings and analysis. Performed desktop analysis of potential utility conflicts for ROWBs and SGS. Developed conceptual designs for siting SGS based on site constraints and NYCDEP, NYCDOT, and NYCDPR requirements.

Right of Way Bioswales (ROWBs) and Stormwater Greenstreets (SDS) Design: Gowanus Canal and Newtown Creek Sewersheds, NYCDEP, New York, NY

Assisted with preparation of geotechnical reports detailing sites recommended for survey and construction, as well as overall geotechnical analysis of sewershed. Evaluated potential for on-site green infrastructure on publicly owned parcels and prepare conceptual designs. Performed desktop analysis of potential utility conflicts for ROWBs and SGS. Developed conceptual designs for siting SGS based on site constraints and NYCDEP, NYCDOT, and NYCDPR requirements.



Steven Conner, PE

Booster Station and Well Equipping

Mr. Conner is Hazen's West Region Pump Station Practice Lead, with over 26 years of experience planning and designing water, recycled water, stormwater and sewage pump stations.

Education

B.S., Civil Engineering/Water Resources, University of California, Irvine

Certification/License

Professional Engineer

Transportation Worker Identification Credential (TWIC), California

Areas of Expertise

- Pump station design
- In-depth evaluation of system requirements for proposed new facilities as well as for rehabilitation, upgrade, or replacement of existing pump stations
- Pipeline Design
- Trenchless Pipeline Rehabilitation and Installation
- Planning and design of major water and wastewater facilities

Professional Activities

North American Society for Trenchless Technology, Member

Hydraulic Institute - Effective Pump Intake Design and Troubleshooting Problem Intakes

AWWA

Steel Tank Institute - AWWA D100 Water Storage Tank Seminar

Mr. Conner has been the lead pump station engineer for numerous potable water pump station projects, including the Sterling Pump Station for Western Municipal Water District that is getting ready to be commissioned, the Mojave Water Agency R3 Pump Station, and most recently the Ridgeline Booster Pump Station Retrofit project for Trabuco Canyon Water District. Mr. Conner has expertise in vertical turbine as well as horizontal centrifugal pump design, is well versed in Hydraulic Institute design standards, and has designed many pump stations that have been outfitted with electric motors, natural gas driven engines, VFDs (including watercooled VFDs), and backup generators. Mr. Conner has in-depth technical expertise in pump station hydraulic analyses, system curves development, pump selection evaluation, and surge analyses. Mr. Conner coordinates the technical project aspects of all engineering support disciplines (civil, architectural, structure, chemical process, mechanical, electrical, and I&C) during project planning, design and construction phases.

Ridgeline Booster Pump Station, Trabuco Canyon Water District, Lake Forest, CA

Pump Station Design Lead. The Ridgeline Booster Pump Station (RBPS) is a critical facility within Trabuco Canyon Water District's system. The RBPS is the primary means of delivering water from Dimension Water Treatment Plant (DWTP) to the Harris Grade pressure zone and tanks. The project includes preliminary design, final design, and construction support services for the RBPS Project. The project includes complete replacement of the pumps, piping, valving, pump station site improvements, security, and electrical and controls, and additionally, a building analysis and associated structural and architectural upgrades to accommodate the mechanical and electrical improvements at the site.

El Toro Sewer Lift Station Preliminary Study, Trabuco Canyon Water District, Lake Forest, CA

Performed field assessment and provided recommended upgrades. El Toro Sewer Lift Station (ETLS) is a critical facility within Trabuco Canyon Water District's sewer system. ETLS includes a dual wet well/dry pit configuration with two wet wells and two sets of pumps in series for each wet well. The pumps are two 100-hp pumps in series with both electrical

motors, and engine driven backups. A planning study was performed that recommended complete replacement of piping, valving, site improvements, security, and electrical and controls. Additionally, a building analysis was conducted to identify associated structural and architectural upgrades needed to accommodate the mechanical and electrical improvements.

Glenoaks Pump No. 1 Replacement Project, City of Glendale, CA

Pump Selection QA/QC for preparing the plans, specifications and estimates the replacement of Pump No. 1, a 125 hp, 4160 volt 875 gpm centrifugal pump that has outlived its useful life. The pump was replaced in kind in the Glenoaks Pump Station (2018). The pump serves the 1290 pressure zone in the Glenoaks Canyon area. Pump No. 1 serves the daily flow condition for the 1290 pressure zone. Pump No. 2, a 250 hp, 4160 volt, 2,000 gpm centrifugal pump, which was recently replaced, will serve as the high demand pump. The work included a hydraulic analysis Technical Memorandum used for pump selection and a review of the hydraulic performance of the pumping station. The work also included the engineering services during construction by doing the RFI and Submittal reviews for the City.

Sterling Pump Station, Riverside, CA

Project Manager. Mr. Conner was responsible for developing preliminary design alternatives, plans, specifications, and cost estimates for the construction of a new water pump station to deliver flow from the Arlington Desalter to two separate pressure zones in Western Municipal Water District's distribution system. Preliminary engineering studies included: comprehensive hydraulic analyses of the supply and distribution systems, evaluation of pump station operations, life-cycle cost analyses for alternative configurations of pumps, primary power (natural gas engines versus electric motors), and backup power. The final design included a 1.1 MG partially buried prestressed concrete forebay; a pump station building housing six 700 hp electric motor driven pumps, two 700 hp natural gas engine driven pumps, and motor control center; a chemical building for storage and feeding of sodium hypochlorite and ammonium sulfate; and a diesel driven backup generator to power one electric motor. The pump station is designed for an ultimate capacity of 30 cfs at 450 psi discharge pressure.

Reservoirs 1 & 2, Pumps, Controls and Chemical System Assessment, Mesa Water District, Costa Mesa, CA

Completed an assessment of the condition and operation of the pumps and controls system at two domestic water reservoirs, developed a plan for removal and testing of pumps as well as completed an evaluation of the existing chemical dosing system. Prepared a preliminary design report and 30-percent design plans and specifications to replace the existing chemical feed systems and install new reservoir mixers.

West Napa Pump Station Project, Napa Sanitation District, Napa, CA

Pump Station QA/QC. Project involves increasing the firm capacity of the pump station to 15.4 mgd and address the aging infrastructure such as the seismic condition of the 40-year old existing facility. The existing pump station was congested with little to no room for expansion of pumping capacity. Project elements include a new submersible pump station, new electrical building and infrastructure, chemical injection for corrosion control, odor control, solar panels, demo of the existing pump station and site civil improvements.

Van Vliet Pump Station, City of Chino, CA

Design of an 18 cfs (8,100 gpm) stormwater pumping station for the City of Chino. The pump station is designed to pump peak stormwater flows during rain events, and low flows from the detention pond water quality filter system. The pump station utilizes VFD driven duplex submersible non-clog pumps designed to maintain a constant liquid level in the wet well. VFD pumps were selected for this application to reduce the size of the wet well and number of pumps needed based on pump cycle time calculations.



Tori Yokoyama, PE

Recycled Water Infrastructure

Mr. Yokoyama is experienced in management and design of various types of civil improvements associated with water, wastewater, and stormwater facilities, including piping, grading, paving, drainage, and miscellaneous site civil improvements. His background includes both the design of new facility improvements, as well as rehabilitation of existing facilities. Mr. Yokoyama is a detailed, hands-on engineer that understands how to efficiently move a project forward from start to finish.

Education

B.S. Civil Engineering, Cal Poly
San Luis Obispo

Certification/License

Professional Engineer

Areas of Expertise

- Master Plans
- Hydraulic Modeling
- Pipelines
- Pump Stations
- Reservoirs
- Civil Design

Professional Activities

CA-NV AWWA
OCWA
ASCE

Rubidoux Community Services District PFAS Alternatives Study, Riverside, CA

Project Manager and Civil Design Lead. Due to the proximity to a landfill, the California WaterBoards Division of Drinking Water (DDW) ordered Rubidoux Community Service District (RCSD) to conduct PFAS sampling of groundwater wells. Results from sampling found concentrations above the Notification Level (NL) but below the (former) Response Level in all of the wells. As a result of this finding, RCSD will have one year to install treatment or notify customers of the presence of PFAS in their water. A Basis of Design Report was developed including the evaluation of PFAS treatment alternatives, site layouts, and cost estimates for 4 wells. Project includes assistance during procurement, construction, and permitting.

Chino I Desalter VOC Treatment, Chino Basin Desalter Authority, CA
Civil Design Lead. The project includes preliminary and final design of two (2) GAC treatment facilities (1.7 mgd and 3.4 mgd) at the Chino I Desalter Plant for the removal of TCE and 1,2,3-TCP, and evaluation of treatment requirements for 1,4-dioxanr, cis-1,2-DCE, 1,2-CDA, PFOA, and PFOS. The goal of this project is to provide groundwater treatment for all CDA bypass wells (CDA Wells I-1 through I-4), and several treated wells (CDA I-16 through 18), plus 10 new wells that will be installed by the County of San Bernardino as part of a Cleanup and Abatement Order issued by the Santa Ana Regional Water Quality Control Board (SARWQCB).

Whittier PFAS Treatment Support, Suburban Water System, Covina, CA

Civil QA/QC. Suburban Water System's Whittier and La Mirada Systems required engineering design services to remove PFAS compounds from 5 drinking water wells, comprising 10,600 gpm. Hazen is leading the preliminary design and treatment approach evaluation, sharing process mechanical design with the prime consultant, and leading electrical and I&C. Hazen is also providing support on the design of RSSCT bench-scale testing, and is leading the facility permitting.

La Brea Subarea Groundwater Supply Project – Wells, Transmission Main, and Treatment Facilities, City of Beverly Hills, CA

Mr. Yokoyama is the Project Manager for the City of Beverly Hills La Brea Subarea Groundwater Supply Project. This is a \$50 M project the City is implementing to expand their local water supply by developing groundwater in the La Brea Subarea of the Central Groundwater Basin. The project includes three (3) groundwater wells to be drilled and equipped, 4-miles of raw water transmission main through the City of Los Angeles and Beverly Hills, and upgrade of the City's existing reverse osmosis treatment plant. The first phase of the project which Hazen is leading is the drilling and equipping of the first groundwater well, and construction of the 4-mile transmission main.

City of Chino, Eastside Water Treatment Facility Expansion, Chino, CA

Civil Design Lead. Responsible for site civil and hydraulics for the Eastside Water Treatment Facility Expansion. The project involves retrofitting the existing treatment equipment and building to accommodate an expanded capacity from 3,500 to 7,000 gpm. The treatment process consists of GAC for removal of 1,2,3-trichloropropane (1,2,3-TCP), regenerable ion exchange (IX) for the removal of nitrate and perchlorate, and chlorine gas for disinfection. The project also includes pipelines to convey new source water from two additional wells and a brine line that eliminates the need to store and haul waste brine offsite for disposal.

Plant 30 Wellhead Treatment Design, Montclair, CA

Mr. Yokoyama is the Civil and Pipeline Design Lead for the planning and design of a 4,000 gpm treatment system for Monte Vista Water District. Treatment includes GAC for 1,2,3-TCP and regenerable ion exchange for nitrate and perchlorate. The design includes site civil design and treatment of three wells and off-site pipelines from two wells to the third well site.

Water Master Plan Update and GIS Conversion Project, City of Chino, Chino, San Bernardino County, CA

Project Manager. The City of Chino serves over 12 million gallons per day of potable water to a population of approximately 74,000. Key components of this project include the creation of a GIS geodatabase of the City's potable water distribution system, preparation of a Water Master Plan Report, and completion of a Risk and Resiliency Assessment for compliance with America's Water Infrastructure Act requirements. The Water Master Plan effort includes hydraulic model development and calibration; comprehensive hydraulic analysis of the City's conveyance, pumping, and storage facilities; and development of a prioritized Capital Improvement Program for the planning horizon including preliminary cost estimates.

2019 Master Plan Update, Indio Water Authority, Indio, Riverside County, CA

Technical Advisor. The Indio Water Service Area includes approximately 38 square miles and supplied approximately 17,000 acre-feet of water to approximately 80,000 businesses and residents. Hazen provided professional engineering services for a Water Master Plan Update including development of existing and projected water demands, system capacity evaluation, operational program evaluation, hydraulic model calibration and analysis including water age analysis, and development of a 20-year Capital Improvement Program including project costs and prioritization with interactive dashboard.



Jim DeWolfe, PE, BCEE, CWO

Water Treatment

Mr. DeWolfe has over 30 years of experience in the planning, design, operation, and start-up/commissioning of water treatment systems. As Hazen's Water Treatment Operations Leader he frequently works side-by-side with operations staff to develop and implement training and materials focused on safety and procedures.

Education

MS EnvE, Pennsylvania State University

BS EnvE, Pennsylvania State University

United States Navy Nuclear Propulsion Program Submarine Service

Certification/License

Professional Engineer

Board Certified Environmental Engineer (BCEE)

Certified Waterworks Operator, Class A (PA)

Areas of Expertise

- Water treatment operations and optimization
- Facility commissioning
- Utility management
- Residuals/beneficial use
- Source water protection

Professional Activities

American Water Works Association

- Source Water Protection Technical Advisory Workgroup
- Water Utility Council

Water Works Operators Association of Pennsylvania

Croton Water Filtration Plant (WFP) Startup, New York City Department of Environmental Protection, Bronx, NY

Task Leader responsible for the individual unit and overall process performance during start-up and commissioning of the 290-mgd Croton WFP. The project has unique challenges that include coordination of multiple departments in the client's organization, representation of Design Joint Venture Team in operational changes that serve to verify the design intent of the project. Responsible for training to help assure NY-CDEP staff have a thorough understanding of the unit processes and complex operating strategies associated with coagulation, abbreviated flocculation, stacked dissolved air flotation and filtration (DAFF), and UV disinfection. Developed Consequence Management Plan to help meet FEMA requirements using the National Incident Management System (NIMS). Provided oversight for media installation in all filters, helped coordinate flushing of the New Croton Aqueduct prior to startup, and guided modifications to the residuals discharge permitting locations.

West WTP Preliminary Design Phase, Columbia Power & Water Systems, Columbia, TN

Design of a greenfield surface water treatment plant including coagulation, flocculation, plate settlers, low pressure membranes, GAC, and chlorine disinfection. Responsible for providing operations support, including the preparation of the startup plan

24th Street Water Treatment Plant Comprehensive Performance Evaluation, City of Phoenix, AZ

Senior Operations Specialist responsible for a Comprehensive Performance Evaluation effort using industry standard protocols for the 140-mgd 24th Street Water Treatment Plant. Identified a prioritized list of Performance Limiting Factors relating to administration, design, operations and maintenance. Developed strategies and protocols to address high source water turbidity events.

Chaparral Water Treatment Plant Pretreatment Study, City of Scottsdale, AZ

Provided technical support for process and residuals optimization for the 30-mgd surface water treatment facility of multiple source waters. The project includes design and construction of a 15-mgd pre-treatment facility using CMAR delivery. The existing plant site is constrained on all sides requiring creative approaches to the design and construction phasing.

Physical Security Assessment, Coachella Valley Water District, CA

Technical Expert for evaluating physical security at diverse production, transfer, conveyance, operations center, and well facilities for the District, whose service area covers over 1000 square miles in Riverside County, CA. This included an evaluation of perimeter protection, employee and contractor access, remote detection, and devices to protect assets in secure areas. This effort will help the District not only meet the requirements of AWIA, but also help them standardize and bolster security measures, and help meet strategic goals for greater organizational efficiency and accountability.

Pretreatment Chemical Improvements, Denver Water, CO

Task Leader for operability review of designs for all of Denver Water's drinking water treatment and recycling plants. Efforts help assure that final design and eventual operation will provide the intended purpose and that the eventual constructed systems are commissioned and verified.

E.M. Johnson Water Treatment Plant Filter Surveillance Workshop and Optimization Services, City of Raleigh, NC

Senior Operations Specialist for hands-on staff training at the E.M. Johnson Water Treatment Plant. This training provided staff with the skills to self-perform filter surveillance, which will help them establish process operational targets and procedures to help assure pretreatment and filter operations are continuously optimized. The workshop demonstrated filter surveillance techniques by Hazen personnel, followed by filter surveillance by E.M. Johnson personnel under Hazen staff supervision. Subsequent operational changes by staff have resulted in substantial cost savings and more stable operations.

Operator Training - F. Wayne Hill Water Resource Center, Gwinnett County, GA

Provided training specific to ozone disinfection and biological filtration using GAC filter adsorbers for a highly-advanced wastewater treatment facility with a design capacity of 60 mgd. The treatment facility includes both primary and secondary treatment unit processes that generate residuals that are anaerobically digested and dewatered. Emphasis placed on operations and process variables for optimized operations.

Oak Glen Regional Water Treatment Plant Expansion Project, New Jersey American Water, Howell, NJ

Start-up and Commissioning Technical Expert guiding verification of design intent and optimization of process variables for new DAF system and filters. Project scope included the construction of the \$19.3 million expansion of the facility from 10 mgd to 15 mgd, to accommodate increases in demand through the installation of additional DAF process trains, filters, and finished water pumping capabilities.

Comprehensive Performance Evaluation Services, Colorado Dept. of Public Health and Environment, Denver, CO

Sr. Technical Leader. The statewide contract to conduct Comprehensive Performance Evaluations (CPEs) at 67 water treatment plants in response to facilities not meeting 3-log Cryptosporidium inactivation. Plants included slow sand, pressure filtration, direct filtration and conventional facilities. Responsible for development of work program and QA/QC procedures, direction of field teams, and guidance on database and project website development.



Jerimy Borchardt, PE

Pipelines & Irrigation Ditches

Mr. Borchardt's diverse experience includes planning, design, and construction of multidiscipline projects requiring public outreach, permitting, environmental compliance, traffic control, hydraulics, trenchless technologies, condition assessment, survey and mapping, routing studies (pipeline), cost estimates, construction schedules and coordination of subconsultants.

Education

B.S., Civil Engineering, California State University, Fresno, CA

Certification/License

Professional Engineer

OSHA: 10-hour Construction;
8-hour Confined Space

Areas of Expertise

Pipeline and pump station planning

Large diameter pressure/gravity design

Multi-discipline pump station design

Pipeline and pump station construction management and inspection

Professional Activities

ASCE

Publications/Presentations

Vacuum System Reduces Pump Station Power Consumption – ASCE Pipelines 2014 Conference

San Diego County Water Authority Planning Services for Task 2 – 1st Bifurcation FCF Alternatives Analysis, San Diego County Water Authority, San Diego, CA

Task Lead/Project Engineer. This project includes preliminary alternatives analysis, planning level conceptual design and cost estimates, stakeholder coordination, environmental review and permitting evaluation for 11 bifurcation flow control facilities. Hazen team members completed an extensive alternatives evaluation that included several pipeline isolation alternatives for replacing the 11 existing bifurcations structures as well as identifying additional site improvements including security, treatment, and communications. The pipeline isolation alternatives evaluation included construction cost estimates for each alternative, and a shutdown cost and lifecycle cost evaluation for each alternative to better understand the total cost of implementing each alternative.

San Diego County Water Authority Planning Services for Task 3 - San Diego 5ABC Flow Control Facility Replacement, San Diego County Water Authority, San Diego, CA

Project Engineer. This project includes preliminary alternatives analysis, planning level conceptual design and cost estimates for new facilities and transmission pipelines including stakeholder coordination, environmental review and permitting evaluation of several viable alternatives for replacing the SD 5ABC FCF. The Hazen team identified and recommended the preferred alternative for further evaluation during next phase of preliminary design. In addition, team members completed a hydraulic analyses based on the various flow demand deliveries through the Second Aqueduct system from the Miramar Vent to the Red Cedar Crossover to determine if the higher hydraulic gradients required to operate the 5ABC at velocities exceeding 10 fps and/or the Red Cedar hydraulic constraint is causing the back-up in Miramar vent. Team members collaborated closely with the Water Authority throughout this project using in-person workshops and virtual meetings to review the results and discuss the recommendations during each of the project milestones.

Water Infrastructure Improvement Project, City of Manhattan Beach, Manhattan Beach, CA

Project Manager for the design of replacement distribution pipelines as part of the City's three-year replacement CIP for critical sections within their water distribution network. The design required the re-alignment in congested corridors of most of the nine different pipeline segments that comprised the 8,700 LF of 6- to 8-inch distribution pipe to allow continued residential water service. The project required connection details to existing distribution pipe, ADA compliant sidewalk access ramps, and complete grind and overlay of the 13 streets affected by the pipeline replacements. Close coordination with Department of Drinking Water (DDW) was required to obtain separation waivers in congested pipeline corridors. The 90% design was completed in 5.

Whitewater Erosion Protection Structure Rehabilitation, Metropolitan Water District of Southern California, Los Angeles, CA

Project and design manager for the rehabilitation design of the erosion control structure that protects the dual Colorado River Aqueduct siphon crossing of the Whitewater River. The design included analysis of modeled river flows and the sizing of replacement rip-rap and other reinforcement design elements using U.S. Bureau of Reclamation and Army Corps of Engineer design methods that will mitigate further damage of the remaining structure into the near future and be constructible in an expedited manner. Because of the importance associated with protecting the Aqueduct siphons and facilitation advertisement, bidding, and construction of the rehabilitation in later the same year, the \$125,000 design duration was only one and a half months long and required weekly design reviews by the multiple departments within Metropolitan.

MWRA Section 53 and 99 Pipeline Improvements Design and Engineering Services During Construction, Massachusetts Water Resources, Boston, MA

Project Engineer. This project includes preliminary design, final design, and engineering services during construction for approximately 11,500 feet of 48-inch-diameter to 68-inch-diameter pipeline to improve the hydraulic capacity and reliability of the Water Authority's Northern High-Pressure zone by rehabilitating existing pipe and/or installing new pipeline sections that will be connected to the Sections 53 and 99 water system. Hazen team members performed comprehensive pipeline alternatives routing analysis, hydraulic analysis of proposed alternatives, preliminary design, pipeline condition assessments, construction cost estimates, and defensible final design contract documents and engineering services during construction for three large diameter water transmission pipelines which will be constructed under three (3) separate construction contracts.

Upper Main Canal Enclosure Project, The West Side Irrigation District, Tracy, CA

Project Manager and Construction Manager for the construction of three double 42-inch culvert pipe crossings totaling 1,200 LF and included demolition of existing culverts and construction of new inlet and outlet cast-in-place concrete structures. As the Owner's representative provided construction oversight and construction management including coordination between Design Engineer, Contractor, Owner, City of Tracy, and materials testing representatives. Construction was completed on a fast track schedule over one month to allow for the beginning of irrigation season.

Old River Pipeline and Canal 45 Turnout Project, Byron Bethany Irrigation District, Byron, CA

Project and Design Manager for 45 cubic feet per second (cfs) turnout from Contra Costa Water District's 78-inch diameter Old River Pipeline (ORP) to Byron Bethany's Canal 45. The project includes connection to the ORP including dual isolation valves and concrete access vault, below grade welded steel pipe, below grade flow control/pressure reducing valve vault with SCADA control, and discharge structure with in Canal 45 with rip-rap lined canal for erosion protection. The project required close coordination with Contra Costa Water District to protect this important pipeline and for installation of ORP-to-turnout isolation valve during routine ORP maintenance activities.



Everette Knight, PE

Reservoirs/Sediment Removal

Mr. Knight is an expert in water resources, stormwater management, hydrologic and hydraulic modeling and analysis, and related civil works design. His experience includes both public and private projects on the design and permitting of several dam facilities.

Education

MSCE, North Carolina State University

BSCE, North Carolina State University

Certification/License

Professional Engineer

Areas of Expertise

- Water resource facilities planning and design
- Dam and reservoir design and construction
- Dam inspections and safety assessments
- Development of emergency action plans and long-term maintenance plans for dams
- Urban storm water management

Professional Activities

Association of Dam Safety Officials

American Water Works Association

CAT 212 C Schoharie Reservoir Low Level Outlet, NYCDEP, NY

Lead Project Engineer responsible for the CAT 212 C project which entailed the design of a 9' diameter LLO, a gate shaft, intake, control and guard valves, two wheel mounted gates as well as new building facilities. Portions of the work were based upon physical modeling that served as a basis of design for the energy dissipation hood located immediately downstream of the two 78" fixed cone valves. In addition to the infrastructure improvements, this project required the coordination of more than 40 permit updates through NYSDEC, NYSDOT, NYSOPRHP, NYCP-DC, NYCDEP, USFW and the COE; provisions for a low flow release and low flow channel to support habitat; design concepts to avoid impacts to USFW identified endangered species; conceptual designs for permitting anticipated work efforts within a DEP water supply reservoir; and reservoir modelling to evaluate the effects of water temperature on receiving streams during predicted withdrawals at both the STIC and LLO intake. Detailed air quality and noise studies were prepared to define site limitations and equipment performance requirements during construction. An updated SWPPP and revised Joint Permit Application were also part of the CAT 212 C project.

Esopus Creek Study, NYCDEP, Ashokan, NY

Project Engineer. Assisted with an evaluation of potential impacts to the lower Esopus Creek associated with releases from the Ashokan Reservoir. The project characterized a range of potential hydraulic, environmental, and economic impacts downstream and provide a baseline analysis of conditions in the lower Esopus Creek to better understand the potential impacts associated with future releases under the Interim Ashokan Release Protocol. This work included extensive involvement and coordination amongst multiple resource specialists, regulatory bodies, local municipalities, stakeholder groups and the public.

Technical Publications and Presentations

Knight, E.H., Chase, E., Mielke, R., Glodkowski, L. *Design, Manufacture and Microtunnel Construction Using Wet Retrieval of the 108-inch Diameter Low Level Outlet at NYC's Gilboa Dam*, ASCE Pipelines Conference, 2018.

Knight, E. H, Chase E, Vickers J, *Gilboa Dam-Planning and Design of A New Low Level Outlet*, National Dam Safety Conference 2013.

Knight, E.H. *UNC Intramural Field #3 Stormwater Collection & Reuse*, National LID Conference, 2007.

Knight, E.H. *Practical Considerations of Pervious Pavement Design and Construction in Piedmont Soils: Friday Center Park and Ride Lot, Low Impact Development New and Continuing Applications*, ASCE Journal Article, 2007.

Malcom, H.R. and Knight, E.H. *Volume Control for Stormwater Runoff*, AWWA Resources Conference, 1999.

CAT 211 - Gilboa Dam and Schoharie Reservoir Improvements, Schoharie County, NY

The CAT 211 project concerns improvements to the Gilboa Dam and Spillway, improvements to the STIC and the addition of a new Low Level Outlet (LLO). A site preparation and restoration phase is also part of the project. Mr. Knight has served as a project engineer responsible for the CAT 212 C project which entailed the design of a 9' diameter LLO, a gate shaft, intake, control and guard valves, two wheel mounted gates as well as new building facilities. Portions of the work were based upon physical modeling that served as a basis of design for the energy dissipation hood located immediately downstream of the two 78" fixed cone valves. In addition to the infrastructure improvements, this project required the coordination of more than 40 permit updates through NYSDEC, NYSDOT, NYSOPRHP, NYCPDC, NYCDEP, USFW and the COE; provisions for a low flow release and low flow channel to support habitat, design concepts to avoid impacts to USFW identified endangered species, conceptual designs for permitting anticipated work efforts within a DEP water supply reservoir; and reservoir modeling to evaluate the effects of water temperature on receiving streams during predicted withdrawals at both the STIC and LLO intake. Detailed air quality and noise studies were prepared to define site limitations and equipment performance requirements during construction. An updated SWPPP and revised Joint Permit Application were also part of the CAT 212 C project.

Lake W-1, Research Triangle Foundation of NC, Research Triangle Park, NC

Project Engineer. Responsible for the spillway and embankment design for a new small hazard dam prepared in accordance with NCDENR Land Quality-Dam Safety. The project required detailed hydraulic analysis and coordination of the regulatory review with all local, state and federal officials, including a CLOMR from FEMA. The project required accelerated permitting and construction schedules to locate and construct the new 22-acre lake. The project also involved preparation of mitigation plans and environmental permitting through NCDNR-DWQ and the Corps of Engineers.

Lake W-5 LOMR, Research Triangle Foundation of NC, Research Triangle Park, NC

Project Engineer. Responsible for conceptual planning and design of a new 50-acre lake that serves as a water quality protection facility and visual amenity to the Southern Research Triangle Park. The project involved preparation of mitigation plans and environmental permitting through NCDENR-DWQ and the Corps of Engineers. The spillway and embankment were designed in accordance with NCDENR Land Quality-Dam Safety. Detailed hydraulic analysis involved the use of ICPR, HEC-2, and HEC-1, for preparation of documents for review of a CLOMR and LOMR by FEMA.



Christopher Ramo, PE, PMP

Reservoirs/Sediment Removal

Mr. Ramo is an environmental engineer with experience in many facets of water and wastewater infrastructure and conveyance-related projects.

Education

ME, Civil Engineering, The Cooper Union

BS, Environmental Engineering, Columbia University

BA, English, Columbia, University

Certification/License

Professional Engineer

Areas of Expertise

- Project Management and Lifecycle Control
- Technology Assessment
- Permitting
- Environmental Assessment
- Cost Estimating

Professional Activities

New York Water Environment Association (NYWEA)

His experience includes project management and controls, planning, design, technology assessment, facility inspection and assessment, permitting, health and safety, sampling and monitoring programs, environmental assessment, and cost estimating.

Rehabilitation of Shandaken Tunnel Intake Chamber, NYCDEP, New York, NY

Project Manager. Rehabilitation of the nearly 100-year old Shandaken Tunnel Intake Chamber water diversion structure at Schoharie Reservoir within the Catskill Water System. Project components include replacement of flow control gates and assemblies, renovation of the operating and office sections of the chamber's superstructure, and general site civil and structural improvements. Responsibilities include leading and overseeing evaluation, design, permitting and environmental assessment activities; coordinating mechanical, civil, structural, electrical, plumbing, HVAC, instrumentation and architectural disciplines; scheduling and coordination between NYCDEP, subconsultants, joint venture partners, and permitting agencies; and ensuring that project schedule milestones and QA/QC standards are upheld. Design was developed to keep the facility partially operational during the rehabilitation work.

Reconstruction of Gilboa Dam and Associated Facilities, NYCDEP, New York, NY

Project Engineer. Responsible for project controls management, including scope management, schedule management and forecasting, budget management and forecasting, progress and performance measurement, risk assessment and management, and quality assurance/quality control for the facility planning, design, procurement and design services during construction for the design services during construction for the reconstruction of Gilboa Dam and installation of Low Level Outlet.

Catskill Turbidity Control Study, NYCDEP, New York, NY

Project Engineer. Assisted in developing conceptual design and evaluating structural and operational turbidity control measures in Schoharie and Ashokan Reservoirs. Responsibilities included design drawing review, value engineering review, and investigation of necessary permits, and preparation of reports, technical memoranda, and presentations. Project won a first-place NYACE Environmental Excellence award.

Gilboa Dam Emergency Work, NYCDEP, New York, NY

Project Engineer. Performed survey of Old Esopus Creek flood plain to assess the effect of diverting up to 600 mgd from the West Basin of Ashokan Reservoir. Water had not released from the West Basin, except in the event of an emergency, and the stream had not experienced flows of that magnitude since the reservoir was built. Also assisted in stream monitoring and geomorphologic assessment during diversions. Project won a first-place NYACE Environmental Excellence award.

Design Services for Operations Support Tool (OST), NYCDEP, New York, NY

Project Engineer. Implemented and participated in project controls procedures management, including scope management, schedule management and forecasting, budget management and forecasting, progress and performance measurement and risk assessment and management for the development of the OST decision support system for the NYC water supply system that integrates multiple sources of critical near real-time operations data into an advanced OASIS-W2 water supply-water quality model to: allow operators to conduct short-term simulations that examine on a daily basis near real-time conditions in the reservoirs and tunnels, evaluate the potential water supply and water quality impacts of alternative operational strategies (“what-if” scenarios), and develop and document reservoir diversion and release plans that balance water quality, water supply and environmental objectives; and provide DEP with an analytical/modeling platform that may be used and expanded upon to conduct long term simulations to support a variety of planning and analytical needs.

Catskill-Delaware Ultraviolet Disinfection Facility, NYCDEP, New York, NY

Project Engineer. Responsible for developing, implementing and managing project controls, including scope management, schedule management and forecasting, budget management and forecasting, progress and performance measurement and risk assessment and management for design services during construction in the construction of the Catskill-Delaware Ultraviolet Disinfection Facility at Eastview.

Long Term Groundwater Monitoring Water Program, Loudoun Water, Ashburn, VA

Project Manager. Responsible for developing, implementing and managing project controls, including scope management, schedule management and forecasting, budget management and forecasting, progress and performance measurement and risk assessment and management for the planning and implementation of a groundwater monitoring program to assess the recharge and water quality characteristics of a potable groundwater source, and redevelopment of existing wells to increase water supply capacity.

Goose Creek Emergency Pipeline Installation, Loudoun Water, Catoclin, VA

Project Manager. Responsible for managing the fast-track assessment and design for an emergency 800-foot long HDPE pipeline crossing the Goose Creek Reservoir to connect the reservoir’s existing pump station with a newly constructed transmission main that provides raw water to the Trap Rock Water Treatment Plant and bring the reservoir online as an interim emergency water source until the long-term back-up quarry reservoirs are completed. Christopher manages a diverse team of experts to rapidly develop and install the 30 MGD emergency pipeline. Major challenges include the execution of a water-based boring program on a drinking water reservoir, unique technical analysis and design for a submerged non-buried pipeline, and development of a pro-active regulatory engagement plan to keep the project on schedule.

Penderwood No. 3 Ground Water Storage Tank Rehabilitation, Fairfax Water, Fairfax, VA

Project Manager. Responsible for management the structural inspection and rehabilitation design of an aboveground 2.4-million-gallon water storage tank. The rehabilitation work included addressing structural deficiencies, removal of lead paint, recoating, and provision of new instrumentation and control and electrical equipment.



Hallie Thornburrow

Hydraulic Analysis

Ms. Thornburrow has over seven years of hydraulics and hydraulic modeling experience for drinking water, wastewater and conveyance projects.

Education

MS, Civil Engineering, McGill University, Montreal, Quebec, Canada

BS, Civil Engineering, Minor in Environmental Engineering, McGill University, Montreal, Quebec, Canada

Areas of Expertise

- Hydraulics / Conveyance
- Computational Fluid Dynamics Modeling
- Water / Wastewater Design

Publications

Co-author, A Headworks Divided – Fighting Extreme Flows to Maximize Water Reuse in Southern California, WEFTEC, 2019

Poster Presenter, Hydraulic Efficiency Analysis of Contact Basins Using Computational Fluid Dynamics, AWWA Water Quality Technology Conference, 2018

Primary Author, Computational Fluid Dynamics Modeling of a Roman Dropshaft, 37th IAHR World Congress, 2017

She specializes in Computational Fluid Dynamics modeling to evaluate hydraulic performance of existing facilities and predict performance and impacts of proposed designs and retrofits. She has four years' experience working in water/wastewater treatment, conveyance design, stormwater and rehabilitation projects throughout Southern California. Ms. Thornburrow's expertise ranges from planning projects, preliminary and final design and construction management services. Ms. Thornburrow has Project Management experience in leading multidisciplinary design projects and comprehensive experience in project Quality Control.

Northeast Water Purification Plant Expansion, City of Houston, Houston, TX

Lead hydraulic modeler for the preliminary design phase for water treatment plant expansion from 80 mgd to 400 mgd. This effort including performing a Comprehensive Fluid Dynamic analysis of several treatment facilities including the chlorine contact basin, Ozone, and rapid mix basins and flocculation and sedimentation. These models were used to analyze mixing performance, residence time, flow distribution and recirculation zones. Ms. Thornburrow performed many of these analysis and evaluated the results to modify the proposed design configurations to improve overall facility performance. Ms Thornburrow contributed to the geometry development, meshing and postprocessing of the CFD models, she also supported the manager with staff and resource management. (2017)

Rio Vista WTP Clearwell Baffle Evaluation, Newport Beach, CA

For this project, CFD was used to yield contact time and baffle factor for each design in order to optimize the performance of the clearwell. Results of this study will be used as a redesign of the baffle wall configuration of the reservoir. Ms Thornburrow produced the various models from the designs provided by the client and used the results to perform a residence time distribution analysis in order to produce the baffle factor for each model. I also created velocity path lines for qualitative analysis purposes. She was responsible for creating the draft memo presenting background information on the project and results of each design configuration. (2014)

Advanced Water Treatment Plant Design Build, DC Water, Washington DC

During construction phase of this project, some changes were made to the effluent piping which required a re-examination of the hydraulic model to determine the associated hydraulic impacts. Ms. Thornburrow performed a CFD analysis to analyze the headloss through the chlorine contact tank. Once the configuration was established Ms. Thornburrow used this new model to optimize the location and orientation of the Bisulfite Mixing equipment to ensure the mixing criteria was met.

City of Evanston, Proposed Evanston Treated Water Storage Configuration.

Ms Thornburrow performed a CFD analysis to evaluate the performance of the existing structure and proposed retrofits within the existing structure footprints. The flow patterns through the clearwell model were visually analyzed to identify any dead zones to create the new retrofit designs. Once the proposed design models were created an analysis was performed to predict the baffle factor (t_{10}/HRT) for each alternative. This information was used to quantitatively evaluate the new proposed alternatives.

Upper Occoquan Service Authority, Ozone Biofiltration Evaluation, Fairfax County, VA

Ms. Thornburrow was the lead hydraulic modeler for the CFD evaluation of the O₃-zone treatment facility design. The evaluation was performed during the preliminary design phase to analyze the performance impact the baffle plates and to optimize their placement.

Backwash Modifications Design, City of Arlington, TX

Ms .Thornburrow served as the lead CFD modeler for a Backwash Modification project. A CFD evaluation was used to analyze the hydraulic performance existing backwash inlet piping configuration and create a piping redesign to address the known distribution issue across the filter inlet media.

Project No. P2-122 Headworks Modifications at Plant No. 2 for GWRS Final Expansion, Orange County Sanitation District, Huntington Beach, CA

Ms. Thornburrow provided both technical and management efforts to the support the headworks modification design efforts at the existing 340 mgd headworks facility, to support the Ground Water Replenishment System Expansion Project in Orange County. The major project elements included pump installation and modifications, gate installations, and new yard piping. Ms. Thornburrow's responsibilities included preparing monthly progress reports, design memos, preparing design calculations, developing specifications, developing design redlines and attending and preparing both technical and PM meeting materials, maintaining and updating project logs and facilitating the QAQC process. Her technical focus on this project included designing the sidestream diversions at the plant, developing the hydraulic design criteria, and supporting the diversion approach design which included a temporary full plant bypass during construction although, the design approach was modified to avoid the bypass and ultimately reduce the project risk. Ms Thornburrow was the lead hydraulic modeler on the project and completed a CFD analysis of the Bar Screen Influent Channel and Influent Pump Discharge Channel to analyze downstream flow distribution and flow dead zones. She also supported the planning and execution of many large-scale field tests on the operating headworks, including the reprogramming of the main-sewage pumps to facilitate overspeeding and the shutdown of the Grit Basin Effluent Channel. During the construction management phase of the project her responsibilities included reviewing contractor's submittals, responding to RFIs and performing site visits.



Alan Mlakar, PE

Electrical and I&C

Mr. Mlakar has over 8 years in the Water/Wastewater industry. He specializes in electrical and instrumentation design, electrical system studies, and engineering services during construction. This encompasses knowledge of electrical distribution systems, motor control centers, programmable logic control (PLC), process control related to water, wastewater and power projects.

Education

B.S., Electrical Engineering,
California Polytechnic State
University, California

Certification/License

Professional Engineer

Areas of Expertise

- Electrical System Studies
- Electrical/Instrumentation and Control Systems
- Water and Waste Water Facility design
- Engineering services during construction

Professional Activities

IEEE

Chino I Desalter VOC Treatment, Chino Basin Desalter Authority, CA

The project includes preliminary and final design of two (2) GAC treatment facilities (1.7 mgd and 3.4 mgd) at the Chino I Desalter Plant for the removal of TCE and 1,2,3-TCP, and evaluation of treatment requirements for 1,4-dioxanr, cis-1,2-DCE, 1,2-CDA, PFOA, and PFOS. The goal of this project is to provide groundwater treatment for all CDA bypass wells (CDA Wells I-1 through I-4), and several treated wells (CDA I-16 through 18), plus 10 new wells that will be installed by the County of San Bernardino as part of a Cleanup and Abatement Order issued by the Santa Ana Regional Water Quality Control Board (SARWQCB).

Plant 30 Wellhead Treatment Final Design, Monte Vista Water District, Montclair, CA

Hazen provided design services to Monte Vista Water District (MVWD) for the design and construction of a 5.8 MGD water treatment facility (expandable to 8.7 MGD) for the removal of 1,2,3-TCP, DBCP, nitrate, and perchlorate from the District's groundwater supply. The project includes raw water pipelines to convey multiple wells to the site, GAC+IX treatment facilities, and waste brine pipeline all within a small site footprint. Hazen's engineering services include preparation of Basis of Design Report (BODR), filed investigations, detailed design, CEQA, permitting, bidding services, engineering services during construction, and construction management.

Water Treatment Plants for Stations 7 and 11, Lemoore, CA

Lead Instrumentation and Control for the City of Lemoore Stations 7 and 11 Water Treatment Plants. Hazen, in partnership with Filanc Construction, was selected by the City of Lemoore to provide progressive design

build services for two groundwater treatment plants. The groundwater has been impacted by iron, manganese, ammonia, sulfides, color, turbidity, arsenic and high TOC concentrations forming elevated DBPs in the presence of chlorination. Sixty percent design was completed in sixty days in order to assist Filanc with preparing the guaranteed maximum price (GMP). Final design proceeded in August 2019 with construction scheduled to commence at the end of 2020. Hazen is providing engineering design and services during construction and startup.

Whittier PFAS Treatment Support, Suburban Water System, Covina, CA

Electrical and I&C Lead. Suburban Water System's Whittier and La Mirada Systems required engineering design services to remove PFAS compounds from 5 drinking water wells, comprising 10,600 gpm. Hazen is leading the preliminary design and treatment approach evaluation, sharing process mechanical design with the prime consultant, and leading electrical and I&C. Hazen is also providing support on the design of RSSCT bench-scale testing, and is leading the facility permitting.

Santa Clara and Honby Wells PFAS Groundwater Treatment Improvements, Santa Clarita Valley Water Agency, Santa Clarita, CA

Electrical and I&C Support for the preliminary and final design of the Ion Exchange (IX) treatment system (3.5 MGD) for removal of PFOS/PFOA from Santa Clara and Honby Wells. The project includes preparation of final design documents, 3D model of the treatment system, hydraulic analysis of well pumps, cost estimates, permitting, bid assistance, and engineering services during construction.

E-Wells PFAS Groundwater Treatment Improvements, Santa Clarita Valley Water Agency, Santa Clarita, CA

Electrical and I&C Support for the preliminary of the Ion Exchange (IX) treatment system (7.0 MGD) for removal of PFOS/PFOA from E-Wells (E-14, E-15, E-16, and E-17). The project includes preparation of preliminary design of the treatment system, site layouts, 3D model of the treatment system, hydraulic analysis of well pumps, and cost estimates.

Delta Plant Improvements for PFAS Treatment, City of Monterey Park, CA

Lead Electrical and Instrumentation Engineer. Hazen, in partnership with Filanc Construction, is designing and constructing a GAC treatment system for PFAS in the groundwater for a flow of 7,500 gpm. The pretreatment system consist of cartridge filters and chlorine is added to the treated water for disinfection. The groundwater is impacted by 1,4-dioxane and an UV-AOP system was implemented by the team in a previous phase of the project.

Well #26 and Raw Water Transmission Main Design, City of Goodyear, Goodyear, AZ

Lead Electrical and Instrumentation Engineer for the City of Goodyear Well #26 and Raw Water Transmission and Main design project. This \$1.9M project is a design-build project for the installation and equipping of Well #26, raw water transmission main, and design modifications to the 3 MGD Bullard Water Campus to treat an additional 1.5 MGD of flow.

Moreno Valley RWRf Solids Handling MCC Replacement East Municipal Water District, Riverside County, CA

Lead Electrical for the Solids Handling MCC Replacement Project which includes the replacement for four motor control centers that have exceeded their rated useful life. The project also included a condition assessment of the existing motor control centers which required a shutdown of the plant equipment during non-peak hours and also a detailed maintenance of plant operations plan to minimize plant distributions during construction.



Gregg Cummings, PE

Construction Management and Site/Civil

Mr. Cummings has over 34 years of experience in the planning, design, and construction support of water, wastewater, and recycled water projects, utility upgrades, groundwater treatment systems and soil remediation systems. An accomplished project manager, he provides technical and management capabilities to work in collaborative settings involving complex projects and community interests. He has managed a wide variety of projects from initial planning, through design, construction and operation.

Education

M.S., Environmental/Structural Engineering, San Jose State University

B.S., Civil Engineering, University of California, Berkeley

Certification/License

Professional Engineer

Areas of Expertise

- Water treatment, storage, and distribution
- Wastewater collection, treatment, and disposal
- Recycled water treatment, storage, and distribution
- Stormwater planning and design
- Utility assessment and planning

Professional Activities

American Society of Civil Engineers

American Water Works Association

Chi Epsilon

Project Management Institute

Toastmasters

Water Environment Federation

Senior Technical Reviewer, Vallejo Wastewater Treatment Plant Master Plan, City of Vallejo, CA

Provided senior technical quality control review for the Vallejo WWTP Master Plan.

Wastewater Treatment Capacity Evaluation, Confidential Client, Kern County, CA

Task Manager for the evaluation, including cost estimating, for expanding a wastewater treatment system to accommodate increased flows from an industrial facility.

As-Needed Wastewater and Stormwater Services, San Francisco Public Utilities Commission, San Francisco, CA

Assistant Contract Manager for providing as-needed wastewater and stormwater services for SFPUC. Currently managing multiple task orders, including for providing information systems support, coding PG&E standards, review and improvement of new sewer laterals, and sewer related claims and emergency operations. Also task manager for providing developing Wastewater and Stormwater Utility Standards, including developing a Design Guidance manual, standard specifications, and standard details for the SFPUC collection system (combined and separate systems), and reviewing and summarizing sea level rise collection system design standards at similar utilities.

Wastewater and Stormwater Utility Standards Phase 2, San Francisco Public Utilities Commission, San Francisco, CA

Task Manager for developing Wastewater and Stormwater Utility Standards, including develop a Design Guidance manual, standard specifications, and standard details for the SFPUC collection system (combined and separate systems). Also reviewed and summarized sea level rise collection system design standards at similar utilities.

Wastewater Treatment On-Call, Las Gallinas Valley Sanitary District, San Rafael, CA

Assistant Contract Manager for as-needed wastewater treatment assistant. Task Manager for four task orders related to reviewing a pump station cost estimate, evaluation algae control devices for controlling algae within an effluent pond, evaluating the performance of an ultraviolet disinfection, and evaluating capacity issues for a wastewater pump station and pipeline.

Flow Equalization System Design, Las Gallinas Valley Sanitary District, San Rafael, CA

Project Manager for the design of a flow equalization system to equalize flow downstream of the primary clarifiers in order to eliminate blending of primary and secondary effluent. Also performing desk top evaluations for the headworks and primary clarifiers.

Disinfection Improvements at the Laguna Treatment Plant, City of Santa Rosa, Santa Rosa, CA

Task Manager for the Civil Site Design and Yard Piping Design related to the design of disinfection improvements at the 67-mgd Laguna Treatment Plant. The scope of work includes upgrade of the existing ultraviolet disinfection system to treat the entire 67-mgd plant flow, addition of a sodium hypochlorite system for disinfection of a side effluent stream and construction of a diversion pipeline to return off-spec water to the head of the plant.

West Napa Pump Station, City of Napa, CA

Provided senior technical quality control review for the design to increase the firm capacity of the wastewater pump station to 15.4 mgd and address the aging infrastructure such as the seismic condition of the 40-year old existing facility. Project elements include a new submersible pump station, new electrical building and infrastructure, chemical injection for corrosion control, odor control, solar panels, demo of the existing pump station and site civil improvements.

Skyfarm 'A' and Hansford Court Lift Station Reconstruction, City of Santa Rosa, CA

Provided senior technical quality control review for the design for reconstruction of two of the City of Santa Rosa's wastewater lift stations destroyed in the 2017 Tubbs fire. The reconstruction included replacement of existing lift station structures, pumps, electrical service, and associated electrical, mechanical and control components along with provisions for temporary pumping and power to provide uninterrupted wastewater service to the surrounding residents. Since these lift stations were destroyed as part of a natural disaster, the design also required collaboration and coordination with the City and FEMA to comply with federal funding requirements.

Twelve Mile Creek Wastewater Treatment Plant Operation and Maintenance Manual, Union County, NC

Provided senior technical quality control review for 12 Mile Wastewater Treatment Plant Operation and Maintenance Manual.

Laura A. Tanaka, CAC, Lead Certified

Principal Environmental Scientist

Ms. Tanaka has 30 years of wide ranging and diverse experience in environmental consulting and management. Ms. Tanaka's experience includes:

- Regulatory Agency Experience – Ms. Tanaka has project management experience working with regulatory agencies which include the Department of Toxic Substances Control, Regional Water Quality Control Boards, Air Pollution Control Districts including the South Coast Air Quality Management District, as well as local county agencies such as the Orange County Health Care Agency and Los Angeles County, Department of Public Works, and agencies located in central and northern California.

Ms. Tanaka was instrumental in the development of the Converse's standard report and proposal formats for Phase I and II ESAs, Transaction Screens, Asbestos, Lead, and Fungal assessments, which has been implemented throughout the corporation. Ms. Tanaka also developed and implemented the use of various report checklists and spreadsheets for consistency in the QA/QC report review process and project budgeting. Ms. Tanaka is currently responsible for the day to day activities of the Costa Mesa environmental office and she is also the client manager of some of Converse's established public and private clients.

Relevant Experience

Ms. Tanaka's client base and associated management skills are diverse and include:

- Local Municipalities – cities and counties
- Utilities and Transportation Authorities
- School Districts; Public and Private Colleges
- Financial Institutions
- Transportation Agencies
- Real Estate Developers and Management Companies
- Aerospace Industry
- Private Property Owners

Phase I and II Environmental Site Assessments

Ms. Tanaka has conducted and managed thousands of Phase I and II Environmental Site Assessments (ESAs), and Transaction Screen Process (TSP) reports for a variety of clients and properties. She has assessed a variety of properties, including agricultural, residential, commercial, and industrial properties. Properties under assessment have been located in various counties in California from Sacramento County to San Diego County. Ms. Tanaka has also completed assessments and audits in the states of Arizona, Oregon, New Mexico, and Washington. Ms. Tanaka's Phase I and II experience includes:

EDUCATION

- BS, Biology, California State Polytechnic University, Pomona, 1987

REGISTRATIONS/CERTIFICATIONS

- Cal/OSHA Asbestos Consultant, No. 11-4708
- CDPH Lead Inspector/Assessor, Project Monitor, and Designer, No. 3086
- Manufacturer's Certification in the use of the RMD, EDAX, and Niton XRF devices
- 40- Hour OSHA Safety Training
- 8- Hour OSHA Supervisor Training

AFFILIATIONS

- Commercial Real Estate Women-Orange County

AREAS OF EXPERTISE

- Phase I and Phase II Environmental Site Assessments
- Asbestos, Lead-Based Paint, Mold Surveys, Fungal and IAQ
- Preliminary Endangerment Assessments
- Removal Action Workplans
- Hazardous Materials Management
- Health and Safety Compliance
- Indoor Air Quality
- Permitting and Regulatory Compliance
- Consultation



Laura A. Tanaka, CAC, Lead Certified

Principal Environmental Scientist

- Completed and managed Phase I ESAs on residential and light industrial properties for inclusion in an Environmental Impact Report regarding a master development plan for a private university.
- Properties assessed have included parcels as small as temporary construction easements to undeveloped land as large as 3,000 acres. Unique properties that have been assessed by Ms. Tanaka have included a football stadium for a private university in the city of Los Angeles; a research facility and residential complex on an island off the coast of California; an art museum in the city of Pasadena; and a lake in San Bernardino County.
- Corridor and area studies for transportation authorities, municipalities and a private university. Ms. Tanaka has assessed over 100 miles of corridors for utility and transportation planning including Metro Rail Red Line, Metropolitan Water District Inland Feeder Project and Reclaimed Water Pipeline, and "Rails to Trails" projects. She has also assessed over 3-miles of a railroad alignment and easements in Orange County, and multiple city blocks occupied by residential and commercial properties and medical facilities/hospitals. Subsequent Phase II activities identified elevated levels of total petroleum hydrocarbons and metals in the soil along the railroad alignment due to historical property uses. Subsequent remedial efforts have included the excavation and disposal of arsenic and lead impacted soil, as well as asbestos debris.
- Management experience has included identification and assessment of historical dump areas (including burn-ash), abandoned oil wells, historical agricultural uses, historical underground storage tanks, dry cleaning facilities and industrial uses. In addition to drilling and sampling experience, Ms. Tanaka's Phase II work has also included the management of geophysical surveys to locate utilities, oil wells and underground storage tanks. Ms. Tanaka's Phase II experience includes the generation of proposals which comply with DTSC PEA sampling protocols; drilling and sampling soil and groundwater and soil gas surveys using tracer gases. Chemicals of concern that have been assessed include hydrocarbons, solvents and other volatile organic compounds, semi-volatile compounds, metals including hexavalent chromium, PCBs, and asbestos.

Ms. Tanaka's IAQ assessments and sampling experience has pertained primarily to commercial buildings and hospital settings. Her experience relates to sewer gas odors, sewer water, dust and airborne particulates, and general IAQ parameters. Sampling has been conducted over time frames as short as one working day to a timeframe of two weeks. Ms. Tanaka has experience with various IAQ sampling equipment which has the capability of data logging over a long timeframe. Examples of projects include:

- Broken fire sprinkler lines in a retail store.
- Clogged plumbing systems which impacted restrooms and exterior fountains at a shopping center.
- Sewer and plumbing issues at day care facilities.
- Unknown odors in a hospital and an office building.
- Monitoring for ultra-fine particles in critical areas of a hospital.



Mark B. Schluter, PG, CEG, CHG

Senior Engineering Geologist

Mr. Schluter has 42 years of experience in applied engineering geology, hydrogeology, and geotechnical engineering. Mr. Schluter has been with Converse for 41 years. As a senior engineering geologist, he has conducted a wide range of geotechnical studies for dams, reservoirs, pipelines, pump stations, treatment plants, power substations, transmission lines, bridges, highways, mass transit projects, landslides, hospitals, colleges, schools, commercial buildings, residential developments and groundwater studies for projects throughout California and Nevada.

Mark has conducted and managed infrastructure and development projects encompassing all major aspects of field exploration, laboratory testing, and technical analyses. He has extensive experience in conducting geologic hazard/seismic risk analyses, geotechnical investigations, landslide investigations and restoration, and construction, monitoring and testing.

He has strong project management and client interaction skills. His responsibilities for projects in design phase include supervision of field investigations, instrumentation and providing the geology and seismic hazard evaluations for the geotechnical investigation study. Mr. Schluter provides supervision and project management of field services during all phases of project grading and construction.

Relevant Experience

City of Industry Recycled Water Project, Upper San Gabriel Valley Municipal Water District, CA. Senior Geologist. Supervised the geotechnical investigation and provided geologic analyses during the preparation of the reports. The project consisted of design and construction of approximately 21,300 linear feet of pipeline located in West Covina, California.

Calleguas Municipal Water District, Calleguas Brine Line Phase 2A, 2B, 2C, Preliminary Geotechnical and Geological Investigation. Camarillo, CA. Project Geologist. Performed preliminary investigation and assessment of three alternate pipeline routes for new brine pipeline to reduce the current salt loading into the local water shed by conveying saline waters and brine to treatment facilities near the Pacific Ocean in Ventura County, California. Evaluated surface and subsurface conditions along three proposed pipeline alignments that cross developed farmlands, roadways, freeways, rail road tracks and existing stream channels with seasonal flooding. The pipeline alignments crossed active earthquake fault zones of the Camarillo Fault and liquefaction susceptible sediments along the coastal plain.

EDUCATION

- Graduate Studies, Engineering Geology/Ground Water Hydrology, California State University, Los Angeles, 1984
- BS, Earth Sciences, California State Polytechnic University, Pomona, 1979
- AA, Pasadena City College, Pasadena, 1976

REGISTRATIONS/CERTIFICATIONS

- California, Professional Geologist No. 4527
- California, Certified Engineering Geologist No. 1415
- California, Certified Hydrogeologist No. 41
- 40-Hour Hazardous Materials Health & Safety Course, 29 CFR 1910.120, 1990

AFFILIATIONS

- Association of Environmental and Engineering Geologists (AEG)
- Earthquake Research Affiliates (ERA)
- Geological Society of America (GSA)
- USC/Southern California Earthquake Center

AWARDS

- CELSOC 2006- Engineering Excellence Honor Award for Hole-In-One On the 18th Hole
- ACEC 2006- Ramesh M. Khona National Award for Communication of Engineering Excellence

AREAS OF EXPERTISE

- Engineering Geology
- Building Foundations
- Groundwater Hydrology
- Educational Institutions
- Medical Facilities
- Essential Buildings
- Landslide Restorations
- Tunnel Investigation
- Pipelines
- Dam and Reservoir Surveillance
- Substations



Mark B. Schluter, PG, CEG, CHG

Senior Engineering Geologist

Perris Valley Pipeline, Metropolitan Water District, Eastern Municipal Water District, Riverside County, CA. Senior Geologist. Supervised the geotechnical investigation and provided geologic analyses during the preparation of the reports. The project involved 6.6 miles of 108" water line traversing freeway and other structures.

Camrosa Water District – Proposed Ag-3 Steel Reservoirs Siting Study, P & I, Camarillo, CA. Senior Geologist. Performed geologic and geotechnical investigation and report review during the geologic evaluation of the proposed Ag-3 steel reservoir sites located in the City of Camarillo, Ventura County, California. The purpose of the geologic evaluation was to identify and map key geologic units, features, and bedrock structure exposed at the ground surface of the three proposed reservoir sites for potential development purposes.

Springville Reservoir, 9-MG, Calleguas Municipal Water District, Camarillo, CA. Project Geologist. Performed geologic and geotechnical investigation for below grade reinforced concrete reservoir. Scope of services included geologic mapping, fault trenching, subsurface drilling, laboratory testing and engineering and geologic analyses. Performed seismic hazard assessment of reservoir site.

Lindero Reservoir, 4-MG, Calleguas Municipal Water District, Ventura County, CA. Project Geologist. Performed geologic and geotechnical investigation for buried reinforced concrete reservoir on a remote hilltop site. Services included subsurface exploration, trenching, laboratory testing, and foundation and seismic evaluation. Performed seismic refraction survey for rippability study. Evaluated bedrock materials for heave and expansion. Provided geotechnical monitoring and testing services during grading and construction.

Yorba Linda Water District, Yorba Linda, CA. Project Geologist. Conducted geotechnical and seismic investigations for six buried reinforced-concrete reservoirs within the Yorba Linda Water District. Provided geologic site evaluations for landslide and fault hazards, slope stability analyses, foundation design recommendations, seismic design criteria, as well as monitoring, testing, and instrumentation related to project design and construction.

Membrane Treatment Upgrade & Expansion Project, Azusa Light & Water Canyon Filtration Plant, Azusa, CA. Project Geologist. The project included the construction of a new membrane building, a membrane feed pump station a pretreatment basin, Yard piping will include membrane feed piping and filtered water piping, a 4 MG water storage reservoir and a new 18 inch pipeline 3500 feet long which will be routed from the existing San Gabriel Valley Municipal Water District pipeline to the Canyon Plant.

Orange County Water District Groundwater Replenishment System, Fountain Valley, CA. Senior Geologist. Provided oversight of geological conditions and analysis for the project. The project consisted of modifying the OCWD Groundwater Replenishment System from 70 MGD to 100 MGD. The project involved the Advanced Water Treatment Facility (AWPF) expansion, and the Secondary Effluent Flow Equalization project. The expansion required the construction of several new structures, including two 7.5 MG above-ground steel storage tanks, 1,000 linear feet of 54-inch diameter pipeline, 200 linear feet of 54-inch diameter pipeline, a UV facility for installation of two new UV trains, a decarbonation tower, a lime saturator, and other modifications and upgrades.



Norman S. Eke, CAC

Senior Vice President / Managing Officer-California Environmental Offices

Mr. Eke is the Senior Vice President and Managing Officer of Converse's California Environmental offices. Mr. Eke has served as the Principal-in-Charge and Contract Administrator to deliver services to various Federal, State, Municipal, Financial, Utility, Educational, Transportation and Private clients.

Mr. Eke has 31 years of experience in the fields of Environmental Due Diligence including Initial Site Assessments, Phase I and Phase II Environmental Site Assessments, Asbestos/Lead-base Paint/Fungal Surveys and Specifications; Abatement Monitoring, Preliminary Endangerment Assessments and associated Supplemental Site Investigations and Removal Action Work Plans/Implementation, various forms of Remediation, Human Health Risk Assessment, and NPDES Permitting/Stormwater Management, Methane Assessment/ Monitoring/Design and Indoor Air Quality. Mr. Eke has been with Converse for 30 years.

Additional summarized experience includes:

- Preliminary Endangerment Assessments and Removal Actions - Mr. Eke was Principal in Charge for Preliminary Endangerment Assessments (PEA), Supplemental Site Investigations (SSIs) and Removal Actions. Work has also included the generation of PEA Workplans, Conceptual Site Models, Human Health Risk Assessments (HHRA) and final PEA reports. Work has been approved by the EPA Brownfields Unit, Department of Toxic Substances Control, Regional Water Quality Control Board and various Certified Unified Program Agencies.
- Storm Water Pollution Prevention Plans (SWPPPs) and Monitoring - Assisted and was the Principal-in-Charge for the preparation of SWPPPs for military, educational, commercial, transportation and residential construction sites in conjunction with Qualified Stormwater Developers and Practitioners.

Relevant Experience

Phase II Environmental Site Assessments (Phase II ESAs)

In conjunction with Professional Geologists and Engineers, Mr. Eke has completed Phase II ESA scope of services throughout California, Washington, Nevada, and Arizona that have included:

- Geophysical Surveys to delineate underground features (septic tanks, pipelines, tanks.)
- Soil Gas Surveys using tedlar bags, summa canisters and mobile laboratories in general compliance with the Joint DTSC and California Regional Water Quality Control Board guidelines.

EDUCATION

- BA, Liberal Studies, Environmental Studies Emphasis, University of California, Santa Barbara, 1988

REGISTRATIONS/CERTIFICATIONS

- Cal/OSHA Asbestos Consultant No. 96-2093
- NIOSH 582 Equivalent Training
- 40-Hour OSHA Safety Training
- 8-Hour OSHA Supervisor Training
- 4-Hour SQAQMD Rule 1403 Asbestos; Rules 401, 402, 403 Dust & Emissions
- UCLA Extension- Air Permitting, Regulatory Framework of Hazardous Materials, Hazardous Materials Management
- Manufacturer's Certification in the use of Niton XRF device

AFFILIATIONS

- Member ASTM E.50 Committee on Environmental Assessment, Risk Management and Corrective Action (Former Subcommittee Chairman 2008-2016)

PUBLICATIONS

ASTM International Manual, Technical Aspects of Phase I/II Environmental Site Assessments 3rd Edition, 2015.

AREAS OF EXPERTISE

- Asbestos & Lead Paint Management
- Compliance Permitting & Consulting
- Groundwater Assessment & Monitoring
- Health and Safety Compliance
- Industrial Hygiene & Air Quality
- Landfill Gas Monitoring
- Methane Assessment & Remedial Design
- Phase I & II Environmental Site Assessments
- Preliminary Endangerment Assessments
- Property Condition & PMLA
- Regulatory Agency Liaison
- Risk Assessments
- Removal Actions & Work Plans
- Remediation
- Stormwater Pollution Prevention Plans



Norman S. Eke, CAC

Senior Vice President / Managing Officer-California Environmental Offices

- Soil sampling by hand auger, direct-push rigs, hollow stem auger rigs or grab samples.
- Chemical Analyses of Samples that will typically include total petroleum hydrocarbons, volatile organic compounds, semi-volatile organic compounds, pesticides, herbicides, PCBs and metals.
- Use of direct field reading equipment for volatile organic compounds, hydrogen sulfide and methane.
- Groundwater well installation and sampling including hydro-punch methodology.

Stormwater Pollution Prevention

Principal-in-Charge for the preparation of Stormwater Pollution Prevention Plans (SWPPPs) for residential, commercial and military construction sites, as well as a wastewater treatment ponds in Los Angeles and San Bernardino counties. Specific projects include:

- **National Aeronautics and Space Administration, Santa Susana Field Laboratory (SSFL) SWPPP, Ventura, CA.** A SWPPP was generated for the portion of the SSFL which is to undergo demolition and removal of all above and below ground manmade features to a depth of 5-feet below grade. The SWPPP was prepared based on an existing NASA programmatic SWPPP, which provided an understanding of the existing water quality issues present at SSFL and a uniform approach to stormwater management. The SWPPP included guidance and recommended compliance procedures to be implemented during demolition activities at Risk Level 1 and 2 within SSFL.
- **Sharp Army Depot, Development of SWPPP for MATOC's/DLA's 42-Acre Construction, Stockton, CA.** Water Pollution Control (WPC) Manager, and Qualified SWPPP Developer (QSD) and QSP, as part of the NPDES General Permit requirements, for construction activities for Sharp Depot facility. The Draft SWPPP is under review by the Defense Logistic Authority, prior to be finalized.
- **Sharp Army Depot, Dust Control Plan, Lathrop, CA.** Developed a Dust Control Plan for the removal of 122,000 cubic yards of soil based on the requirements of the San Joaquin Valley Air Pollution Control District.
- **Los Angeles Community College District, SWPPP Update and Implementation, West Los Angeles Campus.** Updated SWPPP for partially completed project, reviewed existing BMPs, implemented BMP repair and improvements, completed periodic rain event monitoring.
- **Caltech, Bechtel Residence, SWPPP Inspection and Monitoring,** Completed periodic rain event monitoring.

Methane Assessment, Monitoring and Remedial Design/Landfill Gas Monitoring

Contract Administrator and Principal in Charge for projects including:

- Operation, monitoring, and maintenance of the gas collection and control system at the former Blanchard Landfill in Los Angeles County. Inspection and monitoring of the system is completed in accordance with Air Pollution Control District Rule 1150.1, and Sanitation District Industrial Wastewater Permit requirements. Activities include the collection of samples from the gas treatment system, adjusting of extraction wells to control gas migration, monitoring waste discharge, system maintenance, and preparing reports for various agencies.



Siva K. Sivathasan, PhD, PE, GE, DGE, QSD, F.ASCE

Senior Vice President/Principal Engineer

Dr. Sivathasan is a registered civil and geotechnical engineer in California, with 26 years of geotechnical and construction experience. He is skilled at analyzing complex geotechnical problems and has prepared comprehensive reports with detailed recommendations. He also has extensive knowledge of construction projects from managing geotechnical observation and testing, special inspection and material testing, and Caltrans source inspection services. He is a subject matter expert for the California Board of Professional Engineers, Land Surveyors, and Geologists for geotechnical engineering exam development. Dr. Sivathasan has been teaching several civil engineering undergraduate and graduate classes at Cal Poly Pomona and Cal State Fullerton on a part-time basis. He also taught civil engineering classes at the University of Peradeniya, Sri Lanka, University of California at Davis and Irvine, and Cal State Northridge. He teaches geotechnical engineering and engineering surveying sections for the California Professional Engineer Exam. He is the vice chair of the ACSE Los Angeles Section Geotechnical Group and has published several papers in journals and for international and national conferences.

Experience

City of Santa Paula, Crosstown Water Pipeline Project, Santa Paula, CA. Principal Engineer. Performed geotechnical investigation and presented final report to support design phase. Subsurface exploration included exploratory borings to obtain soil samples. Project included the installation of 8,065 linear feet of, 24-inch diameter buried water pipeline composed of polyvinyl chloride (PVC) material, to connect the discharge pipeline from the Steckel Water Conditioning Facility at the Steckel Drive/Santa Barbara Street intersection to the Pleasant Street/Tenth Street intersection

New Glendale Heights Welded Steel Reservoir, Glendale CA. Principal Engineer. Conducted field exploration, laboratory testing, geologic evaluation, and geotechnical analysis. Prepared geotechnical/ geohazard evaluation report including design and construction recommendations for a proposed Welded Steel Reservoir.

Hyperion Wastewater Reclamation Plant, City of Los Angeles DPW Bureau of Engineering, Playa Del Rey, CA. Principal Engineer. Managed geologic observations for compaction testing during grading for the construction of a 75' by 100' pad to support new odor control air treatment equipment. The IPS Odor Control Improvements Project consisted of the demolition of existing parking lot, installation of temporary shoring piles and material slab subgrade preparation.

City of Los Angeles, ELA Station 42 – New Booster Station Updates, Los Angeles, CA. Principal Engineer. Conducted subsurface exploration and laboratory testing. Assisted the Principal Engineer in the development of the geotechnical investigation report for design and construction of a proposed concrete masonry pump building, a 4,000-gallon surge tank concrete pad, and one diesel generator pad.

EDUCATION

- PhD, Civil Engineering, University of California, Davis, 2002
- MS, Civil Engineering, University of California, Davis, 1997
- BS, Civil Engineering, University of Peradeniya, Sri Lanka, 1994

REGISTRATIONS/CERTIFICATIONS

- California, Civil Engineer No. 63185
- California, Geotechnical Engineer No. 2708
- Diplomate in Geotechnical Engineering No. 1169
- CFR 1910.120 OSHA 8-Hour Refresher Training
- CFR 1910.120 OSHA 40-Hour Training
- Nuclear Soil Density Gauge Certification

AREAS OF EXPERTISE

- Geotechnical Engineering
- Deep Foundations
- Water/Wastewater Treatment
- Educational Institutions
- Building Foundations
- Bridge Foundations



Siva K. Sivathasan, PhD, PE, GE, DGE, QSD, F.ASCE

Senior Vice President/Principal Engineer

California Water Service Pump Station 42, Los Angeles, CA. Project Manager. Responsible for geotechnical investigation and geotechnical observation and testing during construction. The project consisted of booster station upgrades at Pump Station 42 adjacent to property at 1037 North Eastern Avenue in Los Angeles. The concrete masonry pump building, a 4,000-gallon surge tank concrete pad, and one diesel generator pad were constructed at the site. The project included a seismic hazard evaluation to meet current applicable seismic codes. The structure loads for the proposed construction are not known at this time and are anticipated to be low.

Whittier Narrows Recreation Area Sewer Line, County of Los Angeles, CA. Project Manager. Responsible for client meetings, geotechnical site investigation including planning, obtaining permits to drill along the City and County Streets, field operations (borings and pot holing), laboratory testing, analyses and report preparation, and project management for this project.

City of Torrance, Dominguez District Booster Station 232, Torrance, CA. Principal Engineer. Conducted subsurface exploration and laboratory testing. Assisted in the development of the geotechnical investigation report for the design and construction of the replacement of five existing booster pumps and the concrete vault at which they are located, and a new pump station housing unit.

City of Rosemead, Central Groundwater Treatment System and Associated Pipeline, Rosemead, CA. Principal Engineer. Performed geotechnical investigation and laboratory testing. Assisted the Principal Engineer in the development of the geotechnical study report for the design and construction of UV-Treatment and AOP facilities, above ground chemical storage tanks, canopy for the UV equipment, and approximately 2,000 linear feet of 12-inch diameter pipeline, located within the existing Delta Pumping Plant located at 2657 North Delta Avenue, Rosemead, California.

Hacienda Heights, Hillside Stabilization and Drainage Improvements at Plant B17, Hacienda Heights, CA. Principal Engineer. Conducted site reconnaissance and assisted the Principal Engineer in the development of the geotechnical investigation report to assist in the stabilization and erosion mitigation of the existing hillside which slopes into a 3-foot-tall CMU retaining wall around the existing concrete water storage tank.

City of Bradbury, Sewer Construction Project along Mount Olive Drive, Bradbury, CA. Project Manager. Responsible for geotechnical observation and testing during construction.

East 27th Street Water Main Replacement, Long Beach, CA. Project Manager/Project Engineer. Provided oversight of the geotechnical observation and testing, special inspection and material testing during construction. The project consisted of replacing existing water line with 4,100 linear feet of cast iron pipe on East 27th Street, Elm Avenue, Pasadena Avenue, Linden Avenue and Via Passilo in Long Beach. The project included the installation of various valves, service laterals and fire hydrants; reconnecting existing service lines and fire hydrant lines to the new water line; replacing existing water meters; abandoning existing water mains and service laterals.

California Water Service, Palos Verdes Pump Station, Rancho Palos Verdes, CA. Principal Engineer. Geotechnical investigation services included site reconnaissance, subsurface exploration, laboratory testing, engineering analysis, and final geohazard/ geotechnical report with design and construction recommendations. Geotechnical observation and testing services completed.





Jennifer Marks – Psomas

Project Manager

Jennifer Marks is a Senior Project Manager with over 21 years of experience in environmental documentation and analysis consistent with CEQA and NEPA. Jennifer’s career has focused on a wide variety of projects, including mixed-use, residential, office, and resort developments; specific plan and general plan analyses; transportation infrastructure; and various utility infrastructure projects. She has managed multiple water and wastewater infrastructure projects, including projects for the Irvine Ranch Water District; Santa Margarita Water District; City of Anaheim Public Utilities Department for water projects and Public Works Department for sewer projects; and the Water Replenishment District of Southern California. She has also prepared environmental documentation and supplemental information to meet specific agency requirements, including those for the following agencies: Caltrans; State Water Resources Control Board; U.S. Bureau of Reclamation; U.S. Environmental Protection Agency; USACE; USFWS; CDFW; various local planning and development departments; and private developers. Through her project work, Jennifer has developed strong working relationships with agency personnel, County and City staff, private developers, and a variety of specialty consultants.

EDUCATION

1999/BS/Natural Resources, Planning and Interpretation/Humboldt State University

PROFESSIONAL AFFILIATIONS

American Society of Civil Engineers
Environmental and Water Resources Institute

EXPERIENCE

With Psomas for 20 years; with other firms for 1 year

Experience

Irvine Ranch Water District, Rattlesnake Reservoir Pump Station Initial Study/Mitigated Negative Declaration, Orange County, CA:

Project Manager for the IS/MND for replacement of the existing Rattlesnake Reservoir Pump Station No. 2 with a new Zone A to Rattlesnake Reservoir Pump Station at the Rattlesnake Reservoir Complex. The proposed project includes demolition and replacement of the existing RRPS2, as well as demolition of other appurtenant equipment, extension of existing sewer piping, and construction of related equipment and facilities.

Coto de Caza Emergency Storage Basin Project Initial Study/Mitigated Negative Declaration, Orange County, CA:

Project Manager for the IS/MND for construction of an emergency storage basin to contain potential sanitary sewer overflows associated with the existing Coto de Caza Lift Station (CdCLS). The project involves construction of a concrete-lined structure to accommodate up to 85,000 gallons of sewer overflow. Psomas is currently preparing a mitigated negative declaration for this project and has completed technical analyses, including air quality and greenhouse gas emissions, noise, cultural resources, and a biological site survey.

Eastern Municipal Water District, Murrieta Road Transmission Pipeline Project Initial Study/Mitigated Negative Declaration, Menifee, CA:

Project Manager for the IS/MND to construct and operate a 36- to 42-inch-diameter water transmission line from the Perris II Desalter Complex (Desalter) in the City of Menifee approximately 1.33 miles south, mostly in the Murrieta Road right-of-way, to La Piedra Road, where the proposed pipeline will connect to an existing 36-inch-diameter water main in La Piedra Road about 250 feet east of its intersection with Murrieta Road. The proposed project will provide capacity to transmit potable water from the Desalter to the existing main in La Piedra Road.

Well Number 29 Rehabilitation Project Initial Study/Mitigated Negative Declaration, City of Santa Ana, CA: Project Manager for the IS/MND to rehabilitate the City's existing Well 29; relocate an existing tennis court; and construct a building, pertinent related site improvements, and water pumping equipment.

Irvine Ranch Water District, Irvine Lake Pipeline Conversion Project Initial Study/Mitigated Negative Declaration, Orange County, CA: Project Manager for preparation of environmental documentation for conversion of the northern segment of the Irvine Lake Pipeline from an untreated water to a recycled water pipeline. The project involves construction of a new recycled water storage tank, installation of recycled water pipelines, and conversion of existing domestic water facilities to accommodate the recycled water supply. Psomas prepared a mitigated negative declaration for this project and completed additional technical studies to comply with CEQA-Plus guidelines pursuant to the Clean Water State Revolving Fund requirements. This project represents the first task order associated with Psomas' On-Call CEQA and NEPA Consultation Services agreement with IRWD.

West Valley Feeder No. 1 Phase 3 Project Mitigated Negative Declaration, Los Angeles, CA: Project Manager for preparation of an MND for the West Valley Feeder No. 1 Stage 3 Improvements Project in the Chatsworth community of the City of Los Angeles. The project involves construction of an access road and installation of replacement structures along the West Valley Feeder pipeline just northwest of Chatsworth Park South.

3.7 MG Zone 1 Reservoir Project Mitigated Negative Declaration, Irvine, CA: Project Manager for preparation of an MND for construction of an additional reservoir to allow for storage reliability and operational flexibility in the Zone 1 domestic water system. The project site is located in the City of Irvine within Planning Area 9A (Woodbury), which is an area that is currently experiencing a high volume of new residential construction. The project site was included in the City's Northern Sphere Environmental Impact Report; however, development of a second reservoir was not specifically addressed.

Maywood Mutual Water Company No. 3, Water Quality Improvements Project Negative Declaration and Categorical Exclusion, Maywood, Bell, and Vernon, CA: Project Manager for the preparation of an IS/MND for this project. The primary purpose of the project is to improve water quality and maintain reliability of the MMWC3 water system through rehabilitation, repair, and replacement of existing MMWC3 facilities. The project also requires preparation of supplemental documentation pursuant to the Federal Cross-Cutter Regulations pursuant to SWRCB requirements.

Rosecrans Booster Pump Station Mitigated Negative Declaration, Buena Park, CA: Environmental Project Manager for this project, which involves construction of a new pump station at the site of the existing Rosecrans Booster Pump Station in order to serve residents and properties in the upper zones of the Buena Park potable water system. Current pumping capacity is less than 3,500 GPM, which does not meet peak-hour (3,531 GPM) or maximum-day-plus-fire (5,395 GPM) demands.



Tin Cheung – Psomas

Director of Air Quality, GHG, and Noise

Tin Cheung has 26 years of experience conducting air quality, climate change, noise, and vibration studies for CEQA and NEPA compliance. His experience includes preparing air pollutant emissions inventories, dispersion modeling, climate change, and health risk assessments (HRAs) using a variety of computer data models. He is also proficient in conducting noise and vibration studies for stationary and mobile sources. He has employed monitoring equipment for the measurement of noise, vibration, and particulate matter.

Tin’s project experience includes analyses of land uses, including large-scale infrastructure, residential, commercial, industrial, educational, energy, and recreational uses. He has extensive knowledge of the CEQA/NEPA regulatory process and impact assessment methods established by USEPA, the California Air Resources Board (CARB), and local air quality management districts. Tin has also performed third-party reviews for technical adequacy and CEQA compliance in support of legal efforts and government quality assurance/quality control.

EDUCATION

1993/BA/Geography and Environmental Studies/
University of California,
Santa Barbara

PROFESSIONAL AFFILIATIONS

Association of Environmental Professionals

TRAINING

- AERMOD
- Air Pollutant Monitoring
- Air Quality
- Aviation Environmental Design Tool
- Cal3QHC
- California Emissions Estimator Model
- CALINE4
- Certified in Fugitive Dust Control Plans
- EMFAC
- FHWA RD77-108 Traffic Noise Model
- FTA Noise and Vibration Impact Assessment
- Noise and Vibration
- Noise and Vibration Monitors
- NonRoad
- Roadway Construction Noise Model
- SoundPlan
- Transportation Noise Model

EXPERIENCE

With Psomas for 3 years;
with other firms for 23 years

Experience

Irvine Ranch Water District, Rattlesnake Reservoir Pump Station Initial Study/Mitigated Negative Declaration, Orange County, CA:

Air Quality and Noise Manager for the IS/MND for replacement of the existing Rattlesnake Reservoir Pump Station No. 2 with a new Zone A to Rattlesnake Reservoir Pump Station at the Rattlesnake Reservoir Complex. The proposed project includes demolition and replacement of the existing RRPS2, as well as demolition of other appurtenant equipment, extension of existing sewer piping, and construction of related equipment and facilities.

Coto de Caza Emergency Storage Basin Project Initial Study/Mitigated Negative Declaration, Orange County, CA:

Air Quality and Noise Manager for the IS/MND for construction of an emergency storage basin to contain potential sanitary sewer overflows associated with the existing Coto de Caza Lift Station (CdCLS). The project involves construction of a concrete-lined structure to accommodate up to 85,000 gallons of sewer overflow. Psomas is currently preparing a mitigated negative declaration for this project and has completed technical analyses, including air quality and greenhouse gas emissions, noise, cultural resources, and a biological site survey.

Eastern Municipal Water District, Murrieta Road Transmission Pipeline Project Initial Study/Mitigated Negative Declaration, Menifee, CA:

Air Quality and Noise Manager for the IS/MND to construct and operate a 36- to 42-inch-diameter water transmission line from the Perris II Desalter Complex (Desalter) in the City of Menifee approximately 1.33 miles south, mostly in the Murrieta Road right-of-way, to La Piedra Road, where the proposed pipeline will connect to an existing 36-inch-diameter water main in La Piedra Road about 250 feet east of its intersection with Murrieta Road. The proposed project will provide capacity to transmit potable water from the Desalter from the Desalter to the existing main in La Piedra Road.

Well Number 29 Rehabilitation Project Initial Study/Mitigated Negative Declaration, City of Santa Ana, CA: Air Quality and Noise Manager for the IS/MND to rehabilitate the City's existing Well 29; relocate an existing tennis court; and construct a building, pertinent related site improvements, and water pumping equipment.

3.7 MG Zone 1 Reservoir Project Mitigated Negative Declaration, Irvine, CA: Air Quality and Noise Manager for preparation of an MND for construction of an additional reservoir to allow for storage reliability and operational flexibility in the Zone 1 domestic water system.

West Valley Feeder No. 1 Stage 3 Project Mitigated Negative Declaration, Southern California: Air Quality and Noise Manager for preparation of an MND for Metropolitan's West Valley Feeder No. 1 (WVF1) Stage 3 Project. The project site is located on approximately 0.46 acre within the north/northwestern portion of Chatsworth Park South. The purpose of the proposed project is to continue pipeline improvements implemented by Stages 1 and 2 of the WVF1 Valve Modification Project. The project would include 1) replacing valves, 2) adding valve structures, and 3) improving access for maintenance and repairs to WVF1.

Maywood Mutual Water Company No. 3, Water Quality Improvements Project Negative Declaration and Categorical Exclusion, Maywood, Bell, and Vernon, CA: Air Quality and Noise Manager for preparation of an IS/MND for rehabilitation, repair, and replacement of existing MMWC3 facilities. The project also requires preparation of supplemental documentation pursuant to the Federal Cross-Cutter Regulations pursuant to SWRCB requirements.

The Platinum Triangle Subsequent EIR, Anaheim, CA: Lead Air Quality Analyst responsible for the preparation of the regional emissions inventory of both criteria in GHG emissions and localized impact assessments for the 820-acre Platinum Triangle Master Land Use Plan. This master land use plan involved over 2 MSF of retail, 3 MSF of office and 9,500 residential units.

Hilton Garden Inn and Home 2 Suites Hotel, Initial Study/Mitigated Negative Declaration, Anaheim, CA: Air Quality and Noise Manager for the evaluation of construction and operational air quality and greenhouse gas on both a regional and local level. Also evaluated the project's noise impacts and provided recommendation for mitigation.

Link OC Mixed Use Project Peer Review, Anaheim, CA: Air Quality and Noise Manager for the City of Anaheim's peer review on the Link OC Mixed Use Project, which proposes construction of up to 406 apartment units and 5,000 SF of new retail located within the Anaheim Pacific Center Specific Plan.



Charles Cisneros, MS, RPA – Psomas

Senior Archaeologist

Charles Cisneros is a registered professional archaeologist with 16 years of experience in archaeological assessment and field experience in California and Nevada. He has directed numerous field projects in support of compliance with the California Environmental Quality Act (CEQA), the National Environmental Policy Act (NEPA), and Sections 106 and 110 of the National Historic Preservation Act (NHPA). Charles has managed a wide range of projects involving archaeological survey, testing, data recovery, monitoring, and laboratory analysis. He is skilled at research and data management, as well as maintaining and organizing digital and print publications. His training and background meet the U.S. Secretary of the Interior’s Professional Qualifications Standards for prehistoric and historic archaeology and he is a California Energy Commission approved archaeologist for desert archaeology.

REGISTRATION

Registered Professional Archaeologist/28575983/
Register of Professional Archaeologists

EDUCATION

2008/MS/European Archaeology/University of Edinburgh, United Kingdom

2004/BA/Anthropology/ California State University, Los Angeles

CERTIFICATIONS

Orange County Certified Archaeologist/Orange County

Riverside County Certified Archaeologist/Riverside County

TRAINING

Association of Environmental Professionals, CEQA Basics Workshop

Caltrans Introduction to Cultural Resources

CSULA San Nicolas Island Archaeological Field School

Riverside County Cultural Sensitivity Training (Certificate 338)

EXPERIENCE

With Psomas for 3 years;
with other firms for 13 years

Experience

Metropolitan Water District, West Valley Feeder No. 1 Stage 3 Improvements Project, Los Angeles, CA:

Senior Archaeologist for construction of an access road and installation of replacement structures along the West Valley Feeder pipeline just northwest of Chatsworth Park South. The project is in the Chatsworth community in Los Angeles.

Irvine Ranch Water District, Rattlesnake Reservoir Pump Station Initial Study/Mitigated Negative Declaration, Orange County, CA:

Senior Archaeologist for the IS/MND for replacement of the existing Rattlesnake Reservoir Pump Station No. 2 with a new Zone A to Rattlesnake Reservoir Pump Station at the Rattlesnake Reservoir Complex. The proposed project includes demolition and replacement of the existing RRPS2, as well as demolition of other appurtenant equipment, extension of existing sewer piping, and construction of related equipment and facilities.

Coto de Caza Emergency Storage Basin Project Initial Study/Mitigated Negative Declaration, Orange County, CA:

Senior Archaeologist for the IS/MND for construction of an emergency storage basin to contain potential sanitary sewer overflows associated with the existing Coto de Caza Lift Station (CdCLS). The project involves construction of a concrete-lined structure to accommodate up to 85,000 gallons of sewer overflow. Psomas is currently preparing a mitigated negative declaration for this project and has completed technical analyses, including air quality and greenhouse gas emissions, noise, cultural resources, and a biological site survey.

Eastern Municipal Water District, Murrieta Road Transmission Pipeline Project Initial Study/Mitigated Negative Declaration, Menifee, CA:

Senior Archaeologist for the IS/MND to construct and operate a 36- to 42-inch-diameter water transmission line from the Perris II Desalter Complex (Desalter) in the City of Menifee approximately 1.33 miles south, mostly in the Murrieta Road right-of-way, to La Piedra Road, where the proposed pipeline will connect to an existing 36-inch diameter water main in La Piedra Road about 250 feet east of its intersection with Murrieta Road. The proposed

project will provide capacity to transmit potable water from the Desalter from the Desalter to the existing main in La Piedra Road.

Well Number 29 Rehabilitation Project Initial Study/Mitigated Negative Declaration, City of Santa Ana, CA: Senior Archaeologist for the IS/MND to rehabilitate the City's existing Well 29; relocate an existing tennis court; and construct a building, pertinent related site improvements, and water pumping equipment.

3.7 MG Zone 1 Reservoir Mitigated Negative Declaration, Irvine, CA: Senior Archaeologist for preparation of an MND for construction of an additional reservoir to allow for storage reliability and operational flexibility in the Zone 1 domestic water system. The project site is located in the City of Irvine within Planning Area 9A (Woodbury), which is an area that is currently experiencing a high volume of new residential construction. The project site was included in the City's Northern Sphere Environmental Impact Report; however, development of a second reservoir was not specifically addressed.

Peck Road Basin Pump Station Project, Los Angeles County, CA: Senior Archaeologist for a cultural resources and paleontological study in support of the LACDPW Peck Water Conservation Project. His responsibilities included the investigation of cultural resources, paleontological resources, GPS mapping, and management recommendations. His other tasks included managing the project budget and working with County personnel.

Beachwood-Sparks Force Main Replacement Project, Los Angeles County, CA: Project Manager and Senior Archaeologist for preparing cultural resources and paleontological resources management plans and managing a biological nesting bird survey in support of the W.A. Rasic Construction Inc., Beachwood-Sparks Force Main Replacement and Pump Station Upgrade Project located in Los Angeles County. Additional tasks included managing the project budget and working with W.A. Rasic Construction personnel.

Inglewood Oil Field Specific Plan Project Environmental Impact Report, Culver City, CA: Archaeologist for preparation of an EIR for a Specific Plan that sets forth safeguards and regulations on oil and gas extraction activities in Culver City. The project site is adjacent to the Newport-Inglewood Fault and contains an Alquist-Priolo Fault splay. Up to 30 new wells would be allowed as well as associated storage tanks and pipelines, with requirements and restrictions to ensure the health and safety of the surrounding residential, recreational, and commercial land uses. The Specific Plan allows for the possibility of well stimulation techniques, including fracking, and deep well injection.

Lincoln Bridge Multi-Modal Improvements (LA TOS 27), Los Angeles, CA: Senior Archaeologist for the widening of Lincoln Boulevard from Fiji Way to Jefferson Boulevard to provide capacity for future light rail transit, with three vehicle lanes in each direction, Class II bicycle lanes, and sidewalks on both sides of the bridge. The project includes replacement of the Lincoln Boulevard Bridge over Ballona Creek, and replacement of the Culver Boulevard overpass while minimizing impacts to the creek and wetlands.



Marc Blain – Psomas

Project Manager and Senior Biologist – Regulatory Permit Services

Marc Blain has 28 years of experience in wildlife biology, conservation biology, natural resource planning, and training in various other areas in the environmental field. Marc is an Associate/Senior Project Manager and serves as the lead biologist for the Psomas Pasadena office. He is an expert on the biology and ecology of Southern California wildlife and possesses not only the ability to identify and classify the plants, animals and plant communities of the region, but also the ability to develop sustainable management practices. More specific areas of expertise include avian ecology, wildlife movement, and conservation biology. He is also experienced with the natural resources regulations and compliance requirements of the Federal Endangered Species Act (FESA), the California Endangered Species Act (CESA), CEQA, NEPA, the NCCP, the CWA, the MBTA, the California Fish and Game Code, and other biological statutes of regional counties and cities.

EDUCATION

1997/MS/Applied Ecology and Conservation Biology/ Frostburg State University, Frostburg, MD

1994/BS/Environmental Biology/California State University, Northridge

CERTIFICATIONS

Independent Researcher for Psomas' CDFW Entity Scientific Collecting Permit/SC-190410001/ California Department of Fish and Wildlife

10(a)(1)(A) Permit for coastal California gnatcatcher and Southwestern willow flycatcher/TE834489-6/U.S. Fish and Wildlife Service

PROFESSIONAL AFFILIATIONS

Association of Environmental Professionals

Union of Concerned Scientists

TRAINING

California Grasses Identification Class/Rancho Santa Ana Botanic Garden
Plant Families Class/ Rancho Santa Ana Botanic Garden

EXPERIENCE

With Psomas for 15 years; with other firms for 13 years

Experience

Los Angeles County Public Works, Flood Maintenance Division As-Needed Biological Services Contract, Los Angeles County, CA:

Project Manager for an As-Needed services contract with the Los Angeles County Public Works (Public Works), Flood/Stormwater Maintenance Division. Marc is responsible for managing a variety of projects and on-going consultation services. Projects range from focused surveys for special status plants and animals within County-operated flood-control channels to emergency Section 7 Consultations with the USFWS; he has also conducted CEQA documentation for long-term maintenance permits from the CDFW. Responsibilities involve daily communication with Public Works staff to assist in environmental compliance issues as they arise. Projects frequently require Marc to communicate directly with regulatory agencies such as the USACE, the CDFW, the RWQCB, and the USFWS to resolve potential impacts issues.

Los Angeles County Department of Parks and Recreation As-Needed Consultant Services, Los Angeles County, CA:

Biological Resources Manager for a three-year master services agreement for environmental services for various Park and Recreation facilities and programs. Services include CEQA and NEPA Documentation, Regulatory Permitting, Habitat Resources, Cultural Resources Assessment, and Mitigation Monitoring. Psomas' first task order was an Addendum to the Earvin "Magic" Johnson Recreation Area Master Plan Environmental Impact Report and Addenda.

Los Angeles County Public Works Bouquet Channel Emergency Clearing and Biological Monitoring, Los Angeles County, CA:

Project Manager for the Bouquet Channel Emergency Clearing project. This project involved potential impacts from repair activities to a State- and federally-listed Endangered fish species, and required oversight of the listed species' capture and relocation and the preparation of the associated documents. Marc directed biological monitoring to ensure biological resources protection during channel vegetation clearing activities. He also coordinated among several State

and federal agencies and Los Angeles County Public Works maintenance and management personnel, and he negotiated with resource agencies to determine the most appropriate measures to ensure minimal impacts to sensitive resources.

Tesoro del Valle Supplemental Biological Resources Assessment and EIR, Los Angeles County, CA: Manager of the biological resources assessment for the Tesoro del Valle project, which involves the build-out of Phases B and C. The project involves construction of 710 single-family residential dwelling units; a fire station site; parks and recreational amenities (i.e., clubhouse, pool, trails); and supporting roadway and utility infrastructure within Phases B and C of the Tesoro del Valle project. The project involves a density transfer of 474 un-built residential units from Phase A into Phases B and C. The proposed project would not increase the total 1,791 residential units previously approved for the Tesoro development. A revision to the existing Conditional Use Permit for Hillside Management and Density Controlled Development would be required, as would renewed permits for oak tree and jurisdictional impacts. Areas of special consideration include impacts to biological and jurisdictional resources, land use, and water supply. Marc was responsible for overseeing plant and wildlife focused surveys for Threatened and Endangered species; assessing biological resources impacts of the proposed project; and providing documentation in technical reports and the EIR.

Silver Lake Reservoir Improvement Project Biological Study and Public Outreach, Silver Lake, CA: Project Manager for a biological study and outreach program for the Silver Lake Reservoir Improvement project. He managed a study to determine the potential effects on wildlife resources that might result from allowing public access to the “meadow area” of the Silver Lake Reservoir. A substantial element of this project was public outreach, and Marc assisted the City of Los Angeles by speaking to members of the community to reassure them of the project’s sensitivity to biological resources. Marc was able to successfully communicate with project skeptics and speak with many members of the public with various opinions at once.

Centennial Specific Plan Project EIR, Los Angeles County, CA: Biological Resources Manager for the preparation of an EIR for a new community with residential, commercial, business park, recreational/entertainment, and institutional/civic uses. The project would allow up to 19,333 dwelling units; 7.4 MSF of Business Park uses (office, research and development, and warehousing or light manufacturing uses); 1.0 MSF of Commercial uses; 1.6 MSF of Institutional/Civic land uses; fire stations and a sheriff’s station; and two wastewater reclamation facilities that will generate recycled water.

Castaic Lake Water Agency Recycled Water Master Plan EIR, Biological Surveys and Biological Resources Assessment, Santa Clarita, CA: Senior Biologist for a general plant and wildlife survey and vegetation mapping for the Northwest Spur Pipeline component of the Castaic Lake Water Agency’s Recycled Water Master Plan. The pipeline route is located entirely within the County of Los Angeles near the intersection of SR-126 and I-5 and at the confluence of the Santa Clara River and Castaic Creek. The purpose of the surveys was to describe the vegetation and wildlife present in the Northwest Spur Pipeline study area and to evaluate the potential for the presence of special status species. He also prepared the CEQA-level Biological Resource Assessment, which is included as an appendix to the Program EIR.



David Hughes – Psomas

Senior Regulatory/Restoration Specialist/Certified Arborist

David Hughes is a Senior Project Manager in Restoration Ecology and Regulatory Services with 18 years of experience in mitigation planning, restoration monitoring, wetland delineations, and regulatory permitting. David is also a Certified Arborist and fully trained practitioner of the California Rapid Assessment Method (CRAM) for wetlands. He is responsible for completing Jurisdictional Assessments/Delineation Reports and assisting both private and public entities with obtaining regulatory authorizations from the USACE, the CDFW, the USFWS, the RWQCBs, and the California Coastal Commission (CCC). He is responsible for planning and implementing mitigation projects to comply with regulatory permit conditions and mitigation measures pertaining to the CEQA. David has expertise in habitat site analysis, habitat mitigation program development, restoration monitoring, wetland delineations and assessments, regulations pertaining to jurisdictional waters, tree inventories and protection plans, and general mitigation compliance documentation.

EDUCATION

2003/MS/Ecological Restoration and Management/University of Wisconsin, Madison
1991/BS/Ecology, Behavior and Evolution/University of California, San Diego

CERTIFICATIONS

Certified Ecological Restoration Practitioner/Society for Ecological Restoration
Trained Practitioner, California Rapid Assessment Method (CRAM), Riverine and Depressional Wetland Modules/California Wetlands Monitoring Workgroup
U.S. Army Corps of Engineers Jurisdictional Delineation Training/Richard Chinn Environmental Training, Inc.
Certified Arborist/WE-7752A/International Society of Arboriculture

PROFESSIONAL AFFILIATIONS

California Society for Ecological Restoration
International Society of Arboriculture

EXPERIENCE

With Psomas for 17 years; with other firms for 1 year

Experience

Pacoima Dam Sediment Removal Project, Los Angeles County, CA:

Project Manager for various biological surveys associated with this project. Los Angeles County Public Works has proposed to remove excess sediment from Pacoima Reservoir to restore its original water storage capacity by sluicing material to a downstream debris basin. In order to evaluate the impacts associated with sediment removal and dam operations, a variety of biological surveys and analysis have been performed. David provided general coordination and oversight of focused biological surveys and attended several project planning and regulatory pre-application meetings with staff from the USFWS, CDFW, RWQCB, and USFS. During the focused biological surveys, one special status species was identified, and David coordinated the collection of seed to ensure that mitigation could be performed without affecting the overall project schedule. David also coordinated with a geomorphologist to determine how to measure the impacts of sluicing on habitat downstream of the dam and how best to sluice material through the dam to most efficiently transport sediment to the downstream debris basin. David is also responsible for ensuring that project tasks are completed within schedule and budgetary constraints.

Big Tujunga Sediment Removal Project Initial Study/Mitigated Negative Declaration, Mount Wilson, CA:

Project Manager for the preparation of an IS/MND for the removal of sediment from the Big Tujunga Reservoir and placement of the sediment in the adjacent Maple Canyon site in order to restore flood-control capacity to the Reservoir. The environmental document analyzes Low Emission Trucking and a Conveyor Belt System as two separate sediment-transport methods. Project implementation would require dewatering of the reservoir into Big Tujunga Creek, which contains “Critical Habitat” designated areas for both the Santa Ana sucker and the arroyo toad. The Maple Canyon Sediment Placement Site (SPS) can accommodate approximately 4.4 million cubic yards (mcy) of additional sediment, which would bring the SPS to its ultimate planned sediment capacity. Sediment removal and placement would occur over the course of five years during the dry

season. David provided general coordination and oversight of focused surveys and assisted Public Works to minimize and avoid impacts, where possible, to facilitate the environmental review and regulatory permitting process. David is also responsible for ensuring that project tasks are completed within schedule and budgetary constraints.

Tesoro del Valle Residential Development Project, Restoration and Regulatory Services, Los Angeles County, CA: Surveyed the 800-acre Tesoro del Valle project site to document all oak trees subject to the Los Angeles County Oak Tree Ordinance and all oak woodlands as defined by the Los Angeles County Oak Woodlands Conservation Plan. Prepared an oak tree survey report that documented the results of the survey and prepared an oak tree Burden of Proof to assist the client to receive an oak tree permit from the County of Los Angeles. Performed a delineation of jurisdictional waters on the project site for the purpose of extending the existing USACE permit for the project. Currently working with staff from the RWQCB and the CDFW to acquire the appropriate permits from these agencies to allow construction to proceed.

Camp Kilpatrick Replacement Project, Oak Tree Survey, Los Angeles County, CA: The project involved the demolition and replacement of a juvenile probation facility. As the Arborist for this project, performed an oak tree survey in accordance with requirements in the Los Angeles County Oak Tree Ordinance and the Santa Monica Mountains Local Coastal Plan on all areas within 200 feet of the proposed project limits. The tree survey consisted of mapping the location of each tree that met the minimum size threshold; measuring the trunk diameter; and assessing the health and aesthetic qualities of the trees. Trees that were associated with jurisdictional streambeds were separately noted as these were subject to additional permitting from the CDFW. The survey identified and mapped approximately 90 coast live oak trees within the survey area. The results of the oak tree survey and the oak woodlands analysis were presented to the Los Angeles County Environmental Review Board to acquire County approvals for the project.

Special Status Botanical Surveys for the Bakerton and Caitlyn Debris Basins Project, Los Angeles County Public Works, Flood Maintenance Division, Los Angeles County, CA: Project Manager for the Special Status Botanical Surveys for the Bakerton and Caitlyn Debris Basins project. The purpose of the botanical surveys was to determine the presence or absence of any special status species at these debris basins prior to maintenance of these basins (i.e., removal of excess sediment and vegetation within the basin footprint). Surveys were conducted at the appropriate time of year for San Fernando Valley spineflower (*Chorizanthe parryi* var. *fernandina*), slender mariposa lily (*Calochortus clavatus* var. *gracilis*), chaparral ragwort (*Senecio aphanactis*), Braunton's milk-vetch (*Astragalus brauntonii*), and Plummer's mariposa lily (*Calochortus plummerae*). Reference populations were visited prior to visiting the project sites to ensure that these species were detectable at the time of the survey. David was also responsible for ensuring that project tasks are completed within schedule and budgetary constraints.

Santa Anita Conservation Easement Baseline Biological Survey Report, Arcadia, CA: Biologist for this project. David completed the vegetation mapping and biological assessment of the project site.



Steve Norton – Psomas

Senior Biologist

Steve Norton is a Senior Project Manager and Senior Biologist with 20 years of experience conducting biological studies on wildlife, plants, and ecological processes throughout California. His technical experience includes biological resource assessments, natural plant communities mapping, regional conservation plan consistency analyses, biological resource policy compliance management, and technical writing for CEQA/NEPA compliance. Steve has project management experience with a wide variety of public and private clients, including commercial and residential development projects, transportation projects, regional and municipal infrastructure (including large-scale flood management) projects, and extensive electrical utility infrastructure experience. Steve is a qualified Bat Biologist who has designed and conducted focused surveys to determine presence and absence of roosting bats in a variety of structures (e.g., dams, bridges, and abandoned buildings). He is an experienced analyst of echolocation recordings using full-spectrum technology and has designed a variety of measures to minimize impacts to bats or to humanely exclude bats from project areas. Steve has conducted protocol-level presence/absence surveys in occupied habitat for various special status species, including the desert tortoise, arroyo toad, burrowing owl, California spotted owl, least Bell's vireo, and a score of annual and perennial plant species. Steve has also performed active relocation of western spadefoot; passive relocation of burrowing owl, desert kit fox, and native bat species; and has installed artificial roost structures for burrowing owl.

EDUCATION

2001/BS/Environmental Biology and Management/ University of California, Davis

CERTIFICATIONS

Scientific Collecting Permit/SC-007207/ California Department of Fish and Wildlife

Independent Researcher for Psomas' CDFW Entity Scientific Collecting Permit/SC-190360012/ California Department of Fish and Wildlife

PROFESSIONAL AFFILIATIONS

The Wildlife Society, Western Section

EXPERIENCE

With Psomas for 10 years; with other firms for 10 years

Experience

Big Tujunga Wash Santa Ana Sucker and Benthic Macroinvertebrate Long-Term Monitoring Project, Angeles National Forest, Los Angeles County, CA:

Biologist for this project. The Los Angeles County Public Works has committed to conducting this monitoring annually for ten years to observe the variability in the Santa Ana sucker population downstream of the Big Tujunga Dam. The monitoring is one of the mitigation measures required as part of the Section 7 Consultation for the Big Tujunga Dam Operations and Maintenance Plan. Psomas has conducted the third through eighth years of monitoring and will conduct the ninth year of monitoring in fall 2017. Steve was the field lead for 2016 field season, which included electrofishing and identification of native and non-native fish species; sampling of macroinvertebrate species; and collecting water quality and stream habitat parameters.

Camp Kilpatrick Biological Resources Services, Los Angeles County, CA:

Biologist for the construction of a replacement juvenile residential treatment camp in Los Angeles County. To support the project's IS/MND, Psomas completed vegetation mapping; general plant and wildlife surveys, including a jurisdictional delineation and report; bat habitat assessment; focused plant surveys; oak tree surveys; and bat roost emergence surveys. A Biological Resources Report was completed that summarized the results of the above-mentioned surveys and which became an appendix to the IS/MND. Steve coordinated and conducted a roosting bat habitat assessment and

subsequent roost emergence surveys across the project site. He also completed pre-construction bat surveys and wrote the compliance report.

Pacoima Dam Sediment Removal Project, Los Angeles County,

CA: Biologist for various biological surveys associated with this project. The Department of Public Works has proposed to remove excess sediment from Pacoima Reservoir to restore its original water storage capacity by sluicing material to a downstream debris basin. In order to evaluate the impacts associated with sediment removal and dam operations, a variety of biological surveys and analysis have been performed. Steve surveyed for the federally listed Endangered Sierra Madre yellow-legged frog in a natural stream leading to a flood-control dam.

Santa Anita Stormwater Management and Seismic Strengthening Project, Biological Technical Report, Focused Biological Surveys, Mitigated Negative Declaration, Biological Assessment/Biological Evaluation, Management Indicator Species Report, Arcadia, Los Angeles County, CA:

Senior Biologist for this project located in Arcadia. The proposed project would modify Santa Anita Dam, the Headworks facility, and the Debris Dam to strengthen them and to automate operations. The project also includes constructing a helipad and new facility structures at the Dam; repairing a slope and upgrading a water line from a water tank to the Dam facilities; replacing the entrance gate to the Dam facilities and making it automated (including installation of power along the access road to the gate); and replacing a bridge to the Arcadia Wilderness Park. Steve designed and conducted focused surveys for roosting bats over multiple years for the 3 Project Work Areas (225-foot tall Dam, Headworks, and Debris Dam); various bat species were confirmed to be present including 3 California Species of Special Concern. Steve analyzed over 170 hours of acoustic recordings. He prepared the Project impact analysis on Townsend's big-eared bat and other roosting bats. He worked with the County, U.S. Forest Service, and CDFW to determine appropriate avoidance and minimization measures and exclusionary measures that should be used during construction of each portion of the Project.

Santa Clarita Valley Sanitation District Reduced Discharge Technical Biological Study of the Upper Santa Clara River, Los Angeles County, CA:

Biologist As part of the habitat assessment for unarmored threespined stickleback in the Santa Clara River upstream and downstream of a LA County Wastewater Treatment release site, Steve collected water quality parameters and flow/discharge measurements.

Beacon Photovoltaic Project, Pre-Construction Surveys and Construction Monitoring, Kern County, CA:

Senior Biologist for this project, which is a 2,300-acre solar development being constructed by two developers under the direction of the Los Angeles Department of Water and Power (LADWP). Steve managed biology staff on site prior to and during construction activities. He led various survey efforts, including surveys for nesting birds, burrowing owl, and burrowing mammals. Steve also observed and recorded occupied desert tortoise burrows and sign and monitored efficacy of exclusionary fencing. He conducted camera monitoring for active burrowing owl and desert kit fox burrows, then passively excluded the burrows prior to his scoping, mapping, and humanly excavating the burrows. In addition, he also assisted in focused burrow surveys for Mohave ground squirrel.



Allison Rudalevige – Psomas

Delineation Specialist/Botanical Support Biologist

Allison Rudalevige is a Senior Biologist with 17 years of experience in the areas of biological and jurisdictional resources. She has experience conducting general and focused plant and wildlife surveys, vegetation mapping, mitigation monitoring, tree surveys, jurisdictional delineations, California Rapid Assessment Method (CRAM) analyses, and physical habitat analysis according to the Surface Water Ambient Monitoring Program (SWAMP) protocol. Her experience also includes the preparation of several types of environmental documents, including Biological Constraints Reports, Biological Technical Reports, Habitat Assessment Reports and Determination of Biologically Equivalent or Superior Preservation (DBESP) Reports for the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP), Natural Environment Studies (NESs) and NES (Minimal Impacts) for the California Department of Transportation (Caltrans), Focused Survey Reports, and Jurisdictional Delineation Reports. She has also prepared application packages for the U.S. Army Corps of Engineers (USACE) Section 404 Permit; the Regional Water Quality Control Board (RWQCB) Section 401 Water Quality Certification and Report of Waste Discharge; and the California Department of Fish and Wildlife (CDFW) Notification of Lake or Streambed Alteration. She has completed coursework in the areas of wetland, plant, vernal pool branchiopod, bird, and herpetofauna identification.

EDUCATION

2005/MS/Biology/University of California, Riverside

2000/BS/Biology, Zoology/California State University, Long Beach

CERTIFICATIONS

Scientific Collecting Permit/No. SC-183060003/California Department of Fish and Wildlife

Plant Voucher Collecting Permit/No. 2081(a)-18-017-V/California Department of Fish and Wildlife

10(a)(1)(A) Permit, Conservancy fairy shrimp, longhorn fairy shrimp, Riverside fairy shrimp, San Diego fairy shrimp, vernal pool fairy shrimp, vernal pool tadpole shrimp/No. TE177979-2/U.S. Fish and Wildlife Service

Trained Practitioner, California Rapid Assessment Method (CRAM), Riverine and Estuarine Wetland Modules/California Wetlands Monitoring Workgroup

PROFESSIONAL AFFILIATIONS

California Native Plant Society

Southern California Botanists

Society of Wetland Scientists

EXPERIENCE

With Psomas for 17 years

Experience

Big Tujunga Dam Focused Plant Surveys, Los Angeles County,

CA: Biologist for the Big Tujunga Dam project located along Big Tujunga Wash in Los Angeles County. The project involves approval of a revised Operation and Maintenance Plan for water releases from the Big Tujunga Reservoir resulting from seismic retrofit and spillway modification of the Big Tujunga Dam and the associated increase in reservoir capacity. The impact analysis addresses a 13-mile segment of the Big Tujunga Wash from Big Tujunga Dam to Hansen Dam within the Angeles National Forest and unincorporated Los Angeles County. Allison assisted with focused surveys for special status plant species; kept detailed field notes; mapped locations of any special status species observed; and assisted with the preparation of the special status plant report including preparation of California Natural Diversity Database (CNDDDB) forms for Davidson's bush mallow.

Pacoima Dam Sediment Removal Project, Los Angeles County,

CA: Regulatory Specialist for various biological surveys associated with this project. Los Angeles County Public Works (Public Works) has proposed to remove excess sediment from Pacoima Reservoir to restore its original water storage capacity by sluicing material to a downstream debris basin. In order to evaluate the impacts associated with sediment removal and dam operations, a variety of biological surveys and analysis have been performed. She assisted in the preparation of a Jurisdictional Delineation Report to document wetlands and waters resources under USACE and CDFG jurisdictions. The delineation was conducted based on the USACE's 2008 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region. The project would

remove sediment from Public Works' Pacoima Reservoir in order to restore reservoir capacity and improve dam function.

Orange County Transportation Authority (OCTA), Baseline Biological Surveys for Acquired Properties, Orange County, CA:

Senior Biologist for this project, which has allowed OCTA to establish a biological baseline of five acquired properties, with special attention on species covered under the draft OCTA NCCP/HCP. Surveys were conducted in a manner that allowed the greatest opportunity to document non-Covered Species and habitats that add value to a potential conservation area. Allison mapped vegetation on the sites; conducted focused surveys for special status plant species; and performed jurisdictional delineation surveys. She prepared Letter Reports, Biological Technical Reports, and Jurisdictional Delineation Reports for the sites.

San Diego Creek/Peters Canyon Wash Habitat Mitigation Program, Orange County, CA:

Biologist for this habitat mitigation program (HMP) project. The County of Orange acquired the 23-acre Peters Canyon Wash Mitigation Area parcel in order to provide compensation for impacts to riparian habitat associated with the San Diego Creek Operation and Maintenance project. The HMP includes restoration and enhancement of existing riparian and upland habitat at Peters Canyon Wash. The HMP discusses potential channel degradation and impairment to hydrological functions and the specifics of the mitigation program, including site-preparation guidelines; non-native vegetation removal and plant establishment methods; fuel modification guidelines; long-term site-maintenance and site-performance monitoring; and site status documentation. Additionally, the HMP addresses potential channel degradation and related impairment to hydrological functions by including guidelines for implementing an "Incised Template" in accordance with the Special Area Management Plan (SAMP) for the San Diego Creek Watershed. The project also includes a five-year maintenance and monitoring program. Monitoring activities consist of regular qualitative and quantitative site examinations and the development of site-status documentation. Allison collected data to describe the physical condition of five 150-meter reaches of Peters Canyon Wash according to the SWAMP protocol. In addition, Allison monitored the Orange County Fire Authority's non-native vegetation eradication on a portion of the site.

Three Soft-Bottom Channel Reaches Focused Plant Surveys, Santa Clarita, CA:

Biologist for biological reconnaissance surveys of the following three soft-bottom channel reaches to be added to the Los Angeles County Public Works' existing regulatory compliance permits: the Dominguez Channel, the Los Angeles River, and the San Gabriel River. Biologists conducted general plant and wildlife surveys and mapped vegetation. The surveys focused on determining the potential for special status plant and wildlife species to occur in each soft-bottom channel reach. Upon completion of surveys, a biological constraints letter report was prepared, detailing survey methods, results, and recommendations for future action. She assisted with focused surveys for southern tarplant, a CNPS List 1B species in the Dominguez, Los Angeles River, and San Gabriel River soft-bottom channels. As part of this task, Allison kept detailed field notes, mapped locations of any special status species observed, and assisted with the preparation of the special status plant report including preparation of CNDDDB forms.



Everett Butcher, PE – Psomas

Construction Manager

Everett (Butch) Butcher has over 34 years of experience in providing project management services for large civil engineering construction projects. His background includes program and project development and execution for land development, planning, contracting, construction, environmental, public works, transportation, and utilities.

Experience

City of Hermosa Beach On-Call Project and Construction Management Services – Hermosa Beach, CA:

Project Manager for various state and federally funded capital improvement projects for the City of Hermosa Beach. Services included consultant selection and management, complete project management from planning through construction phase services, bond and grant management, bid and award services, construction management and inspection, and project close-out. Capital improvement projects included Pier Renovation Phase III, Aviation Street Tree Project, Pier Clock Barrier, Pier Concrete Deck Treatment, Manhattan Avenue Street Improvements, Pier Avenue and North Parking Structure Restriping, Beach Restroom Rehabilitation, Community Center, Various Street Improvements, and Police Department HVAC Upgrades.

Rosecrans Avenue Arterial Improvement – Gardena, CA:

Resident Engineer for this \$4 million, Measure R funded project. The project spanned the entire right of way of this major, two-mile-long arterial crossing the City of Gardena. Project work included removal of the center turn lane pavement, installation of raised medians, stamped colored concrete, landscaping, irrigation, driveways, sidewalks, curb ramps, traffic signal improvements, mill and overlay asphalt concrete pavement, and signage and striping. The project required close coordination with the owners of multiple fuel pipelines and other underground facilities within the project boundaries, and with adjacent business and residential property owners and tenants. Resident Engineer for this \$4 million, Measure R funded project. The project spanned the entire right of way of this major, two-mile-long arterial crossing. Project work included removal of the center turn lane pavement, installation of raised medians, stamped colored concrete, landscaping, irrigation, driveways, sidewalks, curb ramps, traffic signal improvements, mill and overlay asphalt concrete pavement, and signage and striping. The project also required close coordination with the owners of multiple fuel pipelines and other underground facilities within the project boundaries, and with adjacent business and residential property owners and tenants.

Vermont Avenue Arterial Improvements Project – Gardena, CA:

Resident Engineer for this \$1.4 million project. The project consisted of work on the western half of 2.4 miles of Vermont Avenue (the eastern half is owned by the City of Los Angeles). Project work included improvements in curb ramps, sidewalks, driveways and traffic signals, full depth remove and replace PCC and AC pavement, grind and overlay AC pavement, slurry seal, and improve and replace signage and striping. Resident Engineer for this \$1.4 million project which consisted of work on 2.4-miles to the City of LA border. Project work

REGISTRATION

2007/CA/General Contractor/A&B/904632

2003/CA/Professional Engineer/Civil/65620

2002/CA/Professional Engineer/Mechanical/32081

EDUCATION

1989/MS/Civil Engineering/ University of Illinois, Urbana

1977/BS/Ocean Engineering/Massachusetts Institute of Technology

EXPERIENCE

With Psomas for 7 years; with other firms for 28 years

included improvements in curb ramps, sidewalks, driveways and traffic signals, full depth remove and replace PCC and AC pavement, grind and overlay AC pavement, slurry seal, and improve and replace signage and striping.

Belmont Plaza Beach Center, Structural Evaluation – Long Beach, CA: Construction Manager for the \$2.9 million demolition project of the seismically inadequate Belmont Olympic Pool facility and adjacent restaurant and locker room structures. Project included salvage of certain items within the building; containment, removal, and disposal of asbestos and lead contaminated materials, removal, and disposal of other hazardous material, such as pool chemicals and electronic waste; removal of interior fittings, fixtures, and furnishings; demolition of the building superstructures; surrounding flatwork, foundations, and piling to two feet below finish grade; dust control; removal and disposal of debris; final and rough grading; and finish cover with beach sand. This high public interest project adjacent to heavily used recreational facilities received daily scrutiny from neighbors and recreational patrons.

City of Long Beach, Demolition of the Existing Belmont Pool Facility – Long Beach, CA: Construction Manager for construction management services for the demolition of the existing Belmont Pool facility. Demolition of the facility was in preparation for the new facility. Demolition activities included salvage of select items from the facility, removal and disposal of hazardous building materials, protection of mature growth trees and grass area in the park to the north of the facility, rough grading and finish grading of building site, and restoration of park irrigation and landscaping.

Alamitos Avenue Rehabilitation Between 7th Street and Orange Avenue – Long Beach, CA: Resident Engineer for this \$1.3 million project which was 4,700 feet long and included the repair and replacement of various existing Portland Cement concrete (PCC) improvements (sidewalk, curb and gutter, curb ramps, driveways, alley entrances, cross gutters, other). Construction also included grinding PCC and asphalt concrete pavement and overlay with AC (2,400 tons) and asphalt rubber hot mix (ARHM) (3,000 tons) as well as minor traffic signal modifications and upgrades and signing and striping.

Orange Avenue Improvements between 52nd and 64th Streets – Long Beach, CA: Construction Manager for this \$2.3M project which was 7,750 feet long and included trimming and root shaving, removal of 29 trees, repair and replacement of existing PCC improvements including sidewalks, curb and gutters, and 70 curb ramps, and replacement of old signals. Construction also included grinding PCC and AC pavement and overlay with AC (3,000 tons) and asphalt rubber hot mix (ARHM) (5,000 tons), as well as minor traffic signal modifications and upgrades and signing and striping.



Charles (Chuck) Littlejohn – Psomas

Inspector

Chuck Littlejohn has 25 years of experience working in various inspection positions. He uses a logical approach to read and interpreting blueprints and product specifications, as well as testing and measurement of material used. He is skilled working with hot mix asphalt/PCC paving, retaining wall construction, drainage structure construction, reviewing project invoices, and monitoring line/grade. Chuck has served on six Central Federal Lands Highway Division projects and has over 14 years of experience working with signage/traffic delineation, reviewing pay notes, responding to RFIs, soil erosion control measures, drafting non-compliance notices, labor compliance/employee interviews, temporary traffic control implementation, and monitoring of environmentally sensitive areas.

EDUCATION

Coursework/Structural Steel and Welding/San Diego State University, CA

Coursework/Reinforced Concrete/San Diego State University, CA

CERTIFICATIONS

American Concrete Institute

Amtrak Safety Certified

MTS Safety Certified

Nuclear Gauge Certified

OSHA Safety Training

Radiation Safety Officer Training

EXPERIENCE

With Psomas for 2 years; with other firms for 19 years

Experience

Road Maintenance - Asphalt Concrete Overlay “B” FY 2017-2018 – San Diego County, CA:

Construction Inspector for this asphalt concrete road resurfacing under as-needed contract #558006 with the County of San Diego. The project includes a water pollution control program, construction site management, traffic control, digouts, tire rubber modified asphalt concrete, asphaltic emulsion fog sealing, adjustment of manhole and survey monument covers, rumble strip, traffic striping painting, thermoplastic pavement markings and concrete work, including curb, gutter, sidewalk, and pedestrian ramps.

2019 Pavement Preservation Program- Chip, Fog, and Slurry Seals – Sonoma County, CA:

Staff Team for this \$6 million pavement preservation program will place over 2,000 tons of Type III slurry, 1.6 tons of Type III micro-surfacing, and 5,600 cubic yards of asphalt concrete replacement surfacing of roads throughout Sonoma County. Responsibilities included contract administration, project team management, monitoring of budget, review and response to RFIs, submittal, potential change orders, and potential claims. Psomas oversaw the implementation of traffic control to ensure compliance the approved traffic control plans and CA MUTCD; prepared pay estimates; and responded to public inquiries as necessary. The project was expected to complete on time and within budget.

Don Edwards Wildlife Reserve Bridge Replacement, South San Francisco Bay, CA:

Construction Inspector for the removal and replacement of a 100-year old, 140 foot long, concrete bridge over a channel with a Kings High Tide specification that the contractor could not conduct work during a Kings High Tide, as well as two protected species of wildlife in the area.

Red Rocks Canyon Loop Road, North Las Vegas, NV: Construction Inspector for removal and replacement of 13 miles of asphalt concrete pavement and construction of three parking lots and three new pre-cast concrete restrooms, new roadside signs and striping.

Deerlodge Road, Dinosaur National Park, Moffatt County, CO:

Construction Inspector for on-site construction inspection that consisted of replacing 12.7 miles of the existing roadway with some isolated locations of

Charles (Chuck)
Littlejohn
(Continued)

cement treated subgrade stabilization, new waterways with a freestanding 18-inch concrete curb and new asphalt concrete pavement, replaced and repair the drainage systems, and relocated the information kiosk and new parking lots.

Grand Canyon National Park, Central Federal Lands Highway Division, Grand Canyon, AZ:

As Construction Inspector, provided on-site contract inspection for replacement of concrete braking pads at the South Entrance Station. Responsibilities included reporting directly to the National Park Service Project Manager by providing daily reports, technical direction, construction inspection, contract record keeping, monthly progress pay, performance of quality assurance, and other project related administrative duties on this project.

Kolob-Terrace Road Rehabilitation, Zion National Park, Central Federal Lands Highway Division, Springdale, UT:

Construction Inspector for on-site contract inspection duties on the 14.7-mile Kolob-Terrace Road project which consisted of pavement rehabilitation, erosion and sediment control, and drainage in environmentally sensitive areas. Responsibilities included reporting directly to the Regional Engineer providing daily reports, technical direction, signing monthly progress payments, construction inspection, contract record keeping, and performance of quality assurance.

SANDAG Amtrak Double Track Expansion, San Diego, CA:

Construction Inspector for the chain and mow clearing for phase I of the track expansion. In this role, Chuck performed inspections on the survey crew, oversaw clearing of planned tree removal, and monitored environmentally sensitive areas to ensure compliance with contract specifications. In addition, he observed the archaeology team for Native American settlement sites to ensure BIA requirements were adhered to.

Eric Schlichter – Psomas

Lead Construction Inspector

Eric has 39 years of experience providing construction management, lead inspection, public relations, and office administrative services on major projects in the Southern California region, including roadways, public infrastructure and buildings, and highway and bridge construction. He is highly experienced in the oversight of numerous operations on large project sites and has excellent communication and documentation skills required for complex and multiple discipline operations. Eric has provided construction management and inspection services for numerous high profile projects. His extensive experience encompasses roadway, Caltrans, and various utility projects.

CERTIFICATIONS

Qualified SWPPP Practitioner/California Stormwater Quality Association

EXPERIENCE

With Psomas for 3 years; with other firms for 36 years

Experience

City of Pomona, Construction Management Inspection and Testing Services FY 08/09 Water and Sewer CIP Program – Pomona,

CA: Construction Manager and Inspector responsible for the installation of approximately 10,000 LF of 16” drains, soil embankment and excavation, landscaping, and traffic control. Inspection services included coordination with survey crews, testing oversight, and daily inspection reports to the City.

City of San Diego, Water and Sewer Group 929 – San Diego, CA:

Part time Resident Engineer for this \$350,000 project located in downtown San Diego, 1st Avenue to 5th Avenue from Elm to Juniper. Work included replacing existing water and sewer with PVC and the construction of 99 ADA curb ramps. In order to avoid retrenching in the same streets, the project also replaced 2,000 LF of old concrete sewer mains with new PVC sewer mains. Complete street resurfacing and/or slurry seal was conducted after completion of the trench caps and acceptance of the mains and laterals. Located in a busy downtown community, Eric was responsible for coordinating traffic control and worked with residents and local businesses to minimize impacts to the community.

City of San Diego, Harbor Drive Sewer Replacement – San Diego,

CA: Construction Manager/Inspector for this 4.4 mile replacement of 16-inch cast iron water pipeline from the Harbor Drive Bridge to the Point Loma Reservoir.

City of Del Mar, Sewer and Water Group 1 – Del Mar, CA: Construction Manager and Inspector for this \$1.75M replacement of existing VCP sewer main and laterals with PVC. The project also included citywide manhole rehabilitation and CIPP.

City of San Diego, Balboa Golf Course HDPE Irrigation System –

San Diego, CA: Construction Manager/Inspector services for the new \$2.3 million HDPE pipe irrigation system and pump station. The project replaced the existing system with a new efficient system at the 18-hole and 9-hole courses. A state-of-the-art computerized satellite controller was installed and integrated to a local weather station. The new system assisted the City in conserving water and reduce watering costs. A total of over 11,500 LF of 8- and 10-inch HDPE main line pipe was installed and 16,000 LF of 6-inch HDPE pipe. In addition, over 120,000 LF of HDPE lateral piping was installed. Services included weekly progress meeting oversight, document control and tracking using web-based

contract manager, on-site inspection, material testing coordination, change order request review and entitlement determination, monthly contractor payment review, schedule review, and project closeout.

City of Carlsbad, 2015 Slurry Seal and Asphalt Overlay Project –

Carlsbad, CA: Construction Manager and Inspector for the City’s annual slurry seal and AC overlay project. Responsible for oversight of daily operations of the contractor and delivering a quality end project. (6/2015-12/2015)

Redondo Beach Pier Improvements – Redondo Beach, CA:

Construction Inspector for removing and replacing existing brick pavement surface and considering existing and improved drainage features. Special consideration was given to existing constraints, such as stairs, entrance, and access doorways and other joint elevations. Existing drainage patterns and elevations were reviewed based on a survey, also reviewed existing utility and drainage as-built plans, performed a site evaluation and developed precise grading and drainage plans based on an approved design concept.

Main Promenade Parking Structure Improvements – Huntington

Beach, CA: Construction inspector responsible for the oversight of the repairs and improvements to the existing parking structure including concrete repairs, waterproofing, mechanical improvements, painting, traffic markings, stair replacements and other miscellaneous repairs.

Redondo Beach Pier Improvements – Redondo Beach, CA:

Construction Inspector for this project which included removing and replacing the existing brick pavement surface and considering existing and improved drainage features. Special consideration was given to existing constraints such as stairs, entrance and access doorways and other joint elevations. Reviewed existing drainage patterns and elevations based on a survey, reviewed existing utility and drainage as-built plans, performed a site evaluation and developed precise grading and drainage plans based on an approved design concept.

Metrolink Station – Buena Park, CA:

Construction Inspector on this \$9 million Metrolink Station which included a 680-foot passenger platforms on each side of the track, passenger waiting area canopies, security and station lighting, automated ticket vending machines, restrooms, water and sewer service, a fire protection system, landscaping, a 300-space parking lot, a large gazebo, and a passenger overpass with towers and elevators. Conveniently situated between a Cal State Fullerton housing complex and a new town house development, the Buena Park station is part of a growing trend toward transit-oriented development. Provided construction management and inspection services for this project.



Robert Duffy, QSP – Psomas

Inspector

Bob Duffy is experienced in the construction industry performing inspection, contract administration and construction management duties on civil construction projects. Various projects were water related construction projects including pipelines, pump stations, pressure reducing stations, lift stations, storage and treatment facilities. They have included CIP retaining walls, box culverts and other reinforced concrete structures, drainage facilities, surface improvements and road construction working with both the public and private sectors.

CERTIFICATIONS

Qualified SWPPP Practitioner/California Stormwater Quality Association

EXPERIENCE

With Psomas for 3 years; with other firms for 38 years

Experience

Carmel River Reroute and Dam Removal, Cal Am, CA: Part of the owner’s representative team on this \$60 million design-build project. The project included building a new access road that involved lowering 30-inch WM, CIDH piles and abutments for a bridge, drilling over 30 wells and a water treatment facility for the dewatering system, sheet pile cofferdam, 72-inch diversion pipeline to carry river flow during construction and construction of a diversion dike to combine with San Clemente Creek.

Normandie Avenue Street Improvements – Gardena, CA:

Construction Inspector for PS&E preparation of the City’s Street Improvement Project consisting of roadway and parkway improvements from Redondo Beach Boulevard and Artesia Boulevard. The project will improve current roadway conditions, improve localized drainage deficiencies within the curb and gutter, and improve overall ADA accessibility.

As-Needed Engineering Services for Implementation of the LACMTA Purple Line Extension - Segment 2 - CM – Beverly Hills, CA:

Construction Inspector for this \$7.85 billion design/build project consisting of a nine-mile extension of the underground rail system from the Wilshire/Western station to Westwood/VA Hospital. It is divided in to three sections with seven stations 800- to 100-feet long, 70 feet wide, and 50 to 60 feet deep and two 20-foot-diameter parallel tunnels separated by 20-foot and 50- to 130-foot-deep constructed by TBMs tunnel boring machines.

SANDAG, Mid-Coast Corridor Transit Project, San Diego, CA: Part of the construction management consulting team performing quality assurance inspection on many features of the project’s civil work including grading, earth-work, drainage, storm drains, track shift subgrade preparation, sub-ballast placement and compaction. Jeff was also involved with SWPPP issues for early release packages including CP Rose Universal Crossover, Rose Creek, Balboa Shoofly, and jack and bore installations crossing under the existing tracks and extending toward North County Transit District (NCTD) and MTS right-of-way edges to protect and upgrade the City of San Diego’s water and wastewater facilities.



Scott Thomas, EIT, LSIT

Surveyor 1 - CADD Drafter

Scott Thomas has 29 years of experience in the surveying and mapping field. His strength as an experienced user of ArcGIS to assist in ArcGIS implementation while at the City of Glendale, as well as to promote data collaboration and training across the city GIS user base. He created ArcSDE geodatabases to organize and centralize GIS resources. Scott also developed procedures and programming for utilizing data collected by traffic signal system. He has prepared staking packages, cut sheets, and other data for survey crews for all aspects of residential and commercial development. This included aerial photo acquisition, boundary research and establishment of survey control, wet and dry utilities, curb and gutter, building layout, up through final monumentation. Scott has worked closely with engineering staff and survey crews to resolve construction design issues. He is highly proficient with AutoCAD Land Desktop and Civil 3D.

REGISTRATION

1991/OR/Professional Land Surveyor in Training/1242

1991/OR/Engineer in Training/9475

EDUCATION

1991/BS/Civil Engineering/
Oregon State University

EXPERIENCE

With Psomas for 7 years;
with other firms for 22
years

Experience

9950 Sulphur Mountain Road – Ojai, CA: Project Surveyor for an ALTA survey at the Larry Hagman Trust property in Ojai. Services included driveway legal description and exhibit, lot line adjustment, and a record of survey.

Beacon Solar Park – Kern County, CA: CADD Designer for the ALTA survey, legal descriptions and topographic mapping of five 350-acre parcels to be developed in solar parks. Filed record of surveys for the five sites with Kern County.

Bishop Amat High School Track and Field Renovation – La Puente, CA: Project Surveyor provided topographic survey to renovate the track and field of Bishop Amat Memorial High School in La Puente, the San Gabriel Valley. The renovations were part of the new master plan for the 50-year old campus.

Domain Apartments – West Hollywood, CA: CADD Designer for civil engineering design services for the development of a 166-unit mixed use apartment project in West Hollywood at the corner of Santa Monica Boulevard and Formosa Avenue. Civil Engineering services include demolition plans, grading plans, storm drain plan, SWPPP and erosion control, permit processing, project management, LEED and construction support. Surveying services include vesting airspace tentative tract map, update ALTA survey and tract map approvals.

Five Lagunas, Redevelopment of Laguna Hills Mall – Laguna Hills, CA: Staff Team for large scale mall redevelopment project in Laguna Hills, CA. The project consisted of commercial redevelopment and new residential buildings. Challenges unique to this project included hydromodification, storm water treatment, and relocation of existing utilities.

Rancho Vista Boulevard Offramp SR-14 Widening (Measure R) – Palmdale, CA: Survey Technician for this \$12 million Measure R Project. The project relieves traffic congestion on SR-14 between Palmdale Boulevard and Rancho Vista Boulevard and is considered an operational improvement project. Major components on the project included the addition of one acceleration lane

by widening south bound SR-14, the widening of an off-ramp to increase storage for both left-turn and right-turn traffic, and realignment of off-ramp terminus to minimize skew at the Rancho Vista intersection.

Triangle Ranch, Sage Development – Los Angeles, CA: Staff Team for this master planned development located in a semi-rural setting near Agoura Hills, California. This community will be landscaped almost exclusively with native plant species and local building materials 90% of the area will be dedicated to open space. Psomas provided civil engineering, planning and entitlement, and survey services.

The Village at San Antonio Center, Phase II – Mountain View, CA: Project Surveyor for the updated ALTA surveys for accurate property details since the original survey was performed by another firm. The property, a 20-acre parcel on the hard corner of a 57-acre regional shopping center previously occupied by a Sears outlet, was rebuilt to a mixed commercial office development. Building on the residential and retail components of Phase I, Phase II consists of retail, restaurant, cinema, and offices.

45th Street East Extension Trunk Sewer Project - Agreement #A-6797 – Palmdale, CA: Project Surveyor For the upsize of existing public sewer mainlines within 45th Street East, from Avenue R to Avenue S (approximately one square mile), increasing the capacity to handle existing and future development flows. This project replaced existing public sewer mainlines, constructed a new VCP relief sewer mainline, and connected to the Los Angeles County Sanitation District (LACSD) No. 20 trunk line. Psomas performed final design engineering, geotechnical, and surveying services. Surveying services included topographic survey, base mapping, and right of way survey.

Glendale Transportation Management Center (GTMC) – Glendale, CA: Instrumental in the conceptual design, development, implementation, and day-to-day operation of Glendale's Transportation Management Center, a \$1.7 million operations center and traffic signal monitoring system. Worked closely with system vendor (BI Tran Systems) to develop a ESRI MapObjects-based version of QuicNet signal system incorporating user interface and functional enhancements. Performed extensive usability testing and software troubleshooting. Developed SQL databases and schema using SQL Server 2000. Designed physical layout of operations center. Configured computers, traffic signal and network equipment, copper and fiber optic modems, and Type 170 controllers. Selected locations for CCTV camera installations and set up CCTV equipment and software.

Transit Priority System – Los Angeles, CA: Instrumental in the conceptual design, development, implementation of the Transit Priority System, which utilized GPS/CDPD modems installed on transit vehicles to deliver location and status data via the Internet to the GTMC, where schedule adherence was calculated and signal timing adjustments were made in real time. Used ArcGIS with the Spatial Analyst and Tracking Analyst extensions to troubleshoot GPS reception and CDPD coverage issues.

Appendix B

Professional Services Agreement



Appendix B

Professional Services Agreement

Hazen has reviewed the District's professional services agreement and can sign the agreement assuming the District updates Section 5.3 - Indemnification to be in compliance with state law.

However, if selected we would like the opportunity to further discuss the following sections with the District:

- Section 6.4 - Ownership of Documents
- Exhibit A IV.
- Exhibit C II.

Appendix C

Introductory Letters





Converse Consultants

Geotechnical Engineering, Environmental & Groundwater Science, Inspection & Testing Services

December 18, 2020

Mr. Kyle Brooks
Principal Proposal Coordinator
Hazen and Sawyer
11260 El Camino Real, Suite 102
San Diego, CA, 92130

Subject: Letter of Commitment for Palmdale Water District's As Needed Professional Engineering Services

Dear Mr. Brooks:

Converse Consultants is pleased to provide its services to Infrastructure Engineering Corporation for the Palmdale Water District's As Needed Professional Engineering Services contract. Converse will provide geotechnical services on this contract.

Thank you for the opportunity to join the Hazen and Sawyer team. Should you have any questions, please do not hesitate to contact the undersigned, who is authorized to obligate the firm.

Sincerely,

Siva K. Sivathasan, Ph.D., P.E., G.E., D.G.E., QSD, F.ASCE
Senior Vice President / Principal Engineer

December 24, 2020

Dave Jones, P.E.
Vice President
Hazen & Sawyer
1149 South Hill Street, Suite 450
Los Angeles, CA 90015

Subject: Letter of Interest for the Palmdale Water District Request for As-Needed Services

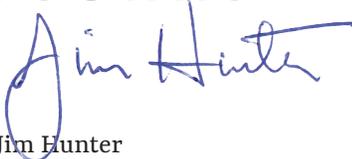
Dear Mr. Jones:

Psomas is pleased to be part of Hazen & Sawyer's team that is submitting a Statement of Qualifications (SOQ) to the Palmdale Water District to provide Construction Management, Environmental Planning Consulting, and Land Surveying/Geospatial Services for upcoming projects as part of the District's larger request for Engineering Qualifications. Psomas is committed to providing client-centered services and high-quality work products. Through our many years of service to agencies throughout Southern California, we have learned that **the most important attributes a consultant can offer a client are expertise/experience, responsiveness, flexibility, and understanding of community concerns**. Our primary objective is to focus on assuring integrity, quality and legal defensibility of analysis and processes, culminating in win-win solutions and successful projects.

We look forward to partnering with the Hazen & Sawyer team to assist Palmdale Water District on upcoming projects involving Construction Management, California Environmental Quality Act (CEQA) and/or National Environmental Policy Act (NEPA) consulting, and Land Survey/Geospatial services. These service areas also include our wide range of field, and technical support services. Our clients are the top priority and we look forward to the opportunity to provide the District with professional services that exceed your expectations. Should you have any questions or would like more information about Psomas, please do not hesitate to contact me at (714) 747.8110 or at @psomas.com.

Sincerely,

PSOMAS



Jim Hunter
Vice President / Director of Environmental Services



Monday, December 21, 2020

Dave Jones, P.E., Vice President
Hazen and Sawyer
800 W. Sixth Street, Suite 400
Los Angeles, CA 90017

RE: As-Needed Laboratory Testing Professional Services for Palmdale Water District

Dear Sir,

Weck Laboratories is interested in teaming with Hazen and Sawyer to provide laboratory testing services to the Palmdale Water District.

Weck Laboratories, Inc. has been involved in water quality testing for over 56 years. We are a single location company located at 14859 Clark Avenue, City of Industry, California 91745. We currently have 70 employees. Attached are documents giving an overview on our company, a statement of qualifications, certifications and linked here, a short (<4 min.) video on our [Emergent Contaminants capabilities](#).

In summary, the following items are unique or advantageous capabilities that our laboratory can provide to the department to meet regulatory requirements:

- Extensive experience with drinking & wastewater programs
- NELAP certified, more stringent than basic ELAP certification with double the number of proficiency samples required
- Excellent reputation in the industry – consistently scoring high on PT samples
- Internet Access to Data via Element Web
- Personnel available 24 hours a day, 7 days a week, 365 days a year for any emergency situation
- Laboratory is approved by EPA for all UCMR cycles (1 thru 4)

We hope you find our capabilities the best suited for your program. Should you need more information or would like to come tour our facility, please contact me at 805-760-4548 or leo.raab@wecklabs.com.

Sincerely,

Leo Raab
Director of Business Development

Appendix D

Subconsultant's Rate Schedule



CONVERSE CONSULTANTS
Prevailing Wage Schedule of Fees
Geotech Personnel

Introduction

It is the objective of Converse Consultants to provide its clients with quality professional and technical services and a continuing source of professional advice and opinions. Services will be performed in a manner consistent with that level of care and skill ordinarily exercised by members of the profession currently practicing in the same locality under similar conditions. This fee schedule is valid through December 31, 2021.

Hourly Charges for Personnel

Staff assignments will depend on personnel availability, job complexity, project site location, and experience level required to satisfy the technical requirements of the project and to meet the prevailing standard of professional care.

Field Technical Services (all including vehicle and equipment)

Construction Inspector – ACI/ICC and/or AWS/CWI certified (concrete, post-tension, masonry, structural steel, fireproofing; includes concrete batch plant and local steel fabrication inspections)	\$125
DSA Masonry Inspector	125
Non-Destructive Testing Inspector (ultrasonic, magnetic particle, dye penetrant, skidmore, pull testing, torque testing, Schmidt hammer, and pachometer)	130
Soils Technician (soil, base, asphalt concrete, and moisture emission testing)	125
Sample Pick-Up	50

Professional Services (consultation for field and office, if requested)

Staff Professional	\$125
Senior Staff Professional.....	125
Project Professional	135
Project Manager.....	160
Senior Professional	170
Principal Professional.....	210

Laboratory Testing

Laboratory Technician.....	Per Test
(Unit prices for routine tests quoted upon request; see Geotechnical Laboratory Testing and Materials Testing Services fee schedules, unit price including report and engineer's review time.)	

Office Support

Clerical/Word Processing.....	\$75
Drafting.....	80
CAD Operator/Drafting Manager.....	80

Overtime and special shift rates for Field Technical Services personnel are determined in accordance with Prevailing Wage law. Travel time to and from the job site will be charged at the hourly rates for the appropriate personnel.

Expenses

1. Exploration expenses (drilling, trenching, etc.) are charged at cost plus fifteen percent.
2. Travel and subsistence expenses (transportation, room and board, etc.) for individuals on projects requiring travel and/or living 50 miles away from the project site are charged at cost plus fifteen percent.
3. Automobile and truck expenses are charged at cost plus fifteen percent (rentals) or at a rate of fifty-five cents per mile for company-owned vehicles traveling between principal office and project.
4. Other out-of-pocket direct project expenses (aerial photos, long-distance telephone calls, permits, bonds, outside printing services, tests, etc.) are charged at cost plus fifteen percent.

Invoices

1. Invoices will be submitted to the Client on a monthly basis, and a final bill will be submitted upon completion of services.
2. Payment is due upon presentation of invoice and is past-due thirty days from invoice date. In the event Client fails to make any payment to Converse when due, Converse may immediately cease work hereunder until said payment, together with a service charge at the rate of eighteen percent per annum (but not exceeding the maximum allowed by law) from the due date, has been received. Further, Converse may at its sole option and discretion refuse to perform any further work irrespective of payment from Client in the event Client fails to pay Converse for services when said payments are due.
3. Client shall pay attorneys' fees or other costs incurred in collecting any delinquent amount.

General Conditions

The terms and provisions of the Converse General Conditions are incorporated into this fee schedule as though set forth in full. If a copy of the General Conditions does not accompany this fee schedule, Client should request a copy from this office.

CONVERSE CONSULTANTS

Schedule of Fees – Materials Testing Services

Compensation for laboratory testing services will be based on rates in accordance with this fee schedule which includes test report(s) and engineering time. Costs of tests not on this schedule will be by quote and/or in accordance with our current hourly fee schedule. Our services will be performed in accordance with the General Conditions. This fee schedule is valid through December 31, 2021.

AGGREGATES

Moisture Content, ASTM D2216	15.00
Particle Size Analysis	
Coarse, ASTM C136, each.....	100.00
Coarse and Fine, ASTM C136 & C137), each.....	180.00
Specific Gravity & Absorption	
Coarse Aggregate, ASTM C127	85.00
Fine Aggregate, ASTM C128	85.00
Unit Weight per Cubic Foot, ASTM C29	75.00
Soundness, Sodium or Magnesium, ASTM C88, each.....	200.00
Potential Alkali Reactivity, ASTM D289	300.00
Freeze Thaw Soundness.....	175.00
Los Angeles Abrasion, per class, ASTM C131, C535.....	210.00
Sand Equivalent, ASTM D2419.....	90.00
Lightweight Particles, ASTM C123, each.....	85.00
Clay Lumps & Friable Particles, ASTM C142, each.....	120.00
Stripping Test, ASTM D1664, each	85.00
Organic Impurities, ASTM C40	75.00
Durability	By Quote

CONCRETE TESTS

Laboratory Trial Batch, ASTM C192	By Quote
Laboratory Mix Design, Historical Data	By Quote
Compression Test, 6"x12" Cylinder, ASTM C39, each.....	35.00
Lightweight Concrete	
Compression	35.00
Unit Weight.....	35.00
Specimen Preparation, Trimming or Coring, each	60.00
Bond Strength, ASTM C321	
Prepared by Converse.....	150.00
Prepared by Others	80.00
Core Compression Test, ASTM C12, each.....	60.00
Flexure Test, 6"x6" Beams, ASTM C78, each.....	110.00
Modulus of Elasticity, Static, ASTM C469, each	150.00
Length Change, ASTM C157, 3 bars, 5 readings each, up to 26 days.....	320.00
Splitting Tensile, 6"x12" Cylinders, each.....	80.00
Field Concrete Control (sampling, slump, temperature, cast 4 cylinders, molds, cylinder pick-up, within 10 miles of office, stand-by extra), ASTM/UBC, hourly rate schedule, or each cylinder.....	95.00
Field Concrete Control (same as above plus air content test), ASTM/UBC, each cylinder.....	95.00
Hold Cylinder.....	7.00
Cylinder Mold, sent to job site but not cast by Converse or returned to Converse.....	5.00

MASONRY (ASTM C140, E447, UBC STANDARD 24-22)

Moisture Content, as received, each.....	20.00
Absorption, each.....	50.00
Compression, each.....	55.00
Shrinkage, ASTM C426, each	100.00
Net Area and Volume, each.....	25.00
Masonry Blocks, per set of 9.....	450.00
Masonry Core Compression, each.....	55.00
Masonry Core Shear, each.....	55.00
Masonry Core Trimming, each.....	55.00
Compression Test, grouted prisms, 8"x8"x16", each.....	120.00
Compression Test, grouted prisms, 12"x16"x16", each.....	130.00
Compression Test	
2"x4" Mortar Cylinder, each	35.00
3"x6" Grout Prisms, each.....	35.00
2" Cubes, ASTM C109, each.....	35.00
Cast by Others.....	35.00
Mortar or Grout Mix Designs.....	By Quote

FIREPROOFING TESTS

Oven Dry Density, per sample	60.00
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MOISTURE EMISSION TEST

Moisture Emission Test Kit.....	60.00
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ASPHALTIC CONCRETE

Stability, Flow, and Unit Weight, ASTM D6927	200.00
Marshall ASTM D1559, ASTM D2726.....	200.00
Measured Maximum Specific Gravity of Mix, ASTM D2041, Rice Method, each	95.00
Void Analysis of Cores or Marshall Specimens, Calculations Only, ASTM D3203, set of 2 or 3.....	60.00
Laboratory Mixing of Asphalt & Concrete, per sample.....	75.00
Complete Asphalt Concrete Mix Design	
Hveem or Marshall	By Quote
Extraction of Asphalt and Gradation, ASTM D2172, Method B, or California 310, including ash correction, each	210.00
Extraction of Rubberized Asphalt & Gradation, each.....	250.00
Specific Gravity, ASTM D2726 or ASTM D1188	
Uncoated.....	95.00
Coated.....	105.00
Immersion-Compression	400.00
Particle Coating, ASTM D2489	55.00
Stripping, ASTM D1664	70.00
Moisture or Volatile Distillates in Paving Mixtures, or Materials Containing Petroleum Products or By-Products.....	220.00
Retained Strength, ASTM D1074/D1075, 6 specimens.....	By Quote
Retained Stability, Mil, Std, 520A, Method 104, 6 specimens	By Quote
CBR, ASTM D1883, including M/D Curve, 1 point	350.00
Asphalt Temperature.....	15.00

STRUCTURAL STEEL

Tensile Test #9 Bar or Smaller, each	50.00
Bend Test #9 Bar or Smaller, each	50.00
Tensile Test #10 Bar or Greater, each	280.00
Tensile Test #14 Bar, each	310.00
Rebar Coupler Tensile Test	100.00
Tensile Test, Welded #9 Bar or Smaller, each	100.00
Tensile Test, Welded #10 Bar or Greater, each	280.00
Tensile Test, Welded #14 Bar, each	310.00
Tensile Test, Mechanically Spliced, #9 Bar or Smaller, each	180.00
Tensile Test, Mechanically Spliced, #10 Bar or Greater, each	350.00

HIGH STRENGTH BOLT, NUT, AND WASHER TESTING

Wedge Tensile Test, A490 Bolts	
Under 100,000 lbs., each	55.00
Over 100,000 lbs., each	65.00
Wedge Tensile Test, A325 Bolts	
Under 100,000 lbs., each	60.00
Tensile Test, Anchor Bolts, tested with displacement transducers, each.....	300.00
Nut Hardness, Proof & Cone Proof Load Test, each	50.00
Washer Hardness, each.....	35.00
A325 or A490, Bolt Hardness Only, each.....	35.00
Bolt A325 or A490 Wedge Tensile	
Under 100,000 lbs. & Hardness, each.....	85.00
Over 100,000 lbs. & Hardness, each.....	100.00
Bolt, Nut & Washer, all tests per set with bolts	
Under 100,000 lbs.	300.00
Over 100,000 lbs.	380.00

See *Schedule of Fees – Geotechnical Laboratory Testing* for soil testing. Hourly rates are available upon request. Field Laboratory rates are available upon request. Listed unit rates are based upon the assumption that samples will be delivered to our laboratory at no cost to Converse.

SCHEDULE AND RATES

Surveying

Rates will be subject to a 3% escalation per year of the contract

Office Services

Rates	Classification Titles
\$260.....	Project Director/Principal-in-Charge
\$230.....	Contract Manager
\$225.....	Survey Senior Project Manager
\$190.....	Survey Project Manager/Manager
\$150.....	Project Surveyors
\$120.....	Administrative and Project Assistant

Field Services

Rates	Classification Titles
\$425.....	Three-Person Survey Party
\$305.....	Two-Person Survey Party
\$205.....	On-Person Survey Party
\$160.....	Field Engineer

Hourly rates for field survey parties include normal usage of electronic distance measuring equipment and survey vehicle expenses.

Per Diem is calculated at current State Department of Transportation rates (or other appropriate agency rate)

Reimbursables

Mileage at current IRS allowable rate and parking expenses incurred by office employees are charged at cost. Prints, plots, messenger service, subsistence, air travel, and other direct expenses will be charged at cost plus 10 percent. The services of outside consultants will be charged at cost plus 15 percent.

The above schedule is for straight time. Overtime will be charged at 135 percent of the standard hourly rates. Sundays and holidays will be charged at 170 percent of the standard hourly rates.

Construction Management and Inspection

Rates will be subject to a 3% escalation per year of the contract

Rates	Classification Titles
\$260	Project Director/Principal-in-Charge
\$230	Contract Manager
\$220	QA/QC Manager
\$230	Senior Construction Manager/Resident Engineer 3
\$220	Senior Construction Manager/Resident Engineer 2
\$210	Senior Construction Manager/Resident Engineer 1
\$200	Structures Representative 3
\$190	Structures Representative 2
\$180	Structures Representative 1
\$190	Construction Manager/Resident Engineer 3
\$180	Construction Manager/Resident Engineer 2
\$170	Construction Manager/Resident Engineer 1
\$185	Inspector (Prevailing Wage) 3
\$175	Inspector (Prevailing Wage) 2
\$165	Inspector (Prevailing Wage) 1
\$165	Scheduler
\$165	Estimator
\$210	Constructability Reviewer
\$150	Office Engineer
\$ 95	Administrative Support

-
- ▶ Rates include miscellaneous related costs: vehicle, cell phone, digital camera, and standard tools and equipment. All other direct expenses will be billed at cost.
 - ▶ Overtime will be charged at 135 percent of the regular hourly rate. Sundays and holidays will be charged at 170 percent of the regular hourly rate.
 - ▶ A shift which commences after 2:00pm or before 4:00am, during any 24-hour period, commencing at 12:01am is subject to a 12.5 percent differential.

Environmental Consulting

Rates will be subject to a 3% escalation per year of the contract

Rates	Classification Titles
\$265.....	Principal in Charge
\$218.....	Tehchnical Director
\$220.....	Senior Project Manager
\$157.....	Project Manager
\$195.....	Sr. Environmental Planner I / Sr. Biologist I
\$180.....	Sr. Environmental Planner II / Sr. Biologist II
\$165.....	Environmental Planner I / Biologist I
\$150.....	Environmental Planner II / Biologist II
\$135.....	Environmental Planner III / Biologist III
\$120.....	Technician - Environmental Planning / Biology
\$105.....	Analyst - Environmental Planning / Biology
\$125.....	Field Biologist / Field Paleontologist / Field Archaeologist
\$ 95.....	Archaeo / Paleo Monitor
\$120.....	Technical Writer
\$110.....	Word Processor / Project Assistant
\$ 90.....	Administrative Assistant
\$135.....	Sr. GIS Designer / Sr. CAD Designer
\$100.....	GIS Specialist / CAD Designer

Reimbursables

- ▶ Mileage..... Federal Standard Mileage Rate
- ▶ Reprographic (Outside) at cost plus 10%
- ▶ Reprographic (Inside)..... Request Printing fee sheet
- ▶ Other Out-of-pocket Expenses..... at cost plus 10%
- ▶ Subconsultants..... at cost plus 10%
- ▶ Plotting:
 - Color Bond\$1.50 per sq ft
 - Color Photo Gloss.....\$2.50 per sq ft
- ▶ Aerial Maps: Fewer than 500 acres..... \$200
- ▶ Aerial Maps: 500 - 1,500 acres..... \$350
- ▶ Aerial Maps: Greater than 1,500 acres..... \$500

Rates are current as of 12-20-2020

Weck Laboratories - 2016 - Fee Schedule



Wet Chemistry Department



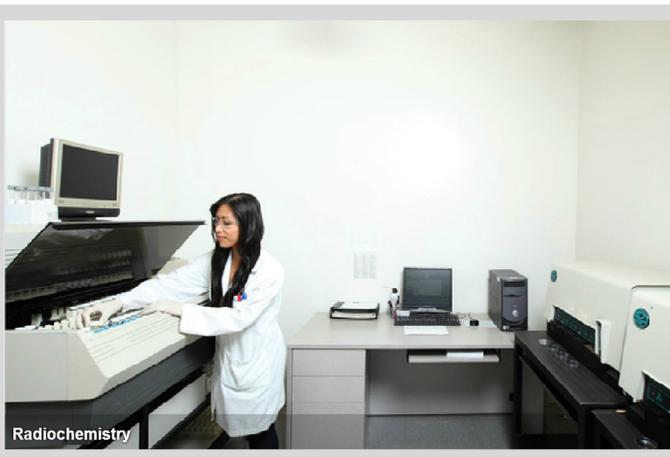
Triple Quadrupole Gas Chromatography/Mass Spectrometry (GC/MS)



Inductively Coupled Plasma-Mass Spectrometry (ICP/MS)



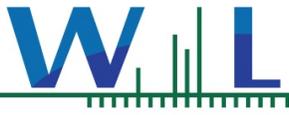
High-Pressure Liquid Chromatography (HPLC) Department



Radiochemistry



Triple Quadrupole Liquid Chromatography/Mass Spectrometry (LC/MS)



General Information

Weck Laboratories Inc. is a full service environmental testing laboratory, providing high quality services since 1964. More information can be obtained from our web page at www.wecklabs.com or in our Statement of Qualifications.

Sample Delivery

Clients can submit samples to the lab within our normal working hours of 8:00 AM to 5:30 PM Monday through Friday and 8:00 AM to 12:00 PM Saturdays. Sample pickup and delivery can be arranged at an additional charge. If samples must be delivered out of the normal working hours, prior notification for confirmation of acceptance is required.

Sample Receiving

All samples should be submitted in the proper conditions, accompanied by written instructions with the following minimum information:

- Company name, address, phone number and person receiving the report.
- Type of samples.
- Date and time of sampling.
- Name of sampler.
- Analyses needed on each sample.
- Project name or sample site.
- Billing information (P.O. number, address, etc.).

Also, any other additional information that can be provided by the client, such as ranges of expected results or description of the sampling site is very useful for expeditious testing, and the interpretation of results.

Sample Containers

Bottles with preservatives and shipping containers can be provided if requested. Shipment of these items to the sampling site can also be arranged at an additional charge. Specific sampling instructions are also available.

Sample Storage

After analyses are completed and a report is issued, the samples are kept for 30 days unless other arrangements are made in advance to archive the samples. After this period we will dispose of non-hazardous samples. The disposal of hazardous samples might be subject to a fee charged to the client, unless arrangements are made to return or pick up the hazardous samples.

Analytical Methods

The test methods used in the Laboratory are in substantial agreement with the methodology published by the USEPA and the Standard Methods for the Examination of Water and Wastewater, current approved Edition. Other methods used follow the guidelines of the AOAC, ASTM, NIOSH and other recognized methodologies. Some methods have been modified in order to achieve special reporting limits or to be applied to other matrices. Laboratory standard operating procedures (SOPs) are written for all methods in use at the laboratory.

Turn Around Time and Reporting

Analytical reports are provided in Adobe PDF format via www.wecklabs.com. Paper hardcopy reports can be provided at additional cost. For most analyses the turn around time is up to 15 working days, depending on the type and number of tests needed. RUSH analyses are available and should be arranged in advance. A Surcharge applies to rush orders, Weekends and Holidays are not counted as additional days for rush analysis. Samples that require a rush analysis to meet holding times will be subject to the rush surcharge. For rush analyses a copy of the report can be sent by FAX or email. Electronic reporting or special forms are available for a nominal fee. Weekend and holiday charge for bacteria check or BOD5 testing will be \$80.00 per day per batch of samples.

Change in prices

Prices for the analyses and special fees are subject to change without notice, however quotations that are still valid will not change.

Discounts

Discounts are available for multiple samples received at the same time or for long-term contracts. The discounts will be determined on a case-by-case basis. Please call for additional information.

***Credit Terms***

Terms are Net 30 Days on established accounts. Until proper credit is established we request prepayment or COD. To establish credit, please submit 4 current references including telephone and fax numbers. Interest may be added to overdue accounts at a rate of 1.5 % per month. Delinquent accounts are liable for collection charges incurred by Weck Laboratories and can include legal costs and collection agencies fees.

Minimum Charge

There is a minimum charge of \$200 per work order. For canceled jobs there will be a charge reflecting the work that has been done prior to cancellation. Samples that are logged in but put on hold or not analyzed may be subject to a login and storage fee of \$15.00 per sample.

Consultation

Limited free consultation is offered to clients, however a fee will be charged if extensive involvement is needed. Our staff offers a broad range of expertise in chemistry as well as environmental science and compliance with federal, state and local regulations in the fields of wastewater, drinking water, hazardous waste and air pollution.

Field Service

Weck Laboratories provides sampling of industrial wastewater for self-monitoring programs with the local Sanitation Districts; other sampling (drinking water, hazardous waste, soil etc.) can also be arranged. Sample pick up and courier services are also available for Southern California locations with prior notice.

Electronic Deliverables

Weck Laboratories can provide analytical results and QC data in a wide variety of electronic standard formats. Special EDD requirements can also be accommodated due to the flexibility of our LIMS. Additional fees may apply for customized electronic reporting. Please contact our customer services staff for more details on electronic reporting.

Quality Control

The analytical procedures, from the sampling to the reporting, follow strict Quality Control operations, as reflected in the Quality Assurance manual, which is available upon request. The Quality Assurance Program includes control of sample containers, preparation, analyses of blanks, matrix spikes, duplicates, certified check samples, proficiency evaluation and blind check samples, cross-check between different methods, different levels of data reviewing and permanent archiving of QC data. Standard Quality Control reports are provided at no charge. Other packages are available at an additional charge. Quality control packages requested after the initial report will result in higher charges due to data retrieval. Contact our QA manager for more information on Quality Assurance issues.

Limits of Liability

Weck Laboratories, Inc. performs services in accordance with normal standards for the industry, using generally accepted analytical methods following guidelines published by the USEPA, Standard Methods for the Examination of Water and Wastewater and other recognized public and private organizations. When necessary, Weck Laboratories reserves the right to deviate from these methodologies in order to analyze special matrices or analytes based on reasonable judgment. The total liability of Weck Laboratories, its officers, employees, agents or successors to the client arising out of the services provided, shall not exceed the invoiced amount for such services, notwithstanding any provision to the contrary in any client purchase order or contract, unless different terms are authorized in advance in writing, by an officer of the Company. Full Terms & Conditions at www.wecklabs.com

Fee schedule

The following pages contain the individual prices for services provided by Weck Laboratories. The prices can be used to estimate the cost for the analytical portion of a particular project, however the laboratory should be contacted to obtain an accurate quotation since in many cases discounts can be applied for multiple samples, for large projects or long term monitoring; besides, our technical personnel can assist in accurately selecting the analytical protocols needed for a particular project taking into consideration all regulatory and technical aspects in order to provide a cost effective solution.



Inorganics & General Chemistry (Water)	Method	Price
Alkalinity, Bicarbonate	SM 2320B	\$32
Alkalinity, Carbonate	SM 2320B	\$32
Alkalinity, Hydroxide	SM 2320B	\$32
Alkalinity, total	SM 2320B	\$32
Ammonia-N	EPA 350.1	\$32
Asbestos	EPA 100.2	\$159 ¹
Biochemical Oxygen Demand	SM 5210 B	\$58
Biochemical Oxygen Demand, Carbonaceous	SM 5210 B	\$58
Bromate	EPA 300.1	\$69
Bromate, low level	EPA 326.0	\$106
Bromide	EPA 300.0	\$32
Bromide, low level	EPA 300.1/326	\$69
Carbon Dioxide	SM 4500-CO2 D	\$51
Carbon, Dissolved Organic (DOC)	SM 5310C	\$64
Carbon, Total Organic (TOC) Combustion-IR	SM 5310 B	\$51
Carbon, Total Organic (TOC) Persulfate-UV	SM 5310 C	\$51
Chemical Oxygen Demand	EPA 410.4	\$37
Chloramine	SM 4500-ClO2 D	\$90
Chlorate	EPA 300.1	\$69
Chloride	EPA 300.0	\$32
Chlorine Demand	SM 2350 B	\$191
Chlorine Dioxide	SM 4500-ClO2 D	\$74
Chlorine, Residual, Free	SM 4500-Cl G	\$37
Chlorine, Residual, Total	SM 4500-Cl G	\$37
Chlorite	EPA 300.1	\$69
Chlorite, UV low level	EPA 326	\$69
Chlorophyll	SM 10200H	\$106
Chromium, Hexavalent	EPA 7196A	\$48
Chromium, Hexavalent	SM 3500-Cr D	\$48
Chromium, Hexavalent (IC)	EPA 218.6	\$106
Chromium, Hexavalent (IC)	EPA 218.7	\$127
Chromium, Hexavalent (IC)	EPA 7199	\$106
Color	SM 2120B	\$19
Cyanates	SM 4500-CN L	\$75
Cyanide, amenable	ASTM D7511	\$80
Cyanide, free	OIA 1677	\$53
Cyanide, total (drinking water)	EPA 335.4	\$53
Cyanide, total (non-potable water)	ASTM D7511	\$53
Cyanide, WAD	EPA 335.4	\$53
Density	ASTM D1475	\$32
Flashpoint	ASTM D93/EPA 1010	\$53
Fluoride	EPA 300.0	\$32
Halogens, Total Organic (TOX)	EPA 9020B	\$127
Halogens, Total Organic (TOX)	SM 5320 B	\$80
Hardness	EPA 200.7	\$48
Hydrogen Peroxide low level	FMC	\$90
Ignitability / Flashpoint	EPA 1010	\$53
Iodide	EPA 9056 M	\$74
Iron, Ferrous	SM 3500-Fe B	\$32
Langelier index	SM 2330 B	\$95
Nitrate-N	EPA 353.2	\$32
Nitrate-NO3	EPA 353.2	\$32
Nitrite-N	EPA 353.2	\$32
Nitrite-NO2	EPA 353.2	\$32



Nitrogen, Inorganic	EPA 350.1+353.2	\$159
Nitrogen, Organic	SM4500Norg B	\$106
Nitrogen, Total	EPA 353.2+351.2	\$106
Nitrogen, Total Kjeldahl (TKN)	EPA 351.2	\$80
NO ₂ +NO ₃ -N	EPA 353.2	\$42
Odor	EPA 140.1	\$19
Oil and Grease	EPA 1664A	\$58
Oil and Grease, Non-polar	EPA 1664A	\$69
Orthophosphate-P	EPA 365.3	\$32
Orthophosphate-PO ₄	EPA 365.3	\$32
Oxidation-Reduction Potential of Water	SM 2580B	\$27
Oxygen, Dissolved	SM 4500-O G	\$32
Partical size distribution	ASTM D4464M	\$212
Perchlorate (IC)	EPA 314.0	\$64
Perchlorate (LC/MS/MS)	EPA 331.0	\$186
Perchlorate (LC/MS/MS)	EPA 6850	\$186
Persulfate by Permanganate titration	Klozur Titration	\$32
pH	SM 4500-H+ B	\$13
Phenolics	EPA 420.4	\$69
Phosphate, Total as PO ₄	EPA 365.3	\$48
Phosphorus, Total as P	EPA 365.3	\$48
Phosphorus, total acid hydrolizable	EPA 365.3	\$58
Salinity	SM 2520 B	\$37
Sodium Absorption Ratio (SAR)	EPA 200.7	\$80
Solids, Settleable (SS)	SM 2540 F	\$32
Solids, Total (TS)	SM 2540 B	\$32
Solids, Total Dissolved (TDS)	SM 2540 C	\$32
Solids, Total Suspended (TSS)	SM 2540 D	\$32
Solids, Total Volatile (TVS)	EPA 160.4	\$32
Solids, Volatile Suspended (VSS)	EPA 160.4	\$32
Specific Conductance (EC)	SM 2510 B	\$27
Specific Gravity	ASTM D1429	\$32
Sulfate	EPA 300.0	\$32
Sulfide, dissolved	SM 4500-S2 D	\$27
Sulfite	SM 4500-SO3 B	\$42
Surfactants (Cobalt Thiocyanate Active Substances)	SM 5540 D	\$127
Surfactants (Methylene Blue Active Substances)	SM 5540 C	\$48
Thiosulfate	LACSD 253B	\$48
Turbidity	EPA 180.1	\$27
UV254	SM 5910 B	\$53

Microbiology (Water)	Method	Price
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Coliform, E.Coli	SM 9221 F	\$21
Coliform, E.Coli - Quantitray	SM 9223 B	\$32
Coliform, Fecal	SM 9221 E	\$48
Coliform, Total	SM 9221 B	\$48
Coliform, Total & E.Coli (presence/absence) Colilert	SM 9223 B	\$21
Coliform, Total & E.Coli Quantitray	SM 9223 B	\$32
Coliform Group Bacterial Identification	API 20E	\$53
Enterococcus - Quantitray	Enterolert	\$69
Enterococcus - MF	EPA 1600	\$90
Fecal Streptococcus	SM 9230B	\$69
Heterotrophic Plate Count	SM 9215 B	\$32
Assimilable Organic Carbon	SM 9217B	\$530

Radiochemistry (Water)	Method	Price
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Gross Alpha	EPA 900.0	\$53
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Gross Beta	EPA 900.0	\$53
Gross Alpha & Beta	EPA 900.0	\$69
Uranium	EPA 200.8	\$95
Radium 226	EPA 903.1	\$159 ¹
Radium 228	EPA Ra-05	\$212 ¹
Combined Radium 226 & 228	EPA 903.1 & Ra-05	\$371 ¹
Gross radium	EPA 903.0	\$80 ¹
Tritium	EPA 906.0	\$95 ¹
Strontium 90	EPA 905.0	\$191 ¹
Radon	SM7500N	\$69

Metals by ICP & ICPMS (Water)				Method	Price
Aluminum	EPA 200.7	EPA 200.8	EPA 6010B	EPA 6020	\$21
Antimony	EPA 200.7	EPA 200.8	EPA 6010B	EPA 6020	\$21
Arsenic	EPA 200.7	EPA 200.8	EPA 6010B	EPA 6020	\$21
Arsenic Speciation (As3+, As5+)		EPA 200.8			\$212
Barium	EPA 200.7	EPA 200.8	EPA 6010B	EPA 6020	\$21
Beryllium	EPA 200.7	EPA 200.8	EPA 6010B	EPA 6020	\$21
Bismuth		EPA 200.8		EPA 6020	\$37
Boron	EPA 200.7	EPA 200.8	EPA 6010B		\$21
Cadmium	EPA 200.7	EPA 200.8	EPA 6010B	EPA 6020	\$21
Calcium	EPA 200.7	EPA 200.8	EPA 6010B		\$21
Cerium	EPA 200.7	EPA 200.8		EPA 6020	\$37
Cesium		EPA 200.8		EPA 6020	\$37
Chromium	EPA 200.7	EPA 200.8	EPA 6010B	EPA 6020	\$21
Cobalt	EPA 200.7	EPA 200.8	EPA 6010B	EPA 6020	\$21
Copper	EPA 200.7	EPA 200.8	EPA 6010B	EPA 6020	\$21
Dysprosium		EPA 200.8		EPA 6020	\$37
Erbium		EPA 200.8		EPA 6020	\$37
Europium		EPA 200.8			\$37
Gadolinium		EPA 200.8		EPA 6020	\$37
Gallium		EPA 200.8		EPA 6020	\$37
Germanium		EPA 200.8			\$37
Gold		EPA 200.8		EPA 6020	\$37
Holmium		EPA 200.8		EPA 6020	\$37
Indium		EPA 200.8		EPA 6020	\$37
Iridium		EPA 200.8		EPA 6020	\$37
Iron	EPA 200.7	EPA 200.8	EPA 6010B	EPA 6020	\$21
Lanthanum		EPA 200.8			\$37
Lead	EPA 200.7	EPA 200.8	EPA 6010B	EPA 6020	\$21
Lithium	EPA 200.7	EPA 200.8	EPA 6010B		\$21
Lutetium		EPA 200.8		EPA 6020	\$37
Magnesium	EPA 200.7	EPA 200.8	EPA 6010B		\$21
Manganese	EPA 200.7	EPA 200.8	EPA 6010B	EPA 6020	\$21
Molybdenum	EPA 200.7	EPA 200.8	EPA 6010B	EPA 6020	\$21
Neodymium		EPA 200.8		EPA 6020	\$37
Nickel	EPA 200.7	EPA 200.8	EPA 6010B	EPA 6020	\$21
Phosphorus	EPA 200.7		EPA 6010B		\$37
Potassium	EPA 200.7	EPA 200.8	EPA 6010B	EPA 6020	\$21
Praseodymium		EPA 200.8		EPA 6020	\$37
Rhenium				EPA 6020	\$37
Rhodium		EPA 200.8			\$37
Rubidium		EPA 200.8			\$37
Ruthenium		EPA 200.8			\$37
Samarium		EPA 200.8		EPA 6020	\$37
Scandium		EPA 200.8		EPA 6020	\$37



Selenium	EPA 200.7	EPA 200.8	EPA 6010B	EPA 6020	\$21
Selenium Speciation (Se4+ and Se6+)		EPA 200.8			\$212
Silica	EPA 200.7	EPA 200.8	EPA 6010B		\$21
Silicon	EPA 200.7		EPA 6010B		\$21
Silver	EPA 200.7	EPA 200.8	EPA 6010B	EPA 6020	\$21
Sodium	EPA 200.7	EPA 200.8	EPA 6010B	EPA 6020	\$21
Strontium	EPA 200.7	EPA 200.8	EPA 6010B		\$37
Sulfur	EPA 200.7		EPA 6010B		\$58
Tantalum		EPA 200.8			\$37
Tellurium		EPA 200.8		EPA 6020	\$37
Terbium		EPA 200.8		EPA 6020	\$37
Thallium	EPA 200.7	EPA 200.8	EPA 6010B	EPA 6020	\$21
Thorium		EPA 200.8		EPA 6020	\$37
Tin	EPA 200.7	EPA 200.8	EPA 6010B	EPA 6020	\$37
Titanium	EPA 200.7	EPA 200.8		EPA 6020	\$37
Tungsten		EPA 200.8		EPA 6020	\$37
Uranium		EPA 200.8		EPA 6020	\$37
Vanadium	EPA 200.7	EPA 200.8	EPA 6010B	EPA 6020	\$21
Ytterbium		EPA 200.8		EPA 6020	\$37
Yttrium		EPA 200.8		EPA 6020	\$37
Zinc	EPA 200.7	EPA 200.8	EPA 6010B	EPA 6020	\$21
Zirconium		EPA 200.8		EPA 6020	\$37

Metals - Mercury (Water) Method Price

Mercury	EPA 7470A	\$48
Mercury (AF)	EPA 245.7	\$69
Mercury (CV)	EPA 245.1	\$48
Mercury, low level	EPA 1631E	\$101

Metals - Ultra Low Level (Water) Method Price

Total Aluminum - Preconcentration	EPA 1640	\$90
Total Antimony - Reductive precipitation	EPA 1640	\$90
Total Arsenic - Reductive precipitation	EPA 1640	\$90
Total Barium	EPA 1638	\$53
Total Beryllium - Reductive precipitation	EPA 1640	\$90
Total Cadmium - Preconcentration	EPA 1640	\$90
Total Chromium - Reductive precipitation	EPA 1640	\$90
Total Cobalt - Preconcentration	EPA 1640	\$90
Total Copper - Preconcentration	EPA 1640	\$90
Total Iron - Preconcentration	EPA 1640	\$90
Total Lead - Preconcentration	EPA 1640	\$90
Total Manganese - Preconcentration	EPA 1640	\$90
Total Nickel - Preconcentration	EPA 1640	\$90
Total Selenium - Coprecipitation	EPA 1640	\$90
Total Silver - Coprecipitation	EPA 1640	\$90
Total Thallium - Reductive precipitation	EPA 1640	\$90
Total Zinc - Preconcentration	EPA 1640	\$90

Pharmaceuticals, Personal Care Products & Endocrine Disruptors (PPCP/EDC) Method Price

PPCP - Alkyl Phenols (GCMS-SIM)	GCMS SIM	\$371 ⁵
PPCP - Hormones (LCMSMS-APCI+)	EPA1694M-APCI	\$424 ⁵
PPCP - Morphine (LCMSMS-ESI+)	EPA1694M-ESI+	\$424
PPCP - Pharmaceuticals (LCMSMS-ESI-)	EPA1694M-ESI-	\$424 ⁵
PPCP - Pharmaceuticals (LCMSMS-ESI+)	EPA1694M-ESI+	\$424 ⁵
PPCP - Polybrominated Diphenyl Ethers (PBDEs)	GCMS SIM	\$371 ⁵

Unregulated Contaminant Monitoring Rule (Water) Method Price



UCMR1 List 1	EPA 525.2	\$318 ⁶
UCMR1 List 2	EPA 526	\$318 ⁶
UCMR1 List 2 Phenols	EPA 528	\$318 ⁶
UCMR1 List 2 Diuron & Linuron	EPA 532	\$212 ⁶
UCMR2 Nitrosamines	EPA 521	\$371 ⁶
UCMR2 Acetanilide Pesticide Parents	EPA 525.2	\$265 ⁶
UCMR2 Pesticides & Flame Retardants	EPA 527	\$292 ⁶
UCMR2 Explosives	EPA 529	\$292 ⁶
UCMR2 Acetanilide Degradates	EPA 535	\$424 ⁶
UCMR3 Chlorate	EPA 300.1	\$69
UCMR3 Metals	EPA 200.8	\$106
UCMR3 Hexavalent Chromium	EPA 218.7	\$127
UCMR3 Volatile Organics	EPA 524.3	\$159
UCMR3 1,4-Dioxane	EPA 522	\$191
UCMR3 Perfluorinated Compounds	EPA 537	\$371
UCMR3 Hormones	EPA 539	\$424

Organics (Water)	Method	Price
1,2,3-Trichloropropane (TCP) (GCMS-SIM)	SRL 524M-TCP	\$212
1,4-Dioxane	EPA 8270M	\$191
1-Butanol	EPA 8015B	\$127
1-Propanol	EPA 8015B	\$127
2-Butoxyethanol	EPA 8015B	\$127
2-Dimethylaminoethanol	EPA 8015B	\$127
2-Ethoxyethanol	EPA 8015B	\$127
2-Methoxyethanol	EPA 8015B	\$127
Acrylamide, low level (LC/MS/MS)	EPA 8316	\$424
Aldehydes	EPA 556	\$191
Algal (Cyano-) Toxins by LCMSMS	LCMSMS ESI+	\$451
Amines (Diethyl & Triethyl)	EPA 1671	\$265
Aquatic Herbicides	EPA 538	\$424
Bicine	LC/MS/MS	\$424
Carbamates	EPA 531.1	\$159
Carbamates	EPA 8318	\$159
Chlorinated Acid Herbicides	EPA 515.3	\$159
Chlorinated Herbicides	EPA 8151A	\$265
Diethylene Glycol	EPA 8015B	\$127
Diethylene Glycol Butylether	EPA 8015B	\$127
Dioxin (2,3,7,8-TCDD) (drinking water)	EPA 1613B ATP	\$318
Dioxin (2,3,7,8-TCDD) (non-potable water)	EPA 1631B	\$636
Diquat & Paraquat	EPA 549.2	\$191
Disinfection Byproducts (Chloropicrin / Chloral Hydrate)	EPA 551.1	\$159
Dissolved (HC) gases	RSK-175	\$127
Dissolved (HC+CO2) gases	RSK-175	\$159
Dissolved (HC+H2) gases	RSK-175	\$159
Diuron	EPA 632	\$212
Endothall	EPA 548.1	\$159
Ethylene & Propylene Glycol	EPA 8015B	\$127
Ethylene glycol butyl ether, Butyl Cellosolve	EPA 8015B	\$127
Ethylene glycol monoethyl ether, Cellosolve	EPA 8015B	\$127
Ethylene glycol monomethyl ether, MethylCellosolve	EPA 8015B	\$127
Explosives	EPA 8330A	\$318
Formaldehyde & Acetaldehyde	EPA 8315A	\$212
Fumigants (EDB, DBCP)	EPA 504.1	\$148
Geosmin & 2-Methylisoborneol (MIB)	SM 6040 D	\$265
Glycol, Triethylene	EPA 8015B	\$127



Glyphosate	EPA 547	\$106
Haloacetic Acids (HAA5)	EPA 552.2	\$159
Haloacetic Acids (HAA5) - Formation Potential	EPA 552.2	\$350
Hydrazines (+MMH +UDMH)	LCMS	\$265
Isobutanol	EPA 8015B	\$127
Melamine & Cyanuric Acid	LC/MS/MS	\$424
Methanol, Ethanol, Isopropanol	EPA 8015B	\$127
Methyl Isothiocyanate (MITC)	EPA 1659M	\$265
NDMA, DMA, Bromacil (GC/NPD)	EPA 607M	\$424
Neonicotinoid Insecticides	EPA 538M	\$424
Nicotine, Cotinine, 3-Hydroxycotinine	LCMSMS	\$265
Nitrosoamines - Formation Potential	EPA 1625M	\$530
Nitrosoamines (NDMA, NDEA, etc.)	EPA 1625M	\$424
Organochlorine Pesticides	EPA 608	\$191
Organochlorine Pesticides	EPA 8081A	\$191
Organochlorine Pesticides - Appx9+Mirex	EPA 8081A	\$191
Organochlorine Pesticides & PCBs	EPA 508	\$148
Organochlorine Pesticides and PCBs	EPA 8081A/8082	\$212
Organochlorine Pesticides/PCBs - low level	EPA 608	\$191
Organophosphorus Pesticides	EPA 8141A	\$233
Organophosphorus Pesticides - low level	EPA 525.2	\$318
Parachlorobenzene Sulfonic Acid (PCBSA)	LC/MS/MS	\$318
PCB Congeners (28)	GCMSMS	\$318
PCB Congeners (56)	GCMSMS	\$477
Perfluorooctane Sulfonate & Perfluorooctanoic Acid (PFOS/PFOA)	EPA 537M	\$371
Pesticides/Herbicides by LCMSMS	EPA 8321	\$424
Phenols-SIM	EPA 8270 SIM	\$212
Polychlorinated Biphenyls	EPA 608	\$148
Polynuclear Aromatics, ultra-low level (GCMSMS)	GCMSMS	\$254
Polynuclear Aromatics-SIM	EPA 8270 SIM	\$254
Pyrethroid Pesticides (GC/MS SIM)	GC/MS NCI-SIM	\$371
Rodenticides	ASTM D7644	\$424
Semivolatile Organic Compounds	EPA 625	\$318
Semivolatile Organic Compounds	EPA 8270C	\$318
Semivolatile Organics	EPA 525.2	\$318
Semivolatile Organics - Appendix 2	EPA 8270C	\$371
Semivolatile Organics - Appendix 9	EPA 8270C	\$371
Semivolatile Organics (Regulated 3 + 507 list)	EPA 525.2	\$286
Total Trihalomethanes	EPA 524.2	\$80
Total Trihalomethanes - Formation Potential	EPA 524.2	\$191
TPH Diesel & Oil Range Organics (DRO/ORO)	EPA 8015B	\$69
TPH Gasoline Range Organics (GRO)	EPA 8015B	\$69
Tributyltin	Krone, et al, 1989	\$212
Volatile Fatty Acids	EPA 8015B	\$265
Volatile Organic Compounds	EPA 524.2	\$159
Volatile Organic Compounds	EPA 624	\$159
Volatile Organic Compounds	EPA 8260B	\$159
Volatile Organic Compounds+Oxys	EPA 8260B	\$212
Volatile Organics specific to Pharmaceutical Mfg. Industry	EPA 1666 Direct Injection	\$371
Volatile Organics specific to Pharmaceutical Mfg. Industry	EPA 1666 Purge & Trap	\$371
Inorganics & General Chemistry (Solid)	Method	Price
Bromate	EPA 300.1M	\$83
Bromide	EPA 9056	\$45
Carbon, Total Organic (TOC)	EPA 9060M	\$95
Cation Exchange Capacity	EPA 9081	\$64



Chlorate	EPA 300.1M	\$83
Chloride	EPA 9056	\$45
Chromium, Hexavalent	EPA 7196	\$101
Chromium, Hexavalent (IC)	EPA 7199	\$159
Cyanide	EPA 9014M	\$53
Density	ASTM D1475	\$32
Fluoride	EPA 9056	\$45
Halogens, Extractable Organic (EOX)	EPA 9023	\$191
Halogens, Total (TX)	EPA 9076	\$127
Halogens, Total Organic (TOX)	EPA 9020M	\$127
Ignitability by Flashpoint	EPA 1010M	\$53
Inorganic Nitrogen	EPA 350.1+353.2	\$159
Iodide in solid	EPA 9056M	\$101
Moisture, Percent	EPA 160.3	\$21
Nitrate-N	EPA 353.2M	\$45
Nitrite-N	EPA 353.2M	\$45
Nitrogen, Total	EPA 353.2+351.2	\$106
Nitrogen, Total Kjeldahl (TKN)	EPA351.2M	\$80
NO ₂ +NO ₃ -N	EPA 353.2	\$45
Oil and Grease	EPA 1664M	\$74
Oil and Grease Non-polar	EPA 1664M	\$74
Organic Nitrogen	SM 4500-Norg B	\$106
Orthophosphate-P	EPA 365.3M	\$32
Paint filter liquids test	EPA 9095A	\$32
Partical size distribution	ASTM D2862	\$80
Perchlorate (IC)	EPA 314M	\$80
Perchlorate, low level (LC/MS/MS)	EPA 331.0M	\$212
Perchlorate, low level (LC/MS/MS)	EPA 6850	\$212
pH	EPA 9045C	\$21
Phenolics	EPA 9065M	\$127
Phosphate, Total as PO ₄	EPA 365.3M	\$48
Phosphorus, Total as P	EPA 365.3M	\$48
Solids, Total Volatile (TVS)	Gravimetric	\$32
Specific Conductance (EC)	SM 2510 B m	\$27
Sulfate	EPA 9056	\$45
Sulfide, water soluble	SM 4500S2 D	\$53
Sulfite	SM 4500-SO ₃ B m	\$42
Sulfur	EPA 6010B	\$111
Surfactants - Methylene Blue Active Substances (MBAS)	SM 5540 C m	\$48
Water Content (GC)	EPA 24	\$80

Microbiology (Solid)	Method	Price
Coliform, E. Coli	SM 9221 F m	\$21
Coliform, Fecal	SM 9221 E m	\$48
Coliform, Total & Fecal	SM 9221 B m	\$64
Heterotrophic Plate Count	SM 9215 B m	\$32

Metals by ICP & ICPMS (Solid)	Method	Price
Aluminum	EPA 6010B EPA 6020	\$21
Antimony	EPA 6010B EPA 6020	\$21
Arsenic	EPA 6010B EPA 6020	\$21
Barium	EPA 6010B EPA 6020	\$21
Beryllium	EPA 6010B EPA 6020	\$21
Bismuth	EPA 6020	\$37
Boron	EPA 6010B EPA 6020	\$21
Cadmium	EPA 6010B EPA 6020	\$21
Calcium	EPA 6010B EPA 6020	\$21



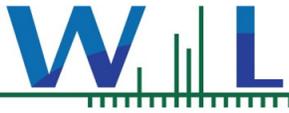
Cerium		EPA 6020	\$37
Cesium		EPA 6020	\$37
Chromium	EPA 6010B	EPA 6020	\$21
Cobalt	EPA 6010B	EPA 6020	\$21
Copper	EPA 6010B	EPA 6020	\$21
Dysprosium		EPA 6020	\$37
Erbium		EPA 6020	\$37
Gadolinium		EPA 6020	\$37
Gallium		EPA 6020	\$37
Gold		EPA 6020	\$37
Holmium		EPA 6020	\$37
Indium		EPA 6020	\$37
Iridium		EPA 6020	\$37
Iron	EPA 6010B	EPA 6020	\$21
Lead	EPA 6010B	EPA 6020	\$21
Lithium	EPA 6010B		\$21
Lutetium		EPA 6020	\$37
Magnesium	EPA 6010B		\$21
Manganese	EPA 6010B	EPA 6020	\$21
Molybdenum	EPA 6010B	EPA 6020	\$21
Neodymium		EPA 6020	\$37
Nickel	EPA 6010B	EPA 6020	\$21
Phosphorus	EPA 6010B	EPA 6020	\$37
Potassium	EPA 6010B		\$21
Praseodymium		EPA 6020	\$37
Rhenium		EPA 6020	\$37
Samarium		EPA 6020	\$37
Scandium		EPA 6020	\$37
Selenium	EPA 6010B	EPA 6020	\$21
Silica	EPA 6010B		\$21
Silicon	EPA 6010B		\$21
Silver	EPA 6010B	EPA 6020	\$21
Sodium	EPA 6010B	EPA 6020	\$21
Strontium	EPA 6010B	EPA 6020	\$37
Sulfur	EPA 6010B		\$58
Tellurium		EPA 6020	\$37
Terbium		EPA 6020	\$37
Thalium	EPA 6010B	EPA 6020	\$21
Thorium		EPA 6020	\$37
Tin	EPA 6010B	EPA 6020	\$37
Titanium	EPA 6010B	EPA 6020	\$37
Tungsten		EPA 6020	\$37
Uranium		EPA 6020	\$37
Vanadium	EPA 6010B	EPA 6020	\$21
Ytterbium		EPA 6020	\$37
Yttrium		EPA 6020	\$37
Zinc	EPA 6010B	EPA 6020	\$21
Zirconium		EPA 6020	\$37

Metals - Mercury (Solid)	Method	Price
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Mercury	EPA 7471	\$48
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Organics (Solid)	Method	Price
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1,4-Dioxane	EPA 8270M	\$191
Alcohol, Methanol, Ethanol, Isopropanol	EPA 8015B	\$127
Aldehydes	EPA 556M	\$265
Caprolactam (LCMS)	LCMS	\$371



Carbamates	EPA 8318	\$159
Chlorinated Herbicides	EPA 8151A	\$265
Diquat & Paraquat	EPA 549.2M	\$212
Diuron, leachable	EPA 632M	\$212
Explosives	EPA 8330A	\$318
Formaldehyde+Acetaldehyde	EPA 8315A	\$265
Fumigants (EDB, DBCP)	EPA 504.1M	\$191
Glycol, Diethylene	EPA 8015B	\$127
Glycol, Ethylene & Propylene	EPA 8015B	\$127
Glycol, Triethylene	EPA 8015B	\$127
Glyphosate	EPA 547M	\$148
Hydrazines (+MMH +UDMH)	HPLC	\$318
NDMA, DMA, Bromacil (GC/NPD)	EPA 607M	\$424
Organochlorine Pesticides	EPA 8081A	\$191
Organochlorine Pesticides and PCBs	EPA 8081A/8082	\$212
Organophosphorus Pesticides	EPA 8141A	\$233
PCB Aroclors	EPA 8082	\$148
PCB Congeners (28)	GCMSMS	\$318
PCB Congeners (56)	GCMSMS	\$477
Perfluorooctane Sulfonate & Perfluorooctanoic Acid (PFOS/PFOA)	EPA 537M	\$371
Phenols, low level (GCMS-SIM)	EPA 8270C-SIM	\$254
Polybrominated Diphenyl Ethers (PBDEs)	GCMS SIM	\$371
Polynuclear Aromatics, low level (GCMS-SIM)	EPA 8270C-SIM	\$254
Polynuclear Aromatics, ultra-low level (GCMSMS)	GCMSMS	\$371
Pyrethroid Pesticides (GCMS-SIM)	GC/MS NCI-SIM	\$371
Semivolatile Organics	EPA 8270C	\$318
Semivolatile Organics Appendix 9	EPA 8270C	\$371
TPH Diesel & Oil Range Organics (DRO/ORO)	EPA 8015B	\$69
TPH Gasoline Range Organics (GRO)	EPA 8015B	\$69
Tributyltin	Krone, et al, 1989	\$212
Volatile Organic Compounds	EPA 8260B	\$159
Volatile Organic Compounds+Oxys	EPA 8260B	\$212

Sample Preparation	Method	Price
Digestion of oil	EPA 3040	\$53
Alkaline digestion for Cr VI	EPA 3060	\$64
Filtration	---	\$16
Digestion charge/preparation for special matrix	---	\$37
WET (Waste Extraction Test)	22CCR261.24	\$80
TCLP extraction for metals and semi-volatiles	EPA 1311	\$106
TCLP zero Headspace Extraction (ZHE) for volatiles	EPA 1311	\$138
Gel Permeation Chromatography		\$106

Analytical Groups	Method	Price
General Mineral Group	Various	\$223 ³
General Physical [Color, Odor and Turbidity]	EPA 110.2 / 140.1 / 180.1	\$42
Inorganic Chemicals Group	Various	\$318 ⁴
CAM Metals (16) add mercury separately		\$260 ²

AIR EMISSIONS - AQMD REGULATIONS	Method	Price
VOC calculation with exempt solvents	EPA 24 / ASTM D3960	\$318 ⁷
Acetone method 311	SCAQMD 311	\$106
VOC speciation by GC/MS	GC/MS	\$200
Rule 1420 Lead analysis - Ambient (other elements available)	SCAQMD Rule 1420	\$53
Activated Carbon - Hydrogen Sulfide Breakthrough Capacity	ASTM D6646-03	\$477
Other AQMD test methods	SCAQMD	Quote

FOOD, PHAMACEUTICAL & NUTRITIONAL SUPPLEMENTS	Method	Price
Arsenic Speciation (As3+, As5+)	LC-ICP-MS	\$212



Arsenic Speciation (As3+, As5+, MMA, DMA, and AsB)	LC-ICP-MS	\$265
Coliform, Total	FDA BAM Ch.4	\$64
Methyl Mercury	LC-ICP-MS	\$239
Multi-Residue Pesticide Screen	GC-MSMS	Quote
Multi-Residue Pesticide Screen	LC-MSMS	Quote
Polynuclear Aromatic Hydrocarbons	GC-MSMS	\$371
Residual Solvents	USP 467	\$424
Salmonella	FDA BAM Ch.5	\$53
Selenium Speciation (Se4+ and Se6+)	LC-ICP-MS	\$212
TOC cleaning verification	USP <643>	\$265
USP 191 Calcium Identification	USP 191	\$32
USP 232 Arsenic, metal	USP 232	\$32
USP 232 Cadmium, metal	USP 232	\$32
USP 232 Copper, metal	USP 232	\$32
USP 232 Iridium, metal	USP 232	\$32
USP 232 Iron, metal	USP 232	\$32
USP 232 Lead, metal	USP 232	\$32
USP 232 Mercury, metal	USP 232	\$32
USP 232 Metals Package	USP 232	\$292
USP 232 Molybdenum, metal	USP 232	\$32
USP 232 Nickel, metal	USP 232	\$32
USP 232 Osmium, metal	USP 232	\$32
USP 232 Palladium, metal	USP 232	\$32
USP 232 Platinum, metal	USP 232	\$32
USP 232 Rhodium, metal	USP 232	\$32
USP 232 Ruthenium, metal	USP 232	\$32
USP 232 Vanadium, metal	USP 232	\$32
USP 541 Calcium Carbonate Assay - Titrimetric	USP 541	\$42
USP Monograph for Acid Insoluble Substances	USP Monograph	\$21
USP Monograph for Barium Impurity	USP Monograph	\$21
USP Monograph for Limit Magnesium and Alkali Salts	USP Monograph	\$48
USP Monograph for Limit of Fluoride	USP Monograph	\$53
Yeast & Molds	AOAC 997.02	\$27

AWWA Chemical Purity	Method	Price
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Free Acid	AWWA B407-12	\$42
Iron, Ferric	AWWA B407-12	\$42
Iron, Ferrous	AWWA B407-12	\$42
Iron, Total	AWWA B407-12	\$42
Total Insoluble Matter	AWWA B407-12	\$42

Activated Carbon	Method	Price
------------------	--------	-------

Apparent Density	ASTM D2854	\$37
Ash, Percent @ 650 deg. C	ASTM 2866	\$48
Ball-Pan Hardness	ASTM D3802	\$90
Butane Activity	ASTM D5742	\$90
H2S Breakthrough Capacity	ASTM D6646	\$477
Partical Size Distribution & Mean Particle Diameter	ASTM D2862	\$53
Moisture, Percent	ASTM D2867	\$32
pH Value	EPA 9045C	\$21
Iodine, Triple Point	ASTM D4607	\$477
Iodine, Single Point	ASTM D4607M	\$159
Volatile Matter Content	ASTM D5832	\$85
Water Soluble	ASTM D5029	\$80

FIELD SERVICES	Price
----------------	-------

24 hour composite sampling of wastewater	\$200 ⁸
Grab samples	\$75 ⁸



Sample pick-up	\$75 ⁸
Other sampling (soil, groundwater, air)	Quote
Field technician, per hour	\$95
Field equipment rental	Quote
Mileage charge, per mile	\$1.10

OTHER SERVICES	Price
-----------------------	--------------

Expert witness / litigation, per hour	\$530
Field technician, per hour	\$95
Chemist, per hour	\$106
Project Manager / IT Manager, per hour	\$127
QA Manager / Lab Director, per hour	\$148

<u>QC Data packages</u>	^{9, 10}
--------------------------------	------------------

Level IV (CLP Like Data Package)	15%
Level III (Summary CLP like Data Package)	10%
Level II (Standard QC Data Package)	No charge
Copies of chromatograms added to Level II, per analysis	\$15
Special QC requirements for contract specific QAPP	Quote

<u>Electronic deliverables</u>	⁹
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EDD on disk in standard formats	5%
EDD in special format required by client	Quote

<u>Other Surcharges</u>	
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RUSH Surcharges - same workday	150%
RUSH Surcharges - 1 workday	100%
RUSH Surcharges - 2 to 3 workdays	75%
RUSH Surcharges - 4 to 5 workdays	30%
Extraction Rush Charge - same workday	75% ¹¹
Extraction Rush Charge - 1 workday	50% ¹¹
Weekend charge, per batch, per day	\$80 ¹²
Holiday charge, per batch, per day	\$160
Wastewater self-monitoring reports (LACSD)	\$20
Minimum Charge per work order	\$200

FOOTNOTES

- 1 = Subcontracted tests
- 2 = As Ag Ba Be Cd Co Cr Cu Mo Ni Pb Sb Se Tl V Zn
- 3 = Sodium, potassium, calcium, magnesium, bicarbonate, carbonate, hydroxide alkalinity, fluoride, nitrate, chloride, sulfate, pH, specific conductance, total dissolved solids, total hardness, copper, iron, manganese, zinc and MBAS
- 4 = Regulated trace metals (Al Sb As Ba Be Cd Cr Pb Hg Ni Se Ag Tl), cyanide, fluoride, nitrate and nitrite
- 5 = Please contact the lab for a list of target compounds
- 6 = UCMR must be pre-scheduled with lab prior to sampling
- 7 = VOC calculation with exempt solvents includes volatile content, density, water & exempt solvents by GC
- 8 = Prices may be higher for some geographical areas or difficult to reach sampling points.
- 9 = Please contact the lab for a detailed description of deliverables or www.wecklabs.com
- 10 = Surcharge applies if packages are requested with the work order. Prices may be higher if data retrieval is needed.
- 11 = Charge applied when insufficient holding time remains upon receipt
- 12 = Charge applies to set up or read bacteriological samples, BOD5 and other tests.



PALMDALE WATER DISTRICT
A CENTURY OF SERVICE

Hazen

Hazen and Sawyer
800 West Sixth Street • Suite 400 • Los Angeles, CA 90017

BOARD OF DIRECTORS
PALMDALE WATER DISTRICT

VIA: Mr. Adam Ly, Assistant General Manager
Mr. Dennis D. LaMoreaux, General Manager

January 19, 2021

Based on initial debris model flows from the USGS, debris flows are estimated to be in the range of 19,000 to 23,000 cubic yards. The USFS has closed the Angeles National Forest area to allow the area to recover from the Bobcat fire and requested PWD to start sediment removal operations while the area is closed to the public.

Staff requested Northwest Hydraulic Consultants to create plans for the emergency sediment removal activities that would involve the excavation of approximately 19,000 cubic yards of material from inside the Reservoir bed to prepare for sediment debris flow. Additionally, staff requested Aspen Environmental prepare and submit the necessary permits for the removal under the Governor's emergency declaration to perform the sediment removal.

Sediment removal will not alter the Reservoir footprint but will simply deepen the Reservoir within the excavation area. The overall objective is to restore and preserve the Reservoir capacity, which has been substantially reduced over time by accumulation of sediment behind Littlerock Reservoir during seasonal inflows.

Responsiveness of the bid pertaining to compliance with the material terms of the bid documents from Advanced Chemical Transport, Inc. (dba ACTenviro) has been reviewed and deemed unacceptable and, therefore, deemed unresponsive.

The second lowest bidder's total bid price in the bid proposal submitted by Innovative Construction Solutions is \$530,100. A bidder's bond in the amount of 16 percent of the total bid price was submitted with the bid proposal. The surety company providing the bid bond is Great American Insurance Company of Ohio.

The criterion for responsibility pertains to whether the bidder is regularly engaged in this type of work and whether they can perform the work satisfactorily as promised. The contractor is required to provide payment and performance bonds to protect the District's interest.

Innovative Construction Solutions, as the lowest responsive, responsible bidder, holds a valid worker's compensation insurance policy (Policy number WC551375106 with Zurich American Insurance Company effective from October 1, 2020 through October 1, 2021.)

The contractor's past performance record has been utilized to evaluate the general competency of the contractor for the performance of the work. To demonstrate the bidder's capability and experience of having completed similar projects successfully, the bid documents require that the contractor submit a list of all projects completed by the contractor during the last three years involving work of similar type and complexity and comparable value.

It is required that no less than 60-percent of the work be performed by the contractor's own forces without subcontracting. It appears that Vertex Survey Inc. will perform 2-percent of the work and meets the limitations on the subcontracting work.

BOARD OF DIRECTORS
PALMDALE WATER DISTRICT

VIA: Mr. Adam Ly, Assistant General Manager
Mr. Dennis D. LaMoreaux, General Manager

January 19, 2021

Responsiveness of the bid pertaining to compliance with the material terms of the bid documents from Innovative Construction Solutions has been reviewed and deemed acceptable.

Innovative Construction Solutions, as the lowest responsible bidder, has met the criterion of providing the lowest bid price of qualified firms at \$533,100. The lowest qualified bid price is \$23,074.00, or 4.17 percent, lower than the next lowest bidder.

Strategic Plan Initiative/Mission Statement:

This item is under Strategic Initiative No. 3 – Systems Efficiency. This item directly relates to the District’s Mission Statement.

Budget:

This item is budgeted and will be covered as part of Work Order No. 20-422.

Supporting Documents:

- Bid Results Summary
- Proposal Package from Advanced Chemical Transport, Inc. (dba ACTenviro)
- Proposal Package from Innovative Construction Solutions

Bid Results Summary
Emergency Sediment Removal at Littlerock Reservoir

Advanced Chemical Transport, Inc. (dba ACTenviro)	Innovative Construction Solutions	Jeremy Harris Construction, Inc.	Papich Construction Co., Inc.	Trinity Construction	Miller Equipment Company, Inc.	EverLevel Holdings, LLC	Cinbad Industry, Inc.	Granite Construction Company
\$485,950.00	\$530,100.00	\$553,174.00	\$574,235.00	\$632,667.76	\$699,930.00	\$905,500.00	\$910,800.00	\$1,011,435.00



CONSTRUCTION OF THE EMERGENCY SEDIMENTATION REMOVAL AND DISPOSAL AT LITTLEROCK DAM RESERVOIR

SPECIFICATION NO. 20-422
PALMDALE WATER DISTRICT
2029 E AVENUE Q
PALMDALE, CA 93550
<https://www.palmdalewater.org/>

ATTENTION: SCOTT ROGERS
ENGINEERING/GRANTS MANAGER
TEL: 661-456-1020
SROGERS@PALMDALEWATER.ORG



PALMDALE WATER DISTRICT

A CENTURY OF SERVICE

JANUARY 18, 2021

PREPARED AND SUBMITTED BY:
ADVANCED CHEMICAL TRANSPORT, INC.
967 MABURY RD.
SAN JOSE, CA 95133
TEL: 408-548-5050
FAX: 408-548-5052



Advanced Chemical Transport, Inc.
967 Mabury Rd.
San Jose, CA 95133
Tel: 408-548-5050
Fax: 408-548-5052
24-Hour: 1-888-785-7225
www.actenviro.com

18 January 2021

PALMDALE WATER DISTRICT
2029 EAST AVE Q
PALMDALE, CA 93550

ATTENTION: SCOTT ROGERS
ENGINEERING/GRANTS MANAGER
TEL: 661-456-1020
SROGERS@PALMDALEWATER.ORG

RE: Specification No: 20-422 Construction of the Emergency Sedimentation Removal and Disposal at Littlerock Dam Reservoir

To: Mr. Scott Rogers,

Advanced Chemical Transport, Inc., (dba ACTEnviro), is pleased to submit the following information to the Palmdale Water District in response to the Emergency Sedimentation Removal and Disposal at Littlerock Dam Reservoir.

Through our submittal we hope to clearly demonstrate our experience, qualifications, and expertise in performing the emergency services listed in the solicitation following and adhering to the guidance of all drawings and specifications for:

Removal and disposal of 19,000 cubic yards of sediment material from the inside the Reservoir bed to prepare for sediment debris flow from the Bobcat Fire.

ACTenviro, is accepts all existing conditions and limitations potentially affecting the execution of work under the contract – and agrees to the provisions, terms and conditions of the contract as outlined.

ACT has provided environmental service solutions to the United States Government requiring the immediate response to:

- Soil and Water Remediation
- Clean-up Activities
- Waste Removal Hauling/Disposal
- Emergency Spill Response
- Fire Debris Removal & Encampment Clean-up

As a trusted environmental partner, ACTEnviro has successfully performed Environmental Remediation for the past two decades, and will always adhere to State, local and Federal rules and regulations.

Contact me directly with questions surrounding our submittal or for requests for further information.

Best Regards,

Van Templeton

Van Templeton, Sr. Project Manager
661-978-9126 mobile
VTempleton@actenviro.com

cc: Tim Berrens, Remediation Manager
253-777-6250
TBerrens@actenviro.com



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SECTION II

IV. PROPOSAL - BIDDERS CHECKLIST

✓ IV.A Bidder's Declaration*

*Response required

✓ IV.B Bid Schedule*

Please ensure you have filled out the electronic bid schedule

Please confirm

*Response required

✓ IV.C Information Required of Bidder*

*Response required

✓ IV.D Contractor's Licensing Statement*

*Response required

✓ IV.E License Number*

Contractors are required by law to be licensed and regulated by the Contractors' State License Board which has jurisdiction to investigate complaints against contractors if a complaint is filed within three years of the date of the alleged violation. Any questions concerning a contractor may be referred to the Registrar, Contractors' State License Board, P.O. Box 26000, Sacramento, California 95826.

*Response required

✓ IV.F California Department of Industrial Relations Registration*

Please enter your Public Works Contractor Registration Number. This will be verified against the state database.

*Response required

✓ IV.G List of Subcontractor*

Provide a list of subcontractors including the contractor license number and Department of Industrial Relations registration number.

*Response required

✓ IV.H Bid Security Form*

As part of the electronic response, Bidder must provide an image of the bid security.



The bid security must also be delivered by mail or in person within 24 hours of bid response deadline time and date, Jan 18, 2021 at 4:00 pm.

The envelope enclosing the bid security shall be sealed and addressed as follows:

Palmdale Water District
2029 East Avenue Q
Palmdale, CA 93550

The envelope shall be plainly marked in the upper left-hand corner with the name and address of the bidder, shall bear the words "Bid Security for", followed by the title of the specification for the work and the date and hour for receiving bids, and shall be delivered or mailed to the Owner prior to the date and hour to receive bids. The Bid Security shall be made payable to or for the benefit of the Owner.

*Response required

✓ **IV.I Non-Collusion Affidavit***

Bidder certifies that such a bid is not made in the interest of or on behalf of any undisclosed person, partnership, company, association, organization, or corporation; that such bid is genuine and not collusive or sham; that said bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid, and has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, nor that anyone shall refrain from bidding; that said bidder has not in any manner, directly or indirectly, sought by agreement, communications or conference with anyone to fix the bid price of said bidder or any other bidder, nor to fix any overhead, profit, or cost element of such bid price, nor of that of any other bidder, nor to secure any advantage against the public body awarding the contract or anyone interested in the proposed contract; that all statements contained in such bid are true; and, further, that said bidder has not, directly or indirectly, submitted their bid price or any breakdown thereof, nor the contents thereof, nor divulged information or data relative thereto, nor paid and will not pay any fee in connection therewith to any corporation, partnership, company, association, organization, bid depository, nor to any member or agent thereof, nor to any other individual except to such person or persons as have a partnership or other financial interest with said bidder in their general business.

- Yes
- No

*Response required

✓ **IV.J Labor Union Negotiation**

Bids over \$250,000 - must agree to the Letter of Assent as identified in the Community Workforce Agreement (CWA).

- Yes
- No



PROPOSAL

BIDDER'S DECLARATION SPECIFICATION NO. {20-422}

Gentlepersons:

The undersigned hereby proposes to perform all work for which a contract may be awarded them and to furnish any and all plant, labor, services, material, tools, equipment, supplies, transportation, utilities, and all other items and facilities necessary therefor as provided in the Contract Documents, and to do everything required therein for the construction of the interior building improvements as specifically set forth in documents entitled **Specification No. {20-422} – {Construction of the Emergency Sedimentation Removal and Disposal at Littlerock Dam Reservoir}** together with addenda thereto, all as set forth on the drawings and in the specifications and other Contract Documents (hereinafter the "Work"); and they further propose and agree that, if this Proposal is accepted, they will contract in the form and manner stipulated to perform all the Work called for by drawings, specifications, and other Contract Documents, and to complete all such Work in strict conformity therewith within the time limits set forth therein, and that they will accept as full payment therefor the prices set forth in the Bid Sheet(s) forming a part hereof.

(check one)

- Cash
- Cashier's check
- Certified check
- Bid Bond

properly made payable to Palmdale Water District, hereinafter designated as the Owner, for the sum of \$**{ 48,595.00 }** which amount is not less than 10 percent of the total amount of this bid, is attached hereto and is given as a guarantee that the undersigned will execute the Agreement and furnish the required bonds and insurance if awarded the contract and, in case of failure to do so within the time provided, the

(check one)

- cash shall be retained as liquidated damages by the Owner
- proceeds of said check shall be retained as liquidated damages by the Owner
- Surety's liability to the Owner for the face amount of the Bond shall be considered as established.

It is understood and agreed that:



1. The undersigned has carefully examined all the Contract Documents, as defined in Section N-12 of the Notice Inviting Bids, including, but not limited to, the bid quantities, any specifications regarding materials to be used, the contract provisions relating to payment for extra work and the procedures for seeking extensions of time.

2. The undersigned, by investigation at the site of the work, by review of any records available for inspection at the offices of utilities in the area affected by the Work, at any applicable public works departments, and otherwise, is satisfied as to the nature and location of the work and is fully informed as to all conditions and matters which can in any way affect the work or the cost thereof, including the location of all underground facilities in the area affected by the Work.

3. The undersigned fully understands the scope of the Work and has checked carefully all words and figures inserted in this Proposal and further understands that the Owner will in no way be responsible for any errors or omissions in the preparation of this Proposal.

4. The undersigned will execute the Agreement and furnish the required Performance and Payment Bonds and proof of insurance coverage within ten (10) days (not including Sundays and holidays) after Owner's notice of acceptance of this Proposal; and further, that, unless otherwise specified in the Special provisions, this Proposal may not be withdrawn for a period of forty-five (45) days after the date set for the opening thereof, notwithstanding the award of contract to another bidder. If the undersigned bidder withdraws this Proposal within said period, said bidder shall be liable under the provisions of the Bid Security, or said bidder and their surety shall be liable under the Bid Bond, as the case may be.

5. The undersigned hereby certifies that this Proposal is genuine and not sham or collusive or made in the interest or in behalf of any person not herein named, and the undersigned has not directly or indirectly induced or solicited any other bidder to put in a sham bid, or any other person, firm, or corporation to refrain from bidding; the undersigned has not in any manner sought by collusion to secure for themselves an advantage over any other bidder.

6. In conformance with current statutory requirement of the Labor Code of the State of California, the undersigned certifies as follows:

I am aware of the provisions of Section 3700 of the Labor Code which require every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that code, and I will comply with such provisions before commencing the performance of the work of this contract.

NOW, in compliance with the Notice Inviting Bids and all the provisions hereinbefore stipulated, the undersigned, with full cognizance thereof, hereby proposes to perform the

PROPOSAL
PAGE P-2



entire work for the prices set forth in the attached Bid Sheet(s) upon which award of contract will be made.

The undersigned bidder declares that the license held by them is theirs, is current and valid, and is in a classification appropriate to the work to be undertaken.

The undersigned declares under penalty of perjury under the laws of the State of California that the foregoing is true and correct. Executed at San Jose, CA, California.

Dated January 18 20 21 Bidder: Advanced Chemical Transport, Inc.

By: Van Templeton

Title: Sr. Project Manager

Bidder's post-office address:

967 Mabury Road

San Jose, CA 95133

Telephone No.: 661-978-9126 (mobile)

Facsimile No.: 408-548-5052

Corporation organized under the laws of the State of California

Contractor's License(s): #897636

Expiration Dates: 06/30/2021

Surety or sureties: Atlantic Specialty Insurance Company

CONTRACTORS ARE REQUIRED BY LAW TO BE LICENSED AND REGULATED BY THE CONTRACTORS' STATE LICENSE BOARD WHICH HAS JURISDICTION TO INVESTIGATE COMPLAINTS AGAINST CONTRACTORS IF A COMPLAINT IS FILED WITHIN THREE YEARS OF THE DATE OF THE ALLEGED VIOLATION. ANY QUESTIONS CONCERNING A CONTRACTOR MAY BE REFERRED TO THE REGISTRAR, CONTRACTORS' STATE LICENSE BOARD, P.O. BOX 26000, SACRAMENTO, CALIFORNIA 95826.

PROPOSAL
PAGE P-3



BID SCHEDULE
SPECIFICATION NO. {20-422}

Schedule of Prices for Construction of
{Construction of the Emergency Sedimentation Removal and Disposal
At Littlerock Dam Reservoir}

for
Palmdale Water District

Bid schedule shall be submit electronical on web-based electronic bidding service.



V. PRICING PROPOSAL

BASE BID

Description	Quantity	Unit of Measure	Unit Cost	Total
Mobilization and Demobilization. This is a lump sum bid item including all necessary labor, equipment and materials for mobilization and demobilization of work required for the project. Mobilization work shall include, but not be limited to, that necessary for the movement of personnel, equipment, supplies and incidentals to the project site; for the establishment of temporary facilities necessary for work on the project; for establishment of staging/lay down/stockpiling areas; for obtaining permits, bonds and insurance; and for all other work and operations which must be performed or costs incurred prior to beginning work on the various contract items on the project site. Demobilization work shall include, but not be limited to, the removal from the project at the end of construction of all equipment, supplies, field office facilities, personnel and incidentals, and shall include restoration of all staging/lay down/stockpiling areas.	1	Lump Sum	\$12,250.00	\$12,250.00
Pre- and Post-Construction Surveys. This is a lump sum bid item including all necessary labor, equipment, and materials for conducting topographic surveys using existing survey control in the project area; providing topographic mapping and volumetric calculations documenting the removal sediment from the reservoir; providing data and backup information to the District.	1	Lump Sum	\$6,000.00	\$6,000.00
Site Preparation. This is a lump sum bid item including, but not limited to, all necessary labor, equipment, and materials for performing traffic control; identification and protection of existing utilities, and facilities; installing, inspecting, maintaining, and removing at the end of the work best management practices (BMPs); design, installing and removing at the end of the work a surface flow stream crossing for equipment access; installing, maintaining and removing access ramp to the excavation area; implementing track control and dust control.	1	Lump Sum	\$15,350.00	\$15,350.00
Excavation and Hauling. This is a unit price	19,000	Cubic Yards		



<p>bid item including, but not limited to, all necessary labor, equipment, and materials and shall include stripping; rough grading; any necessary sheeting, shoring, and protection work; protection of adjacent property and existing facilities; excavating 19,000 cubic yards of sediment from the reservoir within the limits and elevations shown in the plans; transfer of excavated sediment to a designated stockpiling area outside the reservoir, as applicable; and hauling and disposing material offsite to a location selected by the Contractor, in accordance with Federal, State, and local regulations.</p>			<p>(continued)</p>	
<p>Site Restoration. This is a lump sum bid item including, but not limited to, all necessary labor, equipment, and materials for cleaning up soil, mud, trash, debris, and excess materials from the stockpile/staging areas, adjacent disturbed areas, and associated haul roads; removing all tools, appliances, construction equipment and machinery; repairing roads as necessary; and restoring to original condition all areas not designated for alteration.</p>	<p>1</p>	<p>Lump Sum</p>	<p>\$23.00</p>	<p>\$437,000.00</p>
<p>TOTAL</p>				<p>\$485,950.00</p>



INFORMATION REQUIRED OF BIDDER

EQUIPMENT/MATERIAL SOURCE INFORMATION

The bidder shall indicate opposite each item of equipment or material listed below, the name of the manufacturer or supplier of the equipment or material proposed to be furnished under the bid. **Failure to comply with this requirement will render the proposal informal and may cause its rejection.** Awarding of a contract under this bid will not imply approval by the Owner of the manufacturers or suppliers listed by the bidder. No substitution will be permitted after award of contract unless equipment or material of the listed manufacturer or supplier cannot meet the specifications.

<u>Specification</u>	<u>Equipment/Material</u>	<u>Manufacturer/Supplier</u>
<u>{349E}</u>	<u>{Excavator, 2019}</u>	<u>Caterpillar</u>
<u>{966K}</u>	<u>{Wheel Loader, 2019}</u>	<u>Caterpillar</u>
<u>{304-E2}</u>	<u>{Mini Excavator, 2020}</u>	<u>Caterpillar</u>
<u>{3500 DRW 4X4}</u>	<u>{Equipment/Material Description}</u>	<u>GMC</u>
<u>{4,000 GAL}</u>	<u>{Water Truck, 2019}</u>	<u>Kenworth</u>

LIST OF PROPOSED SUBSTITUTIONS

The bidder may name a proposed substitute manufacturer with an add or deduct amount which will be considered after award. The Contract award, if any, will be on Base Bid amounts.

<u>Spec Section</u>	<u>Equipment Manufacturer</u>	<u>Add</u>	<u>Deduct</u>
<u>{Spec. No}</u>	<u>{Equipment Manufacturer}</u>		
<u>{Spec. No}</u>	<u>{Equipment Manufacturer}</u>	None	
<u>{Spec. No}</u>	<u>{Equipment Manufacturer}</u>		
<u>{Spec. No}</u>	<u>{Equipment Manufacturer}</u>		
<u>{Spec. No}</u>	<u>{Equipment Manufacturer}</u>		



INFORMATION REQUIRED OF BIDDER

SITE INSPECTION REVIEW -- Describe when, by whom, and in what manner (a) the site for this proposed work was inspected on behalf of the bidder (NOTE: Failure to demonstrate diligent effort in ascertaining site conditions which may affect the Work will render this Proposal informal or nonresponsive and may result in its rejection):

Van Templeton, Sr Project Manager, Remediation Dept., ACTenviro, visited the site

on January 12, 2021 for the Mandatory Pre-Bid Meeting located at: 2029 E. Ave Q,

Palmdale, CA 93550.

COMPARABLE PROJECT EXPERIENCE -- In accordance with Section I-5 of the Instructions to Bidders, describe at least five (5) comparable projects completed by bidder within past thirty-six (36) month period, including dates completed, location of work, size of project in dollars, names, addresses, and phone numbers of persons in charge of project construction, and the name and address of the public agency or firm for whom the project was constructed (NOTE: Failure to include at least five (5) jobs similar in size and scope to that contemplated under the Contract Documents will render this Proposal informal or non-responsive and may result in its rejection):

[\(See Appendix A - Project References\)](#)



CONTRACTOR'S LICENSING STATEMENT

The undersigned is licensed in accordance with the laws of the State of California providing for the registration of Contractors.

Contractor's License Number(s), Type(s) and Expiration Date(s): California State Contractor License (CSLB) #897636

Expiration Date: 06/30/2021 (renewed every two years)

Name of Individual Contractor (print or type):

Signature of Owner:

Business Address:

or

Name of Partnership or Firm:

Business Address:

Signature, name, title and address of partners signing on behalf of the partnership:

Signed: _____ Name: _____

Title: _____ Address: _____

Signed: _____ Name: _____

Title: _____ Address: _____

Signed: _____ Name: _____

Title: _____ Address: _____

or

Name of Corporation: Advanced Chemical Transport, Inc. (dba ACTenviro)

Business Address: 967 Mabury Rd., San Jose, CA 95133

Corporation organized under the laws of the State of California



(*See following page.)



(*continued)

or

Name of Corporation: Advanced Chemical Transport, Inc. (dba ACTenviro)

Business Address: 967 Mabury Rd., San Jose, CA 95133

Corporation organized under the laws of the State of California

A handwritten signature in black ink, appearing to read "Walt King", is written over a horizontal line. To the right of the signature, the word "normal" is printed in a small font.



NOTE: CURRENT COPIES OF ALL APPLICABLE LICENSES MUST BE ATTACHED TO THIS PROPOSAL.

[\(See Appendix B - Licenses and Permits\)](#)



(NOTE: THE FOLLOWING FORM SHALL BE USED IN CASE CHECK OR CASH ACCOMPANIES BID.)

BID SECURITY FORM

(Check or Cash to Accompany Bid)

Accompanying this Proposal is

(check one) **(See Surety Bond)**

- o Cash
- o Certified check payable to the order of Palmdale Water District ("Owner")
- o Cashier's check payable to the order of Palmdale Water District ("Owner")

in the amount of **485,950.00**, this amount being not less than ten percent (10%) of the total amount of the bid (hereinafter referred to as "Bid Security").

The Bid Security shall become the property of the Owner provided this Proposal is accepted by the Owner through action of its legally constituted contracting authorities and the undersigned shall fail to execute a contract and furnish the required Performance and Payment Bonds, proof of insurance coverage, and other information requested and set forth in the Instructions to Bidders within the time set forth in the Contract Documents; otherwise, the Bid Security shall be returned to the undersigned. The Bid Security shall also become the property of the Owner if the undersigned withdraws their bid within forty-five (45) days after the date set for bid opening, and notwithstanding the award of the contract to another bidder.

Advanced Chemical Transport, Inc. (dba ACTenviro)

c/o Van Templeton, Sr. Project Manager

BIDDER

(NOTE: IF THE BIDDER DESIRES TO USE A BOND INSTEAD OF CHECK OR CASH, THE BID BOND FORM ON THE FOLLOWING PAGES SHALL BE EXECUTED -- THE SUM OF THIS BOND SHALL BE NOT LESS THAN 10 PERCENT OF THE TOTAL AMOUNT OF THE BID.)

PROPOSAL
PAGE P-10

MANDATORY FORM

(NOTE: THE FOLLOWING FORM SHALL BE USED WHERE THE BIDDER DESIRES TO FURNISH A BOND INSTEAD OR CHECK OR CASH.)

BID SECURITY FORM

BID BOND

KNOW ALL MEN BY THESE PRESENTS:

That we, Advanced Chemical Transport, Inc. as principal and United States Fire Insurance Company as surety, are held and firmly bound unto Palmdale Water District (hereinafter "Owner,") in the sum of \$ * _____, to be paid to the Owner, its successors, and assigns, for which payment, well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

* Ten Percent (10%) of Total Bid Amount

THE CONDITION OF THIS OBLIGATION IS SUCH, that if the certain Proposal of the above Principal for construction of the _____
Emergency Sedimentation Removal & Disposal at Littlerock Dam Reservoir
as specifically set forth in documents entitled Specification No. 20-422

all in accordance with the Contract Documents, including specifications and drawings on file at the offices of the Owner, is not withdrawn within the period of forty-five (45) days after the date set for the opening of bids or as otherwise provided in the Special Provisions, notwithstanding the award of the contract to another bidder, and that if said Proposal is accepted by the Owner through action of its legally constituted contracting authorities and if the above bound principal, its heirs, executors, administrators, successors and assigns, shall duly enter into and execute a contract for such construction and shall execute and deliver

PROPOSAL
PAGE P-10

MANDATORY FORM

the required Performance and Payment Bonds and proof of insurance coverage within ten (10) days (not including Sundays and holidays) after the date of notifications by and from said Owner, then this obligation shall become null and void, otherwise it shall be and remain in full force and effect.

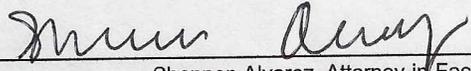
IN WITNESS WHEREOF, we hereunto set our hands and seals this 15th day of January, 20 21

(SEAL)

Advanced Chemical Transport, Inc.
(Principal)

By _____

United States Fire Insurance Company
(Surety)

By 
Shannon Alvarez, Attorney-in-Fact



NOTE:

- (1) This bid bond form is a **mandatory form**.
- (2) The bid bond form should specify an exact number of dollars which shall not be less than ten percent (10%) of the total amount of the bid.
- (3) The bid bond form must be acknowledged before notary publics, and a legally sufficient power of attorney must be attached to the bid bond to verify the authority of the party signing on behalf of the surety.

PROPOSAL
PAGE P-11

**POWER OF ATTORNEY
UNITED STATES FIRE INSURANCE COMPANY
PRINCIPAL OFFICE - MORRISTOWN, NEW JERSEY**

14467

KNOW ALL MEN BY THESE PRESENTS: That United States Fire Insurance Company, a corporation duly organized and existing under the laws of the state of Delaware, has made, constituted and appointed, and does hereby make, constitute and appoint:

Aidan Smock, Marta Collett, Richard Hallett, Sandra Corona, Shannon Alvarez

each, its true and lawful Attorney(s)-In-Fact, with full power and authority hereby conferred in its name, place and stead, to execute, acknowledge and deliver: Any and all bonds and undertakings of surety and other documents that the ordinary course of surety business may require, and to bind United States Fire Insurance Company thereby as fully and to the same extent as if such bonds or undertakings had been duly executed and acknowledged by the regularly elected officers of United States Fire Insurance Company at its principal office, in amounts or penalties not exceeding: **Fifty Million Dollars (\$50,000,000).**

This Power of Attorney limits the act of those named therein to the bonds and undertakings specifically named therein, and they have no authority to bind United States Fire Insurance Company except in the manner and to the extent therein stated.

This Power of Attorney revokes all previous Powers of Attorney issued on behalf of the Attorneys-In-Fact named above and expires on January 31, 2022.

This Power of Attorney is granted pursuant to Article IV of the By-Laws of United States Fire Insurance Company as now in full force and effect, and consistent with Article III thereof, which Articles provide, in pertinent part:

Article IV, Execution of Instruments - Except as the Board of Directors may authorize by resolution, the Chairman of the Board, President, any Vice-President, any Assistant Vice President, the Secretary, or any Assistant Secretary shall have power on behalf of the Corporation:

(a) to execute, affix the corporate seal manually or by facsimile to, acknowledge, verify and deliver any contracts, obligations, instruments and documents whatsoever in connection with its business including, without limiting the foregoing, any bonds, guarantees, undertakings, recognizances, powers of attorney or revocations of any powers of attorney, stipulations, policies of insurance, deeds, leases, mortgages, releases, satisfactions and agency agreements;

(b) to appoint, in writing, one or more persons for any or all of the purposes mentioned in the preceding paragraph (a), including affixing the seal of the Corporation.

Article III, Officers, Section 3.11, Facsimile Signatures. The signature of any officer authorized by the Corporation to sign any bonds, guarantees, undertakings, recognizances, stipulations, powers of attorney or revocations of any powers of attorney and policies of insurance issued by the Corporation may be printed, facsimile, lithographed or otherwise produced. In addition, if and as authorized by the Board of Directors, dividend warrants or checks, or other numerous instruments similar to one another in form, may be signed by the facsimile signature or signatures, lithographed or otherwise produced, of such officer or officers of the Corporation as from time to time may be authorized to sign such instruments on behalf of the Corporation. The Corporation may continue to use for the purposes herein stated the facsimile signature of any person or persons who shall have been such officer or officers of the Corporation, notwithstanding the fact that he may have ceased to be such at the time when such instruments shall be issued.

IN WITNESS WHEREOF, United States Fire Insurance Company has caused these presents to be signed and attested by its appropriate officer and its corporate seal hereunto affixed this 10th day of March, 2016.

UNITED STATES FIRE INSURANCE COMPANY



A.R.S.

Anthony R. Slimowicz, President



State of New Jersey }
County of Morris }

On this 10th day of March 2016, before me, a Notary public of the State of New Jersey, came the above named officer of United States Fire Insurance Company, to me personally known to be the individual and officer described herein, and acknowledged that he executed the foregoing instrument and affixed the seal of United States Fire Insurance Company thereto by the authority of his office.

**SONIA SCALA
NOTARY PUBLIC OF NEW JERSEY
MY COMMISSION EXPIRES 3/25/2024
No. 2163686**

Sonia Scala

Sonia Scala (Notary Public)

I, the undersigned officer of United States Fire Insurance Company, a Delaware corporation, do hereby certify that the original Power of Attorney of which the foregoing is a full, true and correct copy is still in force and effect and has not been revoked.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the corporate seal of United States Fire Insurance Company on the 15 day of January 20 21

UNITED STATES FIRE INSURANCE COMPANY

Peter M. Quinn

Peter M. Quinn, Senior Vice President



CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

STATE OF CALIFORNIA

County of San Diego

On JAN 15 2021

before me, Sandra Corona, Notary Public,
Date Insert Name of Notary exactly as it appears on the official seal

personally appeared Shannon Alvarez

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/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their 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 Sandra Corona
Signature of Notary Public

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: _____

RIGHT THUMBPRINT
OF SIGNER

Top of thumb here

Signer is Representing: _____

Signer's Name: _____

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

RIGHT THUMBPRINT
OF SIGNER

Top of thumb here

Signer is Representing: _____

MANDATORY FORM

TO BE EXECUTED BY EACH BIDDER

NON-COLLUSION AFFIDAVIT

STATE OF CALIFORNIA)
)SS
COUNTY OF Kern)

Van Templeton, being first duly sworn, declares that he/she is
[NAME]
Project Manager of Advanced Chemical Transfer DBA
(SOLE OWNER, A PARTNER, PRESIDENT, SECRETARY, ETC.) [IDENTITY OF BIDDER] ACT enviro

the party submitting a bid for a contract covering Specification No. {20-422}
{Construction of the Emergency Sedimentation Removal and
Disposal at Littlerock Dam Reservoir}

(DESCRIBE NATURE OF CONTRACT)

that such a bid is not made in the interest of or on behalf of any undisclosed person, partnership, company, association, organization, or corporation; that such bid is genuine and not collusive or sham; that said bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid, and has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, nor that anyone shall refrain from bidding; that said bidder has not in any manner, directly or indirectly, sought by agreement, communications or conference with anyone to fix the bid price of said bidder or any other bidder, nor to fix any overhead, profit, or cost element of such bid price, nor of that of any other bidder, nor to secure any advantage against the public body awarding the contract or anyone interested in the proposed contract; that all statements contained in such bid are true; and, further, that said bidder has not, directly or indirectly, submitted their bid price or any breakdown thereof, nor the contents thereof, nor divulged information or data relative thereto, nor paid and will not pay any fee in connection therewith to any corporation, partnership, company, association, organization, bid depository, nor to any member or agent thereof, nor to any other individual except to such person or persons as have a partnership or other financial interest with said bidder in their general business.

Dated: 1-18-21

Signed: Van D. Templeton
Project Manager
[TITLE]

Subscribed and sworn to before me this 18 day of January, 20 21, by

Van D. Templeton, proved to me on the basis of satisfactory evidence to be the person who appeared before me. see attached notary certifiical
Wim-Hi Li

PROPOSAL
PAGE P-13

Notary Public

SEAL

(continued next page)

PROPOSAL
PAGE P-14

CALIFORNIA JURAT WITH AFFIANT STATEMENT

GOVERNMENT CODE § 8202

- See Attached Document (Notary to cross out lines 1-6 below)
- See Statement Below (Lines 1-6 to be completed only by document signer[s], not Notary)

1 _____

2 _____

3 _____

4 _____

5 _____

6 _____

Signature of Document Signer No. 1

Signature of Document Signer No. 2 (if any)

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

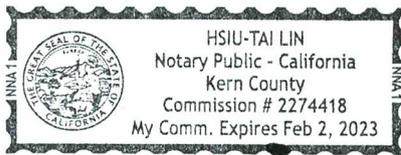
State of California
 County of Kern

Subscribed and sworn to (or affirmed) before me
 on this 18 day of January, 2021
 by Date Month Year

Van D. Templeton

Name(s) of Signer(s)

proved to me on the basis of satisfactory evidence to be the person(s) who appeared before me.



Seal
 Place Notary Seal Above

Signature HSIU-TAI LIN
 Signature of Notary Public

OPTIONAL

Though this section is optional, completing this information can deter alteration of the document or fraudulent reattachment of this form to an unintended document.

Description of Attached Document

Title or Type of Document:

Non-Collusion Affidavit

Number of Pages: 2

Document Date: 1/18/2021



APPENDIX A - PROJECT REFERENCES



ACTenviro Qualifications – Updated 12/18/2020

- Project Qualifications #1
 - Bodega Bay Fuels Facility Remediation
 - Site Address: 1820 West Shore Drive, Bodega Bay, CA 94923
 - County of Sonoma
 - Base Amount = \$365,000.00 + Change Order(s) Amount = \$23,000.00 = Final Contract Value = \$412,000.00
 - Mark Cleveland – Sr. Park Manager – 707-565-2041
 - mark.cleveland@sonoma-county.org
 - Excavation of hydrocarbon impacted soil from around fuel island and pipelines from fuel tanks, Loading, Transportation and disposal of soil at sub-title D land fill, Partial demo of tank building roof, removal and demo of steel tanks.
 - Project Start: 05-01-2019 – Project Completion: 06-01-2019

- Project Qualifications #2
 - Richmond Field Station Remediation & Restoration Mercury Fulminate Area Removal
 - 1301 South 46th Street, Richmond, CA 94804
 - University of California Berkeley
 - Base Amount \$598,085.00 + Chang Order(s) Amount = \$578,970.00 = Final Contract Value = \$1,176,455.00
 - Alicia Bihler - Office of Environmental, Health & Safety – 510-725-2528
 - abihler@berkeley.edu
 - Excavation of approx. 4,600 tons of Mercury impacted soil, Loading, Transportation & Disposal of Hazardous and non-hazardous soil, Backfill and rough grade excavation area.
 - Project Start January 2020 – Project Completion February 2020

- Project Qualification #3
 - Vishay Site Demolition, Transite Pipe Removal
 - 2201 Laurelwood Rd Santa Clara, CA
 - FE Controls-General Contractor
 - Base Amount \$724,659.00 + Change Orders = \$66,554.00 = Final Contract Value \$791,213.00
 - Florabel Espartero – President 408-969-0258
 - Florabele@fecontrols.com
 - Removal of concrete footings, foundations and crushing onsite over 10,000 cy of concrete, Grinding of 200,000 SF of asphalt, Excavation and removal of all onsite



utilities, Backfill and compaction of 300,000 gal fire water vault, Removal and T&D of over 2,000 LF of Transite Pipe, Excavation of 20 tons of contaminated soil And Rough grade out site.

- Project Start May 2020 – Project Completion July 2020

- Project Qualification #4
 - Carrizo Plain Ecological Reserve – Water Storage Project
 - San Luis Obispo County, CA
 - California Fish & Wildlife
 - Base Amount \$128,900.00
 - Scott Murata 916-375-8376
 - Scott.Murata@Wildlife.ca.gov
 - Remove / demo old water storage tanks, install new water storage tank, install piping, construct tank pads, trench water line, build new pump house.
 - Project Start July 2020 – Project Completion September 2020

- Project Qualification #5
 - City College – UST Removal
 - Ocean Campus – San Francisco, CA
 - City College
 - Base Amount \$108,800.00.00 + Change Orders = \$46,200.00.00 = Final Contract Value \$155,000.00
 - Toby Lee – PM 415-640-8168
 - ce_tlee@ccsf.edu
 - Removal of 20,000-gallon diesel underground storage tank and back fill and repair steam line. Trans and disposal of CA haz soil from UST.
 - Project Start February 2020 – Project Completion March 2020

- Project Qualification #6
 - Paradise Wildfire Complex Clean-up
 - Paradise, CA
 - EPA / EQM
 - Base Amount \$395,00.00
 - Ron McManamy – Sr. PM 425-673-2900
 - rmcmanay@eqm.com
 - Removal and packaging of waste from burnt structures throughout the paradise fire complex
 - Project November 2019 – January 2020



- Project Qualifications #7
 - Richmond Field Station Remediation & Restoration Project – EPA North Meadow – PCB Soil Removal
 - 1301 South 46th Street, Richmond, CA 94804
 - University of California Berkeley
 - Base Amount / Contract Final Total Value = \$287,000.00
 - Alicia Bihler - Office of Environmental, Health & Safety – 510-725-2528
 - abihler@berkeley.edu
 - Excavation of approx. 2,095 BCY (3,928 tons) of PCB impacted soil – Excavation, Loading Transportation & Disposal of Non-TSCA and TSCA Soil
 - Project Start November 2020 – Project Completion December 2020

- Project Qualification #8
 - CZU Wildfire Complex Clean-up
 - Santa Cruz & Butte – Northern CA
 - EPA / EQM
 - Base Amount \$395,00.00 + Additional Sites \$435,000.00 = Total value of \$830,000.00
 - Ron McManamy – Sr. PM 425-673-2900
 - rmcmanay@eqm.com
 - Removal and packaging of waste from burnt structures throughout the paradise fire complex
 - Project October 2020 – December 2020



**APPENDIX B -
LICENSES & PERMITS**

TABLE OF LICENSES/PERMITS AND COPIES
- SEE FOLLOWING PAGES



LICENSES AND PERMITS

ACTenviro is fully licensed and permitted to provide environmental and hazardous waste management services in the State of California. A summary of the various licenses, registrations and permits we hold is presented below in table format. (Copies of original licenses provided upon request.)

LICENSE / PERMIT	DESCRIPTION	EXP. DATE	COMMENTS
#897636	California State Contractor License (CSLB)	06/30/2021	Every 2 yrs
132109	California Hazardous Materials Transportation License	05/31/2021	Annual Issued by CHP
566	Trauma Scene Waste Management Practitioner	06/16/2021	Annual - Issued by CDPH (Sunnyvale)
4026	California Hazardous Waste Transportation Registration with Consolidated Transporter Notification (DTSC)	07/31/2021	Annual - Issued by DTSC
CA #0194741	California Motor Carrier Permit	N/A	Non-Expiring Issued by DMV
063020600041C	USDOT Hazardous Materials Certificate of Registration	2020-2021	(For Registration Years)
TPID# 1899999	Waste Tire Hauler	12/31/2021	Annual - Issue by Cal Recycle
TS-66	California Medical Waste Treatment & Transfer Facility Permit (CDPH)	01/12/2021	Every 5 Years ACT Medical & Escondido
Receipt # 2018500270072	Unified Carrier Registration	12/31/2021	Annual
CAR000070540	EPA ID# - Corporate (Transporter EPA ID#)	N/A	DTSC (Sunnyvale Address)
CAR000241653	EPA ID# - Escondido	N/A	Issued by DTSC
CAL000336454	EPA ID# - Merced	N/A	Issued by DTSC
CAL000427178	EPA ID# - Redlands	N/A	Issued by DTSC
CAR000286294	EPA ID# - San Jose	N/A	Issued by DTSC
CAR000224428	EPA ID# - Santa Fe Springs	N/A	Issued by DTSC
CAL000401204	EPA ID# - Sunnyvale	N/A	Issued by DTSC
ORQ000032731	EPA ID# - Oregon	N/A	Issued by DEQ
COR000251579	EPA ID# - Colorado	N/A	Issued by CDPHE
NMR000026021	EPA ID# - Albuquerque	N/A	Issued by NMED
NMR000021162	EPA ID# - Chaparral	N/A	Issued by NMED
AZR000522235	EPA ID# - Arizona	N/A	Issed by AZDEQ



ACTenviro Licenses and Permits (continued)

LICENSE / PERMIT	DESCRIPTION	EXP. DATE	COMMENTS
97-735748 00005 FH	Consolidated Seller's Permit - Escondido	N/A	Issued by CA BOE
97-735748	Consolidated Seller's Permit - Sunnyvale	N/A	Issued by CA BOE
MC # 594583	Alliance for Uniform Hazmat Transportation EPA Transporter ID# CAR000070540	06/30/2021	PHMSA# 063020600041C USDOT Census #1607894 Issuing Agency: NV Highway Patrol



CONTRACTORS STATE LICENSE BOARD

Pursuant to Chapter 9 of Division 3 of the Business and Professions Code
and the Rules and Regulations of the Contractors State License Board,
the Registrar of Contractors does hereby issue this license to:

ADVANCED CHEMICAL TRANSPORT INC

License Number 897636

to engage in the business or act in the capacity of a contractor in the following classifications:

- A - GENERAL ENGINEERING CONTRACTOR
- HAZ - HAZARDOUS SUBSTANCES REMOVAL
- B - GENERAL BUILDING CONTRACTOR

Witness my hand and seal this day,

July 13, 2015

Issued June 1, 2007

Eddie Lang, Jr., Board Chair

Cindi A. Christenson, Registrar of Contractors

This license is the property of the Registrar of Contractors,
is not transferable, and shall be returned to the Registrar
upon demand when suspended, revoked, or invalidated
for any reason. It becomes void if not renewed.

Contractor's License Detail for License # 897636



DISCLAIMER: A license status check provides information taken from the CSLB license database. Before relying on this information, you should be aware of the following limitations. (hide/show disclaimer)

- CSLB complaint disclosure is restricted by law ([B&P 7124.6](#)) If this entity is subject to public complaint disclosure, a link for complaint disclosure will appear below. Click on the link or button to obtain complaint and/or legal action information.
- Per [B&P 7071.17](#) , only construction related civil judgments reported to the CSLB are disclosed.
- Arbitrations are not listed unless the contractor fails to comply with the terms of the arbitration.
- Due to workload, there may be relevant information that has not yet been entered onto the Board's license database.

Business Information

ADVANCED CHEMICAL TRANSPORT INC
1210 ELKO DRIVE
SUNNYVALE, CA 94089
Business Phone Number:(408) 548-5050

Entity Corporation

Issue Date 06/01/2007

Expire Date **06/30/2021**

License Status

This license is current and active.

Public Works Contractor Registration Search

Enter at least one criteria to display registered public works contractor(s) matching your selections.

Note: Search results will display all of the public works contractor registrations, both current and expired. Make sure a proper registration fiscal year is selected when performing a search.

Input Label: From Date:(mm/dd/yyyy) To Date:(mm/dd/yyyy)

County: City:

[Search](#) [Reset](#)

Crafts (Select all that apply)

- Asbestos
- Boilermaker-Blacksmith
- Bricklayer/Brick Tender
- Carpenter
- Carpet, Linoleum, Resilient Tile Layer
- Cement Mason
- Consultant
- Driver (On/Off Hauling)
- Drywall Installer/Lather/Finisher
- Electrical Utility
- Electrician
- Elevator Constructor
- Field Surveyor
- General Building
- General Engineering
- Glazier
- Inspector/Field Soils, Material Tester
- Iron Worker

Registrations

Search Results: 1 found

Showing Page 1 of 1 [Previous](#) [Next](#)

[Print PDF](#) [Export](#)

[Add all to my list](#) [My List \(0\)](#)

ADVANCED CHEMICAL TRANSPORT, INC.

Detail:
 Registration Number: 1000025406
 Status: Active
 CSLB Number:
 Legal Entity Type: Corporation
 Mailing Address: 967 MABURY ROAD
 SAN JOSE
 CA 95133
 Santa Clara
 County: Santa Clara
 Craft: Driver (On/Off Hauling)
 Email: khewett@actenviro.com



[View Details](#) [+ Add to My List](#)

Registration History

Effective Date	Expiration Date
7/1/2020	6/30/2023
7/10/2019	6/30/2020
7/31/2018	6/30/2019
7/20/2017	6/30/2018
8/30/2016	6/30/2017
7/8/2015	6/30/2016

DBA

Name



Jared Blumenfeld
Secretary for
Environmental Protection



Department of Toxic Substances Control

Meredith Williams, Ph.D.
Director
1001 "I" Street
P.O. Box 806
Sacramento, California 95812-0806



Gavin Newsom
Governor

*****HAZARDOUS WASTE TRANSPORTER REGISTRATION***
HAZARDOUS WASTE OF CONCERN TRANSPORTER
WITH CONSOLIDATED TRANSPORTER NOTIFICATION**

NAME AND ADDRESS OF REGISTERED TRANSPORTER:

ADVANCED CHEMICAL TRANSPORT INC DBA ACTENVIRO
967 MABURY ROAD
SAN JOSE, CA 95133

TRANSPORTER REGISTRATION NO: 4026

EXPIRATION DATE: JULY 31, 2021

THIS IS TO CERTIFY THAT THE FIRM NAMED ABOVE IS DULY REGISTERED TO TRANSPORT HAZARDOUS WASTE IN THE STATE OF CALIFORNIA IN ACCORDANCE WITH THE PROVISIONS OF CHAPTER 6.5, DIVISION 20 OF THE HEALTH AND SAFETY CODE AND TITLE 22 OF THE CALIFORNIA CODE OF REGULATIONS, DIVISION 4.5.

THIS REGISTRATION CERTIFICATE MUST BE CARRIED WITH EACH SHIPMENT OF HAZARDOUS WASTE.

FOR REGISTRATION INFORMATION, PLEASE CALL (916) 440-7145.



(AUTHORIZED SIGNATURE)

July 1, 2020

(DATE)

California Environmental Protection Agency
Department of Toxic Substances Control
Transporter Unit
1001 I Street MS 11A, Sacramento, CA 95814
Phone: (800) 618-6942 Fax: (916) 323-3500

Consolidated Transporter Notification

DTSC Form 1299 (Revision 04/2020)

1. Business Name (Show DBA name, show name exactly as it will appear on registration; the same name or trademark is required on all vehicles): <u>Advanced Chemical Transport, Inc., DBA ACTenviro</u>			
2. Transporter Registration Number: <u>4026</u>			
3. Business Address: <u>967 Mabury Road</u> Street			
<u>San Jose</u> City	<u>CA</u> State	<u>Santa Clara</u> County	<u>95133</u> ZIP Code
4. Mailing Address (if different from above): _____ Street/P.O. Box			
City	State	County	ZIP Code
5. a) Telephone Number: <u>408-548-5050</u> b) Fax Number: <u>408-548-5053</u>			
c) E-mail Address: <u>kharsono@actenviro.com</u> (ext.)			
6. Hazardous Waste EPA Identification Numbers. If your company transports hazardous wastes, operates the designated facility, and intends to submit only the facility copy of the consolidated manifests pursuant to Health and Safety Code, section 25160(b)(5)(A), you must provide all the transporter and facility EPA identification numbers (12 characters) used by your company on these manifests. If necessary, list additional EPA identification numbers on a separate sheet.			
a) <u>CAR 000 070 540</u> b) _____			
c) _____ d) _____			

7. Hazardous Waste Streams. I intend to transport the following hazardous waste stream under the consolidated manifesting procedure, as described in Health and Safety Code, section 25160.2. Check all applicable boxes.

- A. Used oil
- B. Contents of an oil/water separator
- C. Solids contaminated with used oil
- D. Brake fluid.
- E. Antifreeze
- F. Antifreeze sludge
- G. Parts cleaning solvents, including aqueous cleaning solvents
- H. Hydroxide sludge contaminated solely with metals from a wastewater treatment process
- I. "Paint-related" wastes, including paints, thinners, filters, and sludges
- J. Spent photographic solutions
- K. Dry cleaning solvents (including perchloroethylene, naphtha, and silicone-based solvents)
- L. Filters, lint, and sludges contaminated with dry cleaning solvent
- M. Asbestos and asbestos-containing materials
- N. Inks from the printing industry
- O. Chemicals and laboratory packs collected from K-12 schools
- P. Absorbents contaminated with other wastes listed in Health and Safety Code, section 25160.2(c)
- Q. Filters from dispensing pumps for diesel and gasoline fuels

8. Name and Title of Authorized Representative
 Krista Harsono

Compliance Director

Name (print or type)

Title

Krista Harsono

5/22/20

Signature of Authorized Representative (use blue on other non-black ink) Date

Note: Keep this Consolidated Transporter Notification signed by DTSC with the valid Transporter Registration Certificate in the vehicle at all times during the transportation of hazardous waste. Transportation of waste stream(s) listed above, under the consolidated manifesting procedure, without notifying DTSC is a violation of Health and Safety Code (HSC), section 25165(a) and may be subject to significant penalties. Consolidated transporters are also required to submit quarterly reports pursuant to HSC, section 25160.2(d).

Do Not Write Below This Line (For DTSC Use Only)

Transporter Unit Representative: *Talisha J* Received Date: 5/28/2020

Print or Type Name: Talisha Jorin Expiration Date: 7/31/2021

DTSC Acknowledgement Date: 06/11/2020



STATE OF CALIFORNIA
DEPARTMENT OF CALIFORNIA HIGHWAY PATROL

**HAZARDOUS MATERIALS
TRANSPORTATION LICENSE**
CHP 360H (REV. 1/00) OPI 062

CONTROL NUMBER	LICENSE NUMBER	ISSUE DATE	EFFECTIVE DATE	EXPIRATION DATE
244138	132109	7/3/2020	6/1/2020	5/31/2021
CHP CARRIER NUMBER	LOCATION	<input checked="" type="checkbox"/> Duplicate	<input type="checkbox"/> Replacement	
CA 194741	340	<input type="checkbox"/> Initial	<input type="checkbox"/> Renewal	

PROPERTY OF THE CALIFORNIA HIGHWAY PATROL (CHP)

The original valid license must be kept at the licensee's place of business as indicated on the license and a legible copy must be carried in any vehicle or combination transporting hazardous materials and must be presented to any CHP officer upon request. This license is NON-TRANSFERABLE and must be surrendered to the CHP upon demand or as required by law. A majority change in ownership or control of the licensed activity shall require a new license. This license may be renewed by submitting an application and appropriate fee to the CHP. Persons whose licenses have expired or are otherwise no longer valid must immediately cease the activity requiring a license. THERE IS NO GRACE PERIOD. For licensing information contact CHP, Commercial Vehicle Section at (916) 843-3400.

LICENSEE NAME AND PHYSICAL STATION ADDRESS (if different than below)

ADVANCED CHEMICAL TRANSPORT, INC.
967 MABURY ROAD
SAN JOSE CA, US 95133

This carrier is on the special routing/safe stopping place mailing lists as indicated below:

- (HMX) Explosives subject to Division 14, California Vehicle Code (CVC).
- (HMPH) Poison Inhalation Hazard materials in bulk packages subject to Division 14.3, CVC.
- (HMRCQ) Highway Route Controlled Quantity radioactive materials subject to Division 14.5, CVC.

LICENSEE NAME AND MAILING ADDRESS

Attention: Krista Harsono
ADVANCED CHEMICAL TRANSPORT, INC.
967 MABURY ROAD
SAN JOSE CA, US 95133

Any person who dumps, spills, or causes the release of hazardous materials or hazardous waste upon any highway shall immediately notify the CHP or the agency having jurisdiction for that highway. The minimum fine for failure to make the appropriate notification is \$2,000.00. (CVC Section 23112.5)

DEPARTMENT OF MOTOR VEHICLES
 MOTOR CARRIER SERVICES BRANCH MS G875
 P.O. BOX 932370 Sacramento, CA. 94232-3700
 (916) 657-8153



04/28/2011

ADVANCED CHEMICAL TRANSPORT INC
 1210 ELKO DR
 SUNNYVALE, CA 94089

 <p>NON-EXPIRING MOTOR CARRIER PERMIT Combined Carrier</p>		
DEPARTMENT OF MOTOR VEHICLES Motor Carrier Services Branch P.O. BOX 932370 Sacramento, CA. 94232-3700 ADVANCED CHEMICAL TRANSPORT INC 1210 ELKO DR SUNNYVALE, CA 94089	Valid From: 05/01/2011	Valid Through: Non-Expiring
	CA#: 0194741	
	<p>The carrier named on this permit is subject to the Unified Carrier Registration Act (UCRA) of 2005, and is granted a non-expiring permit of the following classification:</p> <p style="text-align: center;">For Hire Corporation</p> <p style="text-align: center;">Not Valid for Intrastate Only Operations</p>	
Pmt Date: N/A	Office #: 154	
Account #: 288619	Tech ID: ##	
Sequence #: #NNN	Amt Paid: No Fee	

!!!IMPORTANT REMINDERS!!!

1. This non-expiring Motor Carrier Permit (MCP) will remain valid as long as you continue to conduct interstate operations. The Unified Carrier Registration Act (UCRA) of 2005 exempts combined carriers (carriers who operate both intra and interstate) from MCP requirements.
2. Federal Motor Carrier Safety Administration insurance requirements must be maintained.
3. If you commence intrastate only operations, you must renew your MCP.

California Relay Telephone Service for the deaf or hearing impaired from TDD Phones: 1-800-735-2929; from Voice Phones: 1-800-735-2922

UNITED STATES OF AMERICA
DEPARTMENT OF TRANSPORTATION
PIPELINE AND HAZARDOUS MATERIALS SAFETY ADMINISTRATION



**HAZARDOUS MATERIALS
CERTIFICATE OF REGISTRATION
FOR REGISTRATION YEAR(S) 2020-2021**

Registrant: ADVANCED CHEMICAL TRANSPORT, INC. DBA ACTENVIRO
ATTN: Krista Harsono
967 MABURY ROAD
SAN JOSE, CA 95133

This certifies that the registrant is registered with the U.S. Department of Transportation as required by 49 CFR Part 107, Subpart G.

This certificate is issued under the authority of 49 U.S.C. 5108. It is unlawful to alter or falsify this document.

Reg. No: 063020600041C Effective: July 1, 2020 Expires: June 30, 2021

HM Company ID: 56417

Record Keeping Requirements for the Registration Program

The following must be maintained at the principal place of business for a period of three years from the date of issuance of this Certificate of Registration:

- (1) A copy of the registration statement filed with PHMSA; and
- (2) This Certificate of Registration

Each person subject to the registration requirement must furnish that person's Certificate of Registration (or a copy) and all other records and information pertaining to the information contained in the registration statement to an authorized representative or special agent of the U. S. Department of Transportation upon request.

Each motor carrier (private or for-hire) and each vessel operator subject to the registration requirement must keep a copy of the current Certificate of Registration or another document bearing the registration number identified as the "U.S. DOT Hazmat Reg. No." in each truck and truck tractor or vessel (trailers and semi-trailers not included) used to transport hazardous materials subject to the registration requirement. The Certificate of Registration or document bearing the registration number must be made available, upon request, to enforcement personnel.

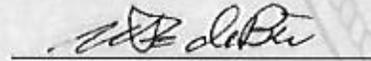
For information, contact the Hazardous Materials Registration Manager, PHH-52, Pipeline and Hazardous Materials Safety Administration, U.S. Department of Transportation, 1200 New Jersey Avenue, SE, Washington, DC 20590, telephone (202) 366-4109.

DEPARTMENT OF RESOURCES RECYCLING AND RECOVERY

REGISTERED
WASTE TIRE HAULER

Advanced Chemical Transport, Inc.
967 Mabury Road
San Jose, CA 95133

ISSUED BY:



DEPUTY DIRECTOR

VEHICLE LICENSE PLATE NUMBER: 8L64209

UNIT NUMBER (INTERNAL USE): 19

DECAL SERIAL NUMBER: 20-06645

ISSUE DATE: 12/30/2019

EXPIRATION DATE: 12/31/2020

SITE NUMBER/TPID: 1899999

FOR QUESTIONS CONCERNING THIS REGISTRATION, PLEASE CALL (866) 896-0600

 ONLY ORIGINAL REGISTRATION VALID

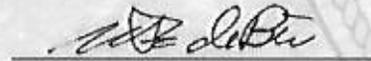
DO NOT COPY OR REPRODUCE

DEPARTMENT OF RESOURCES RECYCLING AND RECOVERY

REGISTERED
WASTE TIRE HAULER

Advanced Chemical Transport, Inc.
967 Mabury Road
San Jose, CA 95133

ISSUED BY:



DEPUTY DIRECTOR

VEHICLE LICENSE PLATE NUMBER:	<u>23702B2</u>
UNIT NUMBER (INTERNAL USE):	<u>123</u>
DECAL SERIAL NUMBER:	<u>20-06646</u>
ISSUE DATE:	<u>12/30/2019</u>
EXPIRATION DATE:	<u>12/31/2020</u>
SITE NUMBER/TPID:	<u>1899999</u>

FOR QUESTIONS CONCERNING THIS REGISTRATION, PLEASE CALL (866) 896-0600

 ONLY ORIGINAL REGISTRATION VALID

DO NOT COPY OR REPRODUCE

**California Department of Public Health
Medical Waste Management Program**

MS 7405, IMS K-2

P.O. Box 997377

Sacramento, CA 95899-7377

www.cdph.ca.gov/MedicalWaste

Date: 6/30/2020

Registrant Identifier: TSW 566

Advanced Chemical Transport, Inc.
1210 Elko Dr
SUNNYVALLE, CA 94089

Dear Sir/Madam:

Your Trauma Scene Waste Management Practitioner certificate is shown below. Please retain this certificate for your records.

If you have questions regarding this certificate, please call (916) 449-5671.

STATE OF CALIFORNIA
Department of Public Health
Medical Waste Management Program



Advanced Chemical Transport, Inc.

1210 Elko Dr
SUNNYVALLE, CA 94089

Registration No.

566

in the county of

Santa Clara

Treatment No.

is registered as a

TRAUMA SCENE WASTE MANAGEMENT PRACTITIONER

Annual Expiration Date

6/16/2021

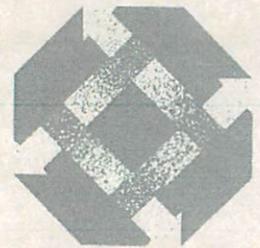
The facility named herein is registered pursuant to the provisions of the Medical Waste Management Act, Division 104, Part 14, Chapter 5 of the California Health and Safety Code, and shall be subject to all applicable provisions of the law. This permit is not transferable.

Date Issued: 6/30/2020

Thomas Horner, Chief
Medical Waste Management Program

Alliance for Uniform Hazmat Transportation Procedures Uniform Program Credentials

ADVANCED CHEMICAL TRANSPORT, INC.
967 MABURY ROAD
SAN JOSE CA 95133



**ALLIANCE
FOR UNIFORM
HAZMAT
TRANSPORTATION
PROCEDURES**

USDOT CENSUS #: 1607894

MC #: 594583

EPA TRANSPORTER ID #: CAR000070540

PHMSA #: 063020600041C

TELEPHONE NUMBER TO CALL IN CASE OF ACCIDENT OR EMERGENCY:
866-333-9222

UNIFORM PROGRAM #: UPW1607894NV

CERTIFIED BY: JOSHUA LARKIN

REGISTRATION ISSUED: **01 JULY 2020**

REGISTRATION EXPIRATION: **30 JUNE 2021**

ISSUING AGENCY: NEVADA HIGHWAY PATROL

AGENCY TELEPHONE NUMBER: 775-684-4622



State of California
Secretary of State

CERTIFICATE OF STATUS

ENTITY NAME:

ADVANCED CHEMICAL TRANSPORT, INC.

FILE NUMBER: C2079655
FORMATION DATE: 03/27/2000
TYPE: DOMESTIC CORPORATION
JURISDICTION: CALIFORNIA
STATUS: ACTIVE (GOOD STANDING)

I, DEBRA BOWEN, Secretary of State of the State of California,
hereby certify:

The records of this office indicate the entity is authorized to
exercise all of its powers, rights and privileges in the State of
California.

No information is available from this office regarding the financial
condition, business activities or practices of the entity.



IN WITNESS WHEREOF, I execute this certificate
and affix the Great Seal of the State of
California this day of May 10, 2012.

Debra Bowen

DEBRA BOWEN
Secretary of State



**APPENDIX C -
SUBCONTRACTOR QUOTE**



3D Surveying/Farrell Surveying

9569 E. Avenue Y8
(661) 317-0347

Little Rock, California 93543
dwsurvey@msn.com

RESIDENTIAL
COMMERCIAL
INDUSTRIAL
CONSTRUCTION
TOPOGRAPHY
SOLAR
ALTA

SURVEY PROPOSAL

Stock Pile at Littlerock Dam

1-14-21

Cost Proposal:

<i>Item 1 Pre Constructio:</i>	\$1900
Topography mapping of existing stake pile before removal	
<i>Item 2 Post Constructin:</i>	
Topography mapping of removed stock pile area after removal	\$1,400
<hr/>	
<i>Item 3: Project Management & mobilization fee :</i>	\$400
Project Management, Planning, Schedule, Communication, Quality assurance, Quality Review.	
Total cost of proposal:	<u>\$3,700</u>

Note: **\$2,300.00** is requested to begin the project, which would cover Item 1 & 3, final payment is based upon Item 2 field work completed by survey crew

Survey proposal & cost estimate is good for 60 days

Note: All survey request will need a minimum of one week notification for field crew scheduling for each staking request.

Only those services specifically described above are included in this proposal. Additional services, if requested by client and not described herein are excluded from this proposal, will be considered extra work, and will be billed on a time and materials, portal-to-portal basis at the rates shown below, unless client requests a cost estimate to complete the additional work. These services may include, but are not limited to:

1. Work in support of the preparation of client's final as-built plans or reports, except as described above.
2. New or proposed Right of Way Acquisitions and legal Descriptions.

3. Calculations, communications and document preparation in support of the processing of requests for information to clarify or correct the project plans and/or specifications.
4. Re-establishment of survey control destroyed through negligence or malice on the part of others.
5. Construction staking and Right of Way staking.
6. Changes to scope of work.

Hourly Rates:

Senior Surveyor Project Manager:	60.00/hr.
Licensed Land Surveyor:	50.00/hr.
Design Draftsman (CAD):	40.00/hr.
2-Man Survey Crew :	160.00/hr.
Clerical:	30.00/hr.

Insurance:

Please note that 3D Surveying carries General Liability and Workers Compensation insurance at \$1,000,000 per occurrence, or \$1,000,000 aggregate, as well as Errors and Omissions insurance at \$1,000,000 per occurrence or \$1,000,000 aggregate. If 3D Surveying Services is required to obtain additional insurance for this project beyond our current coverage, including extra additional insured parties and other costs beyond what is included under our policy, those costs will be charged as an extra to the foregoing cost proposal.

Thank you for this opportunity to offer our professional services. We look forward to working with you on this project.

David W. Farrell, President
 Professional Land Surveyor
 License No. PLS 7813

I agree to the foregoing costs and terms and by my signature hereby authorize 3D Surveying/Farrell Surveying to proceed.

Van Templeton

01/14/2021

Client Signature

Date



3D Surveying/David W. Farrell Sr.
 9569 East Avenue Y8
 Littlerock, CA 93543

Emergency Sedimentation Remo... x Registrations x +

cadir.secure.force.com/ContractorSearch?inputSearch=3D%20Surveying

State of California
 Department of Industrial Relations

Public Works Contractor Registration Search

Enter at least one criteria to display registered public works contractor(s) matching your selections.
 Note: Search results will display all of the public works contractor registrations, both current and expired. Make sure a proper registration fiscal year is selected when performing a search.

Input Label: 3D Surveying From Date:(mm/dd/yyyy) To Date:(mm/dd/yyyy)
 County: City:

Search Reset

Crafts (Select all that apply)

- Asbestos
- Boilermaker-Blacksmith
- Bricklayer/Brick Tender
- Carpenter
- Carpet, Linoleum, Resilient Tile Layer
- Cement Mason
- Consultant
- Driver (On/Off Hauling)
- Drywall Installer/Lather/Finisher
- Electrical Utility
- Electrician
- Elevator Constructor
- Field Surveyor
- General Building
- General Engineering
- Glazier
- Inspector/Field Soils, Material Tester
- Iron Worker

Registrations
 Search Results: 1 found

Print PDF Export

DAVID W. FARRELL SR.

Detail:
 Registration Number: 1000033871
 Status: Expired
 CSLB Number:
 Legal Entity Type: Sole Proprietorship
 Mailing Address: 9569 EAST AVENUE Y8
 LITTLEROCK
 CA 93543
 County: Los Angeles
 Craft:
 Email: dwsurvey@msn.com

Registration History

Effective Date	Expiration Date
1/7/2016	6/30/2016

DBA
 Name:
 3D SURVEYING

Showing Page 1 of 1 Previous Next

Add all to my list My List (0)

View Details Add to My List

Base Bid.xlsx Addendum 1.pdf Show all

PROPOSAL

BIDDER'S DECLARATION SPECIFICATION NO. 20-422

Gentlepersons:

The undersigned hereby proposes to perform all work for which a contract may be awarded them and to furnish any and all plant, labor, services, material, tools, equipment, supplies, transportation, utilities, and all other items and facilities necessary therefor as provided in the Contract Documents, and to do everything required therein for the construction of the interior building improvements as specifically set forth in documents entitled **Specification No. 20-422** - Emergency Sedimentation Removal & Disposal at Littlerock Dam Reservoir together with addenda thereto, all as set forth on the drawings and in the specifications and other Contract Documents (hereinafter the "Work"); and they further propose and agree that, if this Proposal is accepted, they will contract in the form and manner stipulated to perform all the Work called for by drawings, specifications, and other Contract Documents, and to complete all such Work in strict conformity therewith within the time limits set forth therein, and that they will accept as full payment therefor the prices set forth in the Bid Sheet(s) forming a part hereof.

(check one)

- Cash
- Cashier's check
- Certified check
- Bid Bond

properly made payable to Palmdale Water District, hereinafter designated as the Owner, for the sum of \$85,000.00 which amount is not less than ten percent (10%) of the total amount of this bid, is attached hereto and is given as a guarantee that the undersigned will execute the Agreement and furnish the required bonds and insurance if awarded the contract and, in case of failure to do so within the time provided, the

(check one)

- cash shall be retained as liquidated damages by the Owner
- proceeds of said check shall be retained as liquidated damages by the Owner
- Surety's liability to the Owner for the face amount of the Bond shall be considered as established.

It is understood and agreed that:

1. The undersigned has carefully examined all the Contract Documents, as defined in
PROPOSAL
PAGE P-1

the CONTRACT DOCUMENTS subsection of the Notice Inviting Bids, including, but not limited to, the bid quantities, any specifications regarding materials to be used, the contract provisions relating to payment for extra work and the procedures for seeking extensions of time.

2. The undersigned, by investigation at the site of the work, by review of any records available for inspection at the offices of utilities in the area affected by the Work, at any applicable public works departments, and otherwise, is satisfied as to the nature and location of the work and is fully informed as to all conditions and matters which can in any way affect the work or the cost thereof, including the location of all underground facilities in the area affected by the Work.

3. The undersigned fully understands the scope of the Work and has carefully checked all words and figures inserted in this Proposal and further understands that the Owner will in no way be responsible for any errors or omissions in the preparation of this Proposal.

4. The undersigned will execute the Agreement and furnish the required Performance and Payment Bonds and proof of insurance coverage within ten (10) days (not including Sundays and holidays) after Owner's notice of acceptance of this Proposal; and further, that, unless otherwise specified in the Special provisions, this Proposal may not be withdrawn for a period of forty-five (45) days after the date set for the opening thereof, notwithstanding the award of contract to another bidder. If the undersigned bidder withdraws this Proposal within said period, said bidder shall be liable under the provisions of the Bid Security, or said bidder and their surety shall be liable under the Bid Bond, as the case may be.

5. The undersigned hereby certifies that this Proposal is genuine and not sham or collusive or made in the interest or in behalf of any person not herein named, and the undersigned has not directly or indirectly induced or solicited any other bidder to put in a sham bid, or any other person, firm, or corporation to refrain from bidding; the undersigned has not in any manner sought by collusion to secure for themselves an advantage over any other bidder.

6. In conformance with current statutory requirement of the Labor Code of the State of California, the undersigned certifies as follows:

I am aware of the provisions of Section 3700 of the Labor Code which require every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that code, and I will comply with such provisions before commencing the performance of the work of this contract.

NOW, in compliance with the Notice Inviting Bids and all the provisions hereinbefore stipulated, the undersigned, with full cognizance thereof, hereby proposes to perform the

PROPOSAL
PAGE P-2

entire work for the prices set forth in the attached Bid Sheet(s) upon which award of contract will be made.

The undersigned bidder declares that the license held by them is theirs, is current and valid, and is in a classification appropriate to the work to be undertaken.

The undersigned declares under penalty of perjury under the laws of the State of California that the foregoing is true and correct. Executed at Costa Mesa, California.

Dated January 18 20 20

Bidder: Innovative Construction Solutions

By: John R. White

Title: Executive Vice President

Bidder's post-office address:

575 Anton Blvd, Suite 850

Costa Mesa, CA 92626

Telephone No.: 714-893-6366

Facsimile No.: 714-893-5122

Corporation organized under the laws of the State of California

Contractor's License(s): 764815

Expiration Dates: 6/30/2021

Surety or sureties:

Great American Insurance Company

CONTRACTORS ARE REQUIRED BY LAW TO BE LICENSED AND REGULATED BY THE CONTRACTORS' STATE LICENSE BOARD WHICH HAS JURISDICTION TO INVESTIGATE COMPLAINTS AGAINST CONTRACTORS IF A COMPLAINT IS FILED WITHIN THREE YEARS OF THE DATE OF THE ALLEGED VIOLATION. ANY QUESTIONS CONCERNING A CONTRACTOR MAY BE REFERRED TO THE REGISTRAR, CONTRACTORS' STATE LICENSE BOARD, P.O. BOX 26000, SACRAMENTO, CALIFORNIA 95826.

INFORMATION REQUIRED OF BIDDER

EQUIPMENT/MATERIAL SOURCE INFORMATION

The bidder shall indicate opposite each item of equipment or material listed below, the name of the manufacturer or supplier of the equipment or material proposed to be furnished under the bid. **Failure to comply with this requirement will render the proposal informal and may cause its rejection.** Awarding of a contract under this bid will not imply approval by the Owner of the manufacturers or suppliers listed by the bidder. No substitution will be permitted after award of contract unless equipment or material of the listed manufacturer or supplier cannot meet the specifications.

<u>Specification</u>	<u>Equipment/Material</u>	<u>Manufacturer/Supplier</u>
XI.A.2.1.C	Fiber Rolls	HD White Caps
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

LIST OF PROPOSED SUBSTITUTIONS

The bidder may name a proposed substitute manufacturer with an add or deduct amount which will be considered after award. The Contract award, if any, will be on Base Bid amounts.

<u>Spec Section</u>	<u>Equipment Manufacturer</u>	<u>Add</u>	<u>Deduct</u>
None	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

INFORMATION REQUIRED OF BIDDER

SITE INSPECTION REVIEW -- Describe when, by whom, and in what manner (a) the site for this proposed work was inspected on behalf of the bidder (NOTE: Failure to demonstrate diligent effort in ascertaining site conditions which may affect the Work will render this Proposal informal or nonresponsive and may result in its rejection):

Justin Gough, Project Executive, visited the site on 1/12/2021
during the mandatory bid walk and thoroughly inspected
the work area, project ingress/egress, environmental
conditions and surrounding.

COMPARABLE PROJECT EXPERIENCE -- In accordance with the REGISTRATION OF CONTRACTORS subsection of the Instructions to Bidders, describe at least five (5) comparable projects completed by bidder within past thirty-six (36) month period, including dates completed, location of work, size of project in dollars, names, addresses, and phone numbers of persons in charge of project construction, and the name and address of the public agency or firm for whom the project was constructed (NOTE: Failure to include at least five (5) jobs similar in size and scope to that contemplated under the Contract Documents will render this Proposal informal or non-responsive and may result in its rejection):

See attached project list.

Innovative Construction Solutions

Palmdale Water District

Emergency Sedimentation Removal and Disposal at Littlerock Dam Reservoir

Specification No. 20-422

List of Projects

1. Project Name: Marine Ocean Terminal Concord Site 40 Remediation
Description of Work: Excavate, Haul, and dispose offsite of 4000 CY of impacted material adjacent to Pacific Ocean. Includes installation of temp and final SWPPP BMP's, grading to drain. USACE and CDFW regulated.
Dates Completed: Jan 2020 through Dec 2020
Location: Concord, CA
Contract Amount: \$1.2M
Agency/Firm: US Army Corp/Parsons Government Services, Inc.
Agency/Firm Contact: Mark Rigby
Agency/Firm Address: 75 W. Towne Ridge Pkwy #200, Sandy, UT, 84070
Agency/Firm Phone Number: 925-768-1742

2. Project Name: Aerojet Rocketdyne Operable Unit 10 Area 40
Description of Work: Clear and grub, excavate, haul and dispose of 32,000 CY of soil, grade to drain, restore access roads, install temporary and final SWPPP BMP's.
Dates Completed: Sept 2019 to June 2020
Location: Folsom, CA
Contract Amount: \$3.2M
Agency/Firm: Hargis and Associates, Inc.
Agency/Firm Contact: Rob Wilhelm
Agency/Firm Address: 9171 Towne Center Drive, San Diego, CA 92122
Agency/Firm Phone Number: 619-521-0165

3. Project Name: Remedial Excavation at Camp Parks PRFTA-06
Description of Work: Excavation, haul, and disposal of 19,925 CY of contaminated soil and debris, implementation of SWPPP and biological temporary and permanent BMP's, final grade to drain and site restoration.
Dates Completed: Sept 2019 through October 2020
Location: Dublin, CA
Contract Amount: \$6.7M
Agency/Firm: Ahtna Environmental, Inc.
Agency/Firm Contact: Bruce Wilcer
Agency/Firm Address: 296 12th Street, Marina, CA 93933
Agency/Firm Phone Number: 831-384-3735

4. Project Name: Chemours Oakley Soil Remediation
Description of Work: Excavation of over 10,000 CY impacted soil and subsequent stabilization/treatment, aeration, and/or transportation and disposal, pumping and disposal of groundwater, removal of subsurface treated wood trenches, and backfill/restoration.
Dates Completed: Oct 2018 to Dec 2020
Location: Oakley, CA
Contract Amount: \$3.4M
Agency/Firm: The Chemours Company, FC, LLC
Agency/Firm Contact: Sean J Mullin
Agency/Firm Address: 1007 Market Street, Wilmington, DE, 19899
Agency/Firm Phone Number: 302-773-2250

5. Project Name: Tuolumne River Sheet Pile and Dam Debris Removal Project
Description of Work: Reroute river flow around work zone, excavate and remove sediments and debris from Dennett Dam, restore river flow, install temporary and permanent SWPPP and Biological BMP's, final grade to drain, site restoration. USACE and CDFW regulated.
Dates Completed: July 2018 to December 2018
Location: Modesto, CA
Contract Amount: \$1.4M
Agency/Firm: City of Modesto
Agency/Firm Contact: Jerry Casado
Agency/Firm Address: 1010 Tenth Street, Suite 4600, Modesto, CA 95353
Agency/Firm Phone Number: 209-341-2934

CONTRACTOR'S LICENSING STATEMENT

The undersigned is licensed in accordance with the laws of the State of California providing for the registration of Contractors.

Contractor's License Number(s), Type(s) and Expiration Date(s): _____
California A-Haz-C21

Expiration Date: 6/30/2021

Name of Individual Contractor (print or type): NA

Signature of Owner: _____

Business Address: _____

or

Name of Partnership or Firm: NA

Business Address: _____

Signature, name, title and address of partners signing on behalf of the partnership:

Signed: _____ Name: _____

Title: _____ Address: _____

Signed: _____ Name: _____

Title: _____ Address: _____

Signed: _____ Name: _____

Title: _____ Address: _____

or

Name of Corporation: Innovative Construction Solutions

Business Address: 575 Anton Boulevard, Suite 850

Corporation organized under the laws of the State of California



SEAL

John R. White

Signature of Secretary of Corporation

NOTE: CURRENT COPIES OF ALL APPLICABLE LICENSES MUST BE DOWNLOADED TO THE PROCUREMENT WEBSITE.

PROPOSAL
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MANDATORY FORM

(NOTE: THE FOLLOWING FORM SHALL BE USED WHERE THE BIDDER DESIRES TO FURNISH A BOND INSTEAD OF CHECK OR CASH.)

BID SECURITY FORM

BID BOND

KNOW ALL MEN BY THESE PRESENTS:

That we, INNOVATIVE CONSTRUCTION SOLUTIONS as principal and GREAT AMERICAN INSURANCE COMPANY as surety, are held and firmly bound unto Palmdale Water District (hereinafter "Owner,") in the sum of \$ 85,000.00 -----, to be paid to the Owner, its successors, and assigns, for which payment, well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that if the certain Proposal of the above Principal for construction of the _____
Emergency Sedimentation Removal & Disposal at Littlerock Dam Reservoir
as specifically set forth in documents entitled Specification No. 20-422

all in accordance with the Contract Documents, including specifications and drawings on file at the offices of the Owner, is not withdrawn within the period of forty-five (45) days after the date set for the opening of bids or as otherwise provided in the Special Provisions, notwithstanding the award of the contract to another bidder, and that if said Proposal is accepted by the Owner through action of its legally constituted contracting authorities and if the above bound principal, its heirs, executors, administrators, successors and assigns, shall duly enter into and execute a contract for such construction and shall execute and deliver

PROPOSAL
PAGE P-10

MANDATORY FORM

the required Performance and Payment Bonds and proof of insurance coverage within ten (10) days (not including Sundays and holidays) after the date of notifications by and from said Owner, then this obligation shall become null and void, otherwise it shall be and remain in full force and effect.

IN WITNESS WHEREOF, we hereunto set our hands and seals this 14TH day of JANUARY, 20 21

(SEAL)

INNOVATIVE CONSTRUCTION SOLUTIONS
(Principal)

By Hirad Emadi,
President

(SEAL)

GREAT AMERICAN INSURANCE COMPANY
(Surety)

By Jennifer Ochs
JENNIFER OCHS, ATTORNEY-IN-FACT

NOTE:

- (1) This bid bond form is a **mandatory form**.
- (2) The bid bond form should specify an exact number of dollars which shall not be less than ten percent (10%) of the total amount of the bid.
- (3) The bid bond form must be acknowledged before notary publics, and a legally sufficient power of attorney must be attached to the bid bond to verify the authority of the party signing on behalf of the surety.

PROPOSAL
PAGE P-11

CALIFORNIA ACKNOWLEDGMENT

CIVIL CODE § 1189

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California

County of Orange

On 1/15/2021

Date

before me,

Monique Stefanovic, Notary Public

Here Insert Name and Title of the Officer

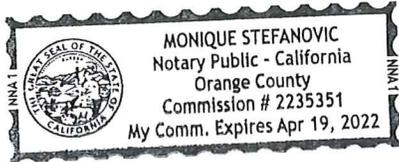
personally appeared Atihad Emadi

Name(s) of Signer(s)

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/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their 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

[Handwritten Signature]
Signature of Notary Public

Place Notary Seal and/or Stamp Above

OPTIONAL

Completing this information can deter alteration of the document or fraudulent reattachment of this form to an unintended document.

Description of Attached Document

Title or Type of Document: Bid Security Form

Document Date: 1/14/2021

Number of Pages: _____

Signer(s) Other Than Named Above: _____

Capacity(ies) Claimed by Signer(s)

Signer's Name: _____

Signer's Name: _____

Corporate Officer – Title(s): _____

Corporate Officer – Title(s): _____

Partner – Limited General

Partner – Limited General

Individual Attorney in Fact

Individual Attorney in Fact

Trustee Guardian or Conservator

Trustee Guardian or Conservator

Other: _____

Other: _____

Signer is Representing: _____

Signer is Representing: _____

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

CIVIL CODE § 1189

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California)
County of LOS ANGELES)

On JAN 14 2021 before me, RHONDA LARSON, NOTARY PUBLIC,
Date Here Insert Name and Title of the Officer

personally appeared JENNIFER OCHS
Name(s) of Signer(s)

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~~/~~they~~ executed the same in ~~his~~/~~her~~/~~their~~ authorized capacity(~~ies~~), and that by ~~his~~/~~her~~/~~their~~ 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 [Handwritten Signature]
Signature of Notary Public
RHONDA LARSON, NOTARY PUBLIC

Place Notary Seal Above

OPTIONAL

Though this section is optional, completing this information can deter alteration of the document or fraudulent reattachment of this form to an unintended 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: _____

Corporate Officer — Title(s): _____

Partner — Limited General

Individual Attorney in Fact

Trustee Guardian or Conservator

Other: _____

Signer Is Representing: _____

Signer's Name: _____

Corporate Officer — Title(s): _____

Partner — Limited General

Individual Attorney in Fact

Trustee Guardian or Conservator

Other: _____

Signer Is Representing: _____

GREAT AMERICAN INSURANCE COMPANY®

Administrative Office: 301 E 4TH STREET • CINCINNATI, OHIO 45202 • 513-369-5000 • FAX 513-723-2740

The number of persons authorized by this power of attorney is not more than SIX

No. 0 21413

POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS: That the GREAT AMERICAN INSURANCE COMPANY, a corporation organized and existing under and by virtue of the laws of the State of Ohio, does hereby nominate, constitute and appoint the person or persons named below, each individually if more than one is named, its true and lawful attorney-in-fact, for it and in its name, place and stead to execute on behalf of the said Company, as surety, any and all bonds, undertakings and contracts of suretyship, or other written obligations in the nature thereof; provided that the liability of the said Company on any such bond, undertaking or contract of suretyship executed under this authority shall not exceed the limit stated below.

	Name	Address	Limit of Power
PAUL BOUCHER	TIMOTHY J. NOONAN	ALL OF	ALL
JANINA MONROE	DENNIS LANGER	LOS ANGELES,	\$100,000,000.00
JENNIFER OCHS	ADRIANA VALENZUELA	CALIFORNIA	

This Power of Attorney revokes all previous powers issued on behalf of the attorney(s)-in-fact named above.

IN WITNESS WHEREOF the GREAT AMERICAN INSURANCE COMPANY has caused these presents to be signed and attested by its appropriate officers and its corporate seal hereunto affixed this 18TH day of MAY, 2020
Attest

GREAT AMERICAN INSURANCE COMPANY



Steph C. B.

Assistant Secretary

Mark V. Vicario

Divisional Senior Vice President

STATE OF OHIO, COUNTY OF HAMILTON - ss:

MARK VICARIO (877-377-2405)

On this 18TH day of MAY, 2020, before me personally appeared MARK VICARIO, to me known, being duly sworn, deposes and says that he resides in Cincinnati, Ohio, that he is a Divisional Senior Vice President of the Bond Division of Great American Insurance Company, the Company described in and which executed the above instrument; that he knows the seal of the said Company; that the seal affixed to the said instrument is such corporate seal; that it was so affixed by authority of his office under the By-Laws of said Company, and that he signed his name thereto by like authority.



SUSAN A KOHORST
Notary Public
State of Ohio
My Comm. Expires
May 18, 2025

Susan A Kohorst

This Power of Attorney is granted by authority of the following resolutions adopted by the Board of Directors of Great American Insurance Company by unanimous written consent dated June 9, 2008.

RESOLVED: That the Divisional President, the several Divisional Senior Vice Presidents, Divisional Vice Presidents and Divisional Assistant Vice Presidents, or any one of them, be and hereby is authorized, from time to time, to appoint one or more Attorneys-in-Fact to execute on behalf of the Company, as surety, any and all bonds, undertakings and contracts of suretyship, or other written obligations in the nature thereof; to prescribe their respective duties and the respective limits of their authority; and to revoke any such appointment at any time.

RESOLVED FURTHER: That the Company seal and the signature of any of the aforesaid officers and any Secretary or Assistant Secretary of the Company may be affixed by facsimile to any power of attorney or certificate of either given for the execution of any bond, undertaking, contract of suretyship, or other written obligation in the nature thereof, such signature and seal when so used being hereby adopted by the Company as the original signature of such officer and the original seal of the Company, to be valid and binding upon the Company with the same force and effect as though manually affixed.

CERTIFICATION

I, STEPHEN C. BERAHA, Assistant Secretary of Great American Insurance Company, do hereby certify that the foregoing Power of Attorney and the Resolutions of the Board of Directors of June 9, 2008 have not been revoked and are now in full force and effect.

Signed and sealed this 14TH day of JANUARY, 2021



Steph C. B.

Assistant Secretary

P A L M D A L E W A T E R D I S T R I C T
B O A R D M E M O R A N D U M

DATE: January 19, 2021 **January 25, 2021**
TO: BOARD OF DIRECTORS **Board Meeting**
FROM: Mr. Scott Rogers, Engineering Manager
VIA: Mr. Adam Ly, Assistant General Manager
Mr. Dennis D. LaMoreaux, General Manager
RE: ***AGENDA ITEM NO. 7.3 – CONSIDERATION AND POSSIBLE ACTION ON AUTHORIZING STAFF TO ENTER INTO A CONTRACT FOR INSPECTION AND CLEANING OF THE DISTRICT’S RESERVOIRS WITH TANK INDUSTRY CONSULTANTS. (\$297,360.00, NOT-TO-EXCEED, FOR FISCAL YEARS 2021, 2022 AND 2023 – BUDGETED – WORK ORDER NO. 20-111 – ENGINEERING/GRANT MANAGER ROGERS)***

Recommendation:

Staff recommends that the Board authorize staff to enter into a contract with Tank Industry Consultants for Reservoir Inspections and Cleanings.

Alternative Options:

The alternative is to continue without inspection and cleaning of the District’s reservoirs.

Impact of Taking No Action:

The potential impact from taking no action would result in the lack of professional inspection services, recommendations, and adequate funding for future reservoir maintenance projects.

Background:

Staff advertised the Request for Proposals (RFP) in October 2020 for the inspection, cleaning, and reporting of the condition of twenty-one (21) reservoirs and received two (2) proposals from Tank Industry Consultants and CSI Services, Inc. Advanced Diving Services declined to submit a proposal. The selection committee evaluated the proposals. Tank Industry Consultants’ proposal was ranked highest (see scoring summary below) and was selected based on the approach provided in their proposal, their project experience in water tank engineering, and inspection services.

In the past, the District has contracted with various firms to complete inspections and cleanings of the District’s reservoirs. The existing reservoirs have been inspected every 3-5 years, which meets AWWA standards. While the inspections, cleanings and reporting have been maintained, with the last one completed in 2018, staff sought a more comprehensive report that will not only include the typical inspection of the coating systems, but also the structural integrity and safety of each tank.

BOARD OF DIRECTORS
PALMDALE WATER DISTRICT

VIA: Mr. Adam Ly, Assistant General Manager
Mr. Dennis D. LaMoreaux, General Manager

January 19, 2021

Tank Industry Consultants will bring expertise to complete the reports for each reservoir with recommendations and estimated costs for future maintenance. This will allow the District to budget and plan for future capital improvement projects.

Strategic Plan Initiative/Mission Statement:

This item is under Strategic Initiative No. 3 – Systems Efficiency. This item directly relates to the District’s Mission Statement.

Budget:

This item is budgeted and will be covered as part of Work Order No. 20-111.

Supporting Documents:

- Cost Summary
- Scoring Summary
- Tank Industry Consultants, Inc. proposal

Cost Summary by Fiscal Year
Reservoir Inspection and Cleaning

Fiscal Year	2021	2022	2023
Budget Amount	\$100,000	\$100,000	\$100,000

Reservoir Inspection and Cleaning Proposal Scoring Summary

Vendor	Chris Bligh	Jaron Hollida	Dennis LaMoreaux	Adam Ly	Total Score
CSI Services, Inc.	68.0%	84.0%	48.0%	86.5%	71.63%
Tank Industry Consultants	100.0%	90.0%	86.0%	84.5%	90.13%

STATEMENT OF QUALIFICATIONS RESERVOIR INSPECTION AND CLEANING



PREPARED FOR

Palmdale Water District
Palmdale, California 93550

December 15, 2020

PREPARED BY

Tank Industry Consultants
Offices Nationwide

Engineering Water Tanks Since 1979

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A. LETTER OF INTRODUCTION

Palmdale Water District
2029 E Avenue Q
Palmdale, California 93550

Members of the Selection Committee:

Thank you for allowing Tank Industry Consultants (TIC) to present our qualification in response to your Request for Proposal Reservoir Inspection and Cleaning issued October 26, 2020. TIC's area of expertise is water storage tank engineering and inspection. We have provided professional engineering services to the water storage tank industry since 1979. To augment the Professional Engineering and Inspection Services provided by TIC, we have elected to partner with Blue Locker Commercial Diving, who will perform the dive evaluations and in-service cleaning, and Mistras Group, who will perform API 653 Inspection duties. We are confident that this assembled TIC Team will provide Palmdale Water District the very best water tank engineering and inspection services available. Our proposal addresses the scope of this Request for Proposal and the goals of the District's tank inspection considering our comprehensive expertise to provide the District with the best solution. Our approach is based on:

- Our vast experience and knowledge base of tank inspections and issues related to water tanks of all types and materials (ground storage and elevated, in-ground, partially-buried and buried, steel and concrete, welded and bolted).
- Our intimate knowledge of AWWA's water tank standards and participation and leadership in the standards committees related thereto.
- Our industry leadership in developing a comprehensive water tank inspection standard and revision and update to the steel tank manual.
- Our extensive knowledge of steel tank design to AWWA D100 and D103 and API 650 and 12B standards and good construction.

Thank you for giving us this opportunity to present our unique water tank engineering and inspection qualifications to Palmdale Water District. We assure we will work with the District to develop a final project approach that provides a best solution for your goals and needs. We have one comment regarding the District's professional services agreement which is noted under Item I on the final page of this document. If you have any questions or need additional information, please feel free to contact me at Stein@TankIndustry.com or 317/271-3100 or Lourdes Borrego-O'Brien, Business Development Manager, at Borrego-o'brien@TankIndustry.com or 915-549-3471 in our El Paso, Texas office.

Sincerely,
Tank Industry Consultants



Gregory R. "Chip" Stein, P.E.
Managing Principal
7740 W. New York Street
Indianapolis, Indiana 46214

B. PROFILE OF FIRM

FIRM'S SIZE AND ORGANIZATIONAL STRUCTURE

Tank Industry Consultants currently has 40 employee-owners. Our engineering staff includes three registered professional engineers who are collectively licensed in 43 states and the District of Columbia and four additional degreed engineers. TIC's Chief Engineer, Mr. Leslie Scott, P.E., is located in Atascadero, California, approximately 3 hours from Palmdale. Leslie was the primary designer, Engineer of Record, or engineering manager for the tank contractor on nine of the tanks that are part of this RFP. In addition, he was the primary designer, Engineer of Record, or engineering manager for the tank contractor for at least six additional steel tanks built in the Palmdale area for developers or Los Angeles County Water Works District No. 40. With Mr. Scott's detailed involvement with the engineering and design of those tanks, he has intimate familiarity with the structural details of the tanks and roof structure systems.

Our Field Services Department is comprised of twenty-three highly trained individuals with an average of over twenty-two years' experience each. TIC's technicians were past tank erectors, painters, or welders. Many were crew supervisors, and each has many years' experience as professional evaluation technicians. ALL of TIC's technicians are NACE Certified or trained.

TIC's engineering and field departments are supported by three Project Managers, one Safety Director and six Administrative staff members.

FINANCIAL STABILITY

For more than 40 years, Tank Industry Consultants has maintained a fiscally sound, responsible operating environment that has allowed us to provide professional engineering services to more than 2,750 clients. TIC continues to make sound investments in the people and equipment required to provide public and private entities with the assistance they need to maintain these valuable components of their infrastructure. TIC is 100% employee owned through our Employee Stock Option Program (ESOP).

CAPACITY AND RESOURCES

TIC's current engineering workload is approximately 50% of our capacity and our inspection workload is approximately 75% of capacity. TIC evaluates and prepares reports on average for 500 tanks per year. Each year, we prepare detailed technical specifications for approximately 100 new tank and tank rehabilitation projects, and we will provide on-site observation of contractor workmanship for approximately 80 of those projects plus approximately 10 projects for which TIC did not provide specifications.

Coordination and staffing multiple tank projects are what we do every day. Once a Notice to Proceed or signed contract is received in our office, the information is electronically routed to the field, engineering, and operations personnel. Prior to this phase, our Engineering Department and Jim Peyer, our Field Coordinator, will be available to review system operating characteristics with the District to assist in determining the schedule to cause minimal impact on the system operation. A kick-off meeting will be scheduled to discuss your project and schedule in detail. Once the field work is completed the data is returned to the Headquarters Office where it is added to the engineering schedule and assigned to a report writer. Once completed, the draft report will be reviewed by our Managing Principal, Chief Engineer, or both, who are California Licensed Professional Engineers. The report is then returned to the writer for any required modifications. Once all revisions and modifications are completed, the draft report and photographs are turned over to our experienced support staff for assembly and distribution,

but not until one last review is completed by our Office Manager to verify that the report has been printed and assembled in a professional manner. The draft report will be submitted to the District for review and comment. After the District has provided comments, TIC will revise the report and it will be reviewed by one of our California Licensed Professional Engineers again. Our support staff will assemble the final report which will be certified by a California Licensed Professional Engineer. Our Office Manager will once again verify that the report has been printed and assembled correctly prior to the final report being distributed.

Daily and weekly meetings will be held to confirm that our work plan is meeting all critical milestone dates. Progress against our plan will be monitored on a weekly basis. Regular monitoring of progress will ensure completion within the District's timeline.

LAWSUIT OR LITIGATION

We do not have any lawsuits or litigations pending or that has occurred within the last five years or any type of project where claims or settlements were paid by Tank Industry Consultants or our insurers within the last five years.

C. QUALIFICATION OF FIRM

Tank Industry Consultants (TIC) was founded in 1979 to provide professional engineering services exclusively to the water storage tank industry. During the past 41 years, TIC has grown to be the nation's leading engineering company specializing in water storage tanks. TIC continues to grow and has built a remarkable staff of engineers, field technicians, and support personnel to provide unmatched tank engineering and inspection services for over 2,750 water storage tank owners throughout the United States, and at naval facilities worldwide. We have provided these services on over 17,500 water tanks! **We provide these services without any desire to obtain contracts for tank repair or repainting, or to sell materials.**

Our services have been enhanced through the knowledge gained from literally thousands of tank evaluations combined with our engineers' leadership and involvement in Industry Standard committees. Mr. Gregory R. "Chip" Stein, P.E., TIC's Managing Principal, Chairs the American Water Works Association's Committee (AWWA) on Steel and Composite Water Storage Tanks and the Committee for the Inspection of Water Tanks and Related Facilities Standards. Chip Stein also chairs the M42 Manual Revision Task Force. Leslie Scott is a member of the AWWA Standards Committee on Steel and Composite Water Storage Tanks as well as five additional Subcommittees and Chairs the Carbon Steel Flat-Bottom Welded Steel Tanks for Water Storage Subcommittee. Our Managing Principal and Chief Engineer are both California Registered Professional Engineers.

To supplement the Professional Engineering and Inspection Services provided by TIC, we have elected to partner with Blue Locker Diving with an office in Las Vegas, Nevada, who will perform the dive evaluations and in-service cleaning, and Mistras Group, who will perform API 653 Inspection duties.

Blue Locker Commercial Diving was established in 2011 and is based in Nevada. Blue Locker Commercial Diving Services, LLC, inspects and cleans drinking water storage systems in compliance with AWWA, OSHA, SSPC, AWS, NACE, and ACI. Their team of certified commercial divers total over 25 years' experience.

Mistras Group was founded in 1978 and has approximately 5,000 employees worldwide. Their headquarters is located in Princeton Junction, New Jersey and they have over 115 locations worldwide. Mistras will be providing an API 653 Certified Team Leader who will co-lead with TIC's NACE III Certified Field Technician. Mistras will provide API653 services on the interiors of the three welded tanks that will be drained for evaluation.

INSPECTION PROTOCOL FOR WATER STORAGE TANKS AND CONSIDERATIONS OF API 653

Steel water storage tanks are generally designed and constructed in accordance with American Water Works Association's (AWWA) Standard D100 or AWWA D103 for bolted steel tanks. The D100 standard covers both ground-supported, flat-bottom tanks as well as elevated tanks on steel towers. The D103 standard covers bolted steel of both the flat-panel and flange-shell configurations. Because water storage tanks are commonly used for potable water supply and fire protection storage and in order to provide a high probability of continued service in post emergency operation or overload conditions, the AWWA standards prescribe conservative design requirements with higher factors of safety than normally used in industry codes and standards for petroleum tanks and other steel structures.

The American Petroleum Institute's (API) Standard 653 is an inspection standard for tanks that were designed and constructed in accordance with API Standard 650, the standard for ground-supported, flat-bottom, oil storage tanks. The API 650 standard allows significantly higher allowable stresses, and thereby reduced factors of safety as compared to AWWA D100, for the design of oil storage tanks. Additionally, the provisions of API 653 are not applicable to concrete tanks and some of the provisions of API 653 cannot be directly applied or suitably adapted to bolted steel tanks.

Although AWWA does not have a current standard for inspection, repair, or rehabilitation of water tanks, AWWA does publish a Manual of Water Supply Practice for steel water storage tanks, Manual M42 that includes recommendations for their inspection. In addition to providing the scope of a detailed tank inspection, report, and resulting recommendations, AWWA M42 also provides the relevant qualifications for selecting a qualified tank engineering and inspection firm. Also, Appendix C of Manual M42 contains what was previously a standalone standard, AWWA D101, Inspecting and Repairing Steel Water Tanks. Together, the content of the body of the manual and the appendix provide the appropriate basis for establishing an inspection and evaluation plan for steel water storage tanks. During the pre-bid inspection described in AWWA M42, detailed information about the tank size, thickness, and condition of the tank components is collected. Then, to supplement the inspection and evaluation, we recommend that a structural analysis of the tank be performed in accordance with current editions of applicable codes and standards to determine the suitability of the tank to meet current requirements while remaining within the allowable stress and load limits established by AWWA D100. The inspection and evaluation report will also identify areas of structural deterioration that require strengthening or member replacement. Additionally, in this report we would identify other areas of deficiencies identified during the inspection including issues related to capacity of venting and overflow components, structural components, sanitary considerations (for potable water tanks), anchorage, coating systems, foundation problems, tank security, site security, safety, drainage, and compliance with the requirements of AWWA D100.

Additionally, under the recently passed America's Water Infrastructure Act of 2018, water systems under the scope of the act are required to perform a risk and resiliency assessment of the water system components for their capacity to withstand various environmental hazards including wind loads, earthquake loads, snow loads and malevolent acts. The evaluation of tank and site security in addition to the supplementary structural analysis mentioned above can be used as the basis for the risk assessment of the tank required under the AWIA regulations.

Tank Industry Consultants is heavily involved in the standards development process for AWWA for tank related standards. Chip Stein, TIC's managing principal, is the Chairman of that committee as well as the subcommittee currently updating AWWA Manual M42, and the subcommittee currently developing a new standalone edition of AWWA D101, standard for inspection of water storage facilities. Leslie Scott, our Chief Engineer, has been personally involved with the steel tank committee, and revision and updates to the relevant tank standards, for nearly 35 years. He is currently Chairman of the steel tank subcommittee for development of a standalone standard for ground-supported welded-steel water storage tanks. Additionally, he has been preparing structural design and analysis of ground-supported steel tanks for over 40 years, including tanks designed and constructed to API standards. Our engineering manager is also an active member of several of the subcommittees for the steel tanks standards. Collectively, our expertise in tank design and intimate knowledge of tank standards and our leadership in the update and revision of these standards, allows us to definitively state the appropriate industry standards for water tank inspection.

For the reasons stated above, assessment of a water tank in accordance with API 653 is less conservative than the level of safety required by the AWWA standards. The provisions of AWWA Manual M42 provide the appropriate requirements for the inspection, assessment, and development of recommendations for repair and rehabilitation of a steel water storage tank.

However, the AWWA standards and manual do not include any content similar to the tank bottom integrity provisions of API 653. For welded steel tanks, the primary provisions of the tank bottom integrity evaluation per API 653 include a detailed visual inspection combined with magnetic flux leakage scans of the tank bottom and a shell settlement survey supplemented, when necessary, with manual ultrasonic thickness readings for verification of the MFL scans. Therefore, TIC believes that the proper inspection protocol for the tanks should be based on a comprehensive evaluation of each tank's conformance to the requirements of the relevant tank standard. Where drained evaluations of welded steel tanks are planned, our evaluation approach would be supplemented with detailed visual inspection of the tank bottom combined with spot ultrasonic thickness readings. The fees include API 653 shell settlement survey; however, if deemed unnecessary, price would be reduced. If indicated by the spot ultrasonic thickness readings on the tank bottom and the settlement survey, an MFL scan of the entire tank floor would be conducted under the Optional Services portion of this proposal and fees would be provided at that time.

PROJECT EXPERIENCE

TIC performs over 600 tank projects each year. In 2019, Tank Industry Consultants provided 296 tank evaluations utilizing an ROV to evaluate tank interiors and 240 drained evaluations. Through November 2020, TIC has performed 238 ROV evaluations and 169 drained evaluations.

TANK INDUSTRY CONSULTANTS

City of North Las Vegas

Mr. Stephen Gordon
Acting Water Operations Supervisor
gordons@cityofnorthlasvegas.com
(702) 633-1299
2829 Fort Sumter
North Las Vegas, Nevada 89030

During the last four years, Tank Industry Consultants has performed twenty-five evaluations for the City of North Las Vegas' water storage tanks. Below is one example.

5,000,000 Gallon Deer Springs Steel Ground Storage Tank in North Las Vegas, Nevada

TIC performed a dry evaluation of the Deer Springs Steel Ground Storage Tank to assess the condition of the tank and provide recommendations for rehabilitation. TIC was given the notice to proceed on March 15, 2017. The dry evaluation was performed on October 16, 2017, with the final report submitted on November 2, 2017. TIC subsequently prepared specifications for the repair and repainting of the interior and exterior of the Deer Springs Tank as well as providing project representation throughout the rehabilitation. TIC was responsible for 100% of the project, performing 99.5% with the final .5% being performed by ESG Laboratories to perform paint sample testing. Final contract price for the evaluation was \$6,000. There were no change orders or additional fees charged beyond original proposal.

Carroll County Water Authority

Mr. Thomas Kohler, P.E.
Engineering Manager
Tkohler@ccwageorgia.com
(678) 890-0055
556 Old Bremen Road
Carrollton, Georgia 30117

2,000,000 Gallon North Hickory Level Concrete Ground Storage Tank located in Villa Rica, Georgia

TIC performed a dive evaluation of the North Hickory Level Concrete Ground Storage Tank to assess the condition of the tank as related to structural, safety, sanitary, and operational requirements. The evaluation was also designed to assess the location, severity, and number of observed leaks in the tank and make recommendations for the leak. Notice to proceed was given on April 23, 2018, the dive evaluation was performed on May 23, 2018, and the evaluation report was issued on June 8, 2018. A teleconference was held on June 28, 2018 to discuss the report and next options regarding rehabilitation or replacement options. TIC was responsible for 100% of the project, performing 99.5% with the final .5% being performed by ESG Laboratories to perform paint sample testing. Final contract price was \$15,700, which included an additional fee of \$490.50 for the teleconference.

Naval Facilities Engineering Services

Mr. Martin Gaffey, P.E.
Martin.gaffey@navy.mil
(202) 433-5170
720 Kennon Street Southeast, Suite 333
Washington Navy Yard
Washington, DC 20374

The U.S. Navy awarded Tank Industry Consultants an indefinite delivery/indefinite quantities contract for water storage tank engineering services worldwide in 2003. The quality and value of services TIC has provided the Navy has been demonstrated in the continuous renewal of the contract since then, with the most recent five-year renewal occurring in December 2020. During the course of the contract, TIC has performed 833 tank inspections at 99 bases in 21 states and 16 countries.

Many of the tanks evaluated for the Navy must remain full for the inspection due to their importance in providing water for fire protection. In these situations, TIC either performs an ROV evaluation of the tank interior, or a member of TIC's Certified Commercial Dive Team performs a dive inspection of the tank interior in strict accordance with the U.S. Navy Dive Manual, ACOE EM385-1-1, and OSHA Diving Standards.

Evaluation of Eleven Tanks at Various California Bases.

All tanks were evaluated in September and October 2018 under the responsible charge of James A. Peyer, NACE 3. Included in the eleven tanks were a buried concrete tank, three partially buried tanks, two bolted steel ground tanks, two concrete ground level tanks, three welded steel tanks. All tanks were exterior evaluated and their interiors were evaluated by ROV. The reports were prepared in the requested time and there were no change orders or additional fees, while staying within proposed fees. TIC was responsible for 100% of the project. Specific fees cannot be disclosed.

Lake Havasu City

Mr. Brent Morris
Utility Supervisor
morrisb@lhcaz.gov
(928) 855-2618
900 London Bridge Road
Lake Havasu City, Arizona 86404

TIC has performed dry evaluations along with raft evaluations on 15 welded steel and bolted steel water storage tanks ranging from 50,000 gallon to 2,000,000 gallons.

1,000,000 Gallon Tank S-1C-24 Ground Storage Tank in Lake Havasu City, Arizona. TIC evaluated this tank in February 2017. The purpose of the evaluation was to determine the condition of the tank interior, exterior, and accessories. Recommendations for recoating, repairing, corrosion protection, and maintenance were also included as well as budget estimates for the work, anticipated life of the coatings and the structure, and the replacement cost of the tank. It was noted in the report that the bottom plate should be surveyed to determine if the settlement required additional repairs. In a subsequent project, TIC hired Mistras Group to perform MFL floor scanning of this tank for further review and a report was prepared noting the results. The initial evaluation project fee was \$8,600 and there were no additional evaluation fees incurred.

BLUE LOCKER COMMERCIAL DIVING

Blue Locker Commercial Diving utilizes the OSHA required three-man dive team to inspect and clean potable water tanks. They also provide underwater non-destructive technology for inspection and diagnostics. With their state-of-the-art equipment and highly skilled dive team, all who have graduated from an accredited military installation or diving academy, can detect and define the extent of corrosion and superficial and structural damage in inaccessible areas.

City of Queen Creek

Ms. Myrna Quihuis
Procurement Officer
Myrna.quihuis@queencreek.org
(480) 358-3000
22350 Ellsworth Road
Queen Creek, Arizona 85142

Cleaned and Inspected Multiple Potable Water Tanks.

Queen Creek owns over 20 water tanks. Blue Locker completed 100% of the project with no subcontractors. Blue Locker has worked for Queen Creek for the last eight years. They received one-year contracts eight years in a row for cleaning and inspecting tanks at the direction of the owner. The most recent award was in November 2020. Award was based on merit. All work was scheduled by the owner and work was completed on time and within contracted amount. No change orders were requested. Value of Contracts with Queen Creek was \$50,000+.

Douglas County Water

Mr. Ron Leeper
Specialist
rleeper@douglasnv.gov
(775) 782-9989
P.O. Box 218
Minden, Nevada 89423

Cleaned and Inspected Multiple Potable Water Tanks.

Douglas County has 16 steel tanks. Blue Locker completed 100% of the project with no subcontractors. Blue Locker has worked for Douglas County Water for the last nine years. Three-year contracts have been renewed three times for cleaning and inspecting their tanks at the direction of the owner. Award was based on merit. All work was scheduled by the owner and work was completed on time and within contracted amount. No change orders were requested. Value of Contracts with Douglas County was \$40,000+.

Marlette Water

Mr. Jerry Walker
Water Systems Manager
jerrywalker@admin.nv.gov
(775) 690-8214
750 E. King Street
Carson City, Nevada 89701

Cleaned and Inspected Multiple Potable Water Tanks.

Blue Locker completed 100% of the project with no subcontractors. Blue Locker has worked for Marlette Water for five years, recently awarded a new five-year contract renewal to clean and inspect their tanks at the direction of the owner. Award was based on merit. All work was scheduled by the owner and work was completed on time and within contracted amount. No change orders were requested. Value of Contracts with Marlette Water was \$30,000+.

MISTRAS GROUP

Mistras Group provides API 653 inspection services for Above Ground Storage Tank's throughout the United States. The Mistras Group performs Silverwing MFL 3D floor mapping scanning on tank floors.

SGM

Ms. Theresa Weidmann, P.E.
Senior Engineer, Glenwood Springs
theresaw@sgm-inc.com
(970) 384-9067
118 W. Sixth Street, Suite 200
Glenwood Springs, Colorado 81601

5,000,000 Gallon Orchard Mesa Tank in Grand Junction, Colorado

Mistras Group performed MFL floor scanning for the 5,000,000 Gallon Orchard Mesa Tank in Grand Junction, Colorado. The project was estimated at \$17,942.96 for MFL floor scanning and came in slightly under budget.

Tank Industry Consultants

Gregory R. “Chip” Stein, P.E.

stein@tankindustry.com

(317) 271-3100

7740 W. New York Street

Indianapolis, Indiana 46214

1,000,000 Gallon Tank S-1C-24 Ground Storage Tank in Lake Havasu City, Arizona. TIC evaluated this tank in February 2017. It was noted that the bottom plate should be surveyed to determine if the settlement requires additional repairs. TIC hired Mistras Group to perform MFL floor scanning of this tank for further review. The project came in at budget at \$11,110.

D. PROJECT UNDERSTANDING

PROFESSIONAL TANK ENGINEERING AND INSPECTION

We believe the following information is important for you to know to assess TIC’s proven approach to water storage tank management. Over 2,750 clients have allowed us to participate in **their water storage tank projects**.

OVERVIEW OF INSPECTION STANDARDS AND GUIDELINES

INSPECTION STANDARDS AND GUIDELINES

The AWWA D101 standard for water tank inspections was last revised in 1953. The standard was reaffirmed without revision in 1986 and withdrawn by AWWA in December of 1998. In 2013, the AWWA Standards Council authorized the formation of a Revision Task Force to re-write D101. **Chip Stein, TIC’s Managing Principal, chairs the D101 Committee**, which is in the process of revising the standard.

In 1998, AWWA published the **Steel Water-Storage Tanks Manual M42**. Mr. Stein authored a chapter in the manual. The manual was designed to fill in some of the gaps left with the withdrawal of D101 and to build on its content. Mr. Stein currently chairs the Revision Task Force that is updating the Manual.

In 2010, McGraw-Hill, in conjunction with AWWA, published the **Steel Water Storage Tanks handbook**. Steve Meier, former TIC Managing Principal, was the technical editor of this far-reaching commentary on steel water tank design, construction, maintenance, and repair. Mr. Stein authored a chapter for the handbook, “Maintenance, Inspection, and Repair”.

With the number of tanks we evaluate each year, and the knowledge gained from countless hours our Managing Principal, Chief Engineer, Engineering Manager, and support staff volunteer each year on various committees to provide safe drinking water to communities, it is easy to understand why **no other tank engineering or inspection firm can offer you better insight into current — and past — water tank inspections standards and guidelines**.

The professional engineering and inspection services associated with the evaluations for the Palmdale Water District water storage tanks will require a combination of practical experience and extensive involvement in standards-making organizations and training programs. The TIC team, including Blue

Locker Commercial Diving and Mistras Group, will provide that unique combination of expertise, which will result in evaluations that are specially designed to uncover problems and to look for methods to reduce rehabilitation costs. TIC has provided these specialized services to **over 17,500 water tanks!** The information gathered during each evaluation, gives us the background details required to prepare the highest quality detailed technical specifications possible, when Palmdale Water District is ready to begin rehabilitation. The following pages will describe the proposed scope of work for the Palmdale Water District Reservoir Inspection and Cleaning.

TANK EVALUATION

Our evaluations consist of a careful study of the tank's interior, exposed exterior surfaces, and accessories. The evaluation includes the on-site field evaluation of the roof and other structural members of the tank, a coatings evaluation (if coatings are present), and a safety and sanitary evaluation. The evaluations will locate and identify sanitary deficiencies and compliance with present American Water Works Association (AWWA), American Concrete Institute (ACI), OSHA Standards, and other applicable California standards. The tank surfaces of the concrete tank will be closely reviewed for spalling concrete, exposed reinforcing wire, evidence of leakage, and other items requiring rehabilitation. In addition, TIC will locate large surface cracks in the concrete tank container and may use a hammer to "sound" the concrete (at accessible locations) in an attempt to locate voids or hollow areas in the concrete. All necessary surfaces on the reservoirs shall be accessed by rigging and rappelling the interior and exterior as required by the condition and design of the tank.

The TIC team will assess the condition of the interior and exterior surfaces of all tanks and evaluate the effect of corrosion. The evaluation will include an analysis of the roof, floor, nozzles, vents, and shell for the intended design conditions and determine the reservoir's suitability for service, based on the existing roof, floor and shell plate thickness and material. The analysis shall take into consideration all anticipated loading conditions, including pressure due to fluid static head, internal and external pressures, wind loads, seismic loads, roof live loads, nozzle loads, settlement and attachment/accessories loads. All assumptions used in the analysis shall be provided to the District in detail for review and approval.

The TIC Team will perform dive evaluations for the tank interiors of 15 welded steel tanks and one bolted tank. The interior dive evaluation will be performed by Blue Locker Commercial Diving with one of TIC's Team Leader NACE Level 3 personnel narrating the dive video on site. The interiors of 1 bolted tank, 3 welded tanks, and one concrete tank will all be evaluated drained by TIC. Mistras Group will provide settlement surveys on the three welded tanks and will provide an API 653 inspector Team Leader on site. For those interior tank evaluations, TIC and Mistras Group will co-Team Lead as TIC has a NACE 3 inspector and Mistras has an API 653 inspector. TIC will provide the Assistant Team Leader with either NACE 2 or 3 Level Certification. The exteriors of all tanks will be evaluated by TIC.

All work performed by field personnel shall be reviewed by a State of California Licensed Professional Engineer (PE) on TIC's full-time staff with a minimum of five years' experience with the design, construction, and maintenance of water storage tanks. The PE is responsible for checking all field reports for completeness, California seismic requirements, accuracy, cost estimating, and conformance with the RFP. The PE will be present at a minimum of one tank inspection during each round of tank inspections to observe the inspection work being performed. The PE shall verify that the Team Leader and Assistant Team Leaders meet the requirements of the RFP.

DIVE EVALUATION

The potable water diving process and procedures that will be used will meet or exceed AWWA, OSHA, and CDA standards (29 CFR 1910 subpart T). Prior to entering the water, divers are fully encapsulated in a Viking vulcanized rubber dry suit. The dry suit mates to a Superlite 17 or 27 hard hat or band mask.

Before divers enter the storage tank all dive gear and equipment is sprayed with 200ppm chlorine solution. The chlorine solution is utilized on every piece of equipment that enters the water. This includes the diver and all of his gear. A pressured bottle is used until all items are 100% saturated (AWWA Standard C652).

The potable dive team includes a Dive Supervisor who oversees diver's air supply and work progress, and a Dive Tender who is a standby diver for the diver who is working. Standby dive tender and dive gear can immediately be utilized, if necessary. The standby tender is also responsible for sending the diver his tools and equipment. Diver I or main diver works in the tank while he is being monitored by the Diving Supervisor. Every team member will take turns doing each task. Video documentation will be provided using a real time, high resolution submersible video recorder. The diver's progress is continuously monitored throughout the dive. Divers use two-way radios from diver to dive supervisor to ensure the diver's safety.

SEDIMENT REMOVAL

For the dive evaluations, Blue Locker will clean the tank interior utilizing a specially designed vacuum system. Divers enter the tank and work slowly to prevent sediment on tank walls and tank bottom from stirring up. Divers will use an underwater vacuum that removes the sediment from the floor. Underwater suction is achieved using a 4" pump connected to a hose. The suction hose is attached to a vacuum cleaning device equipped with brushes secured to the bottom to remove sediment. The vacuums are 24" and 32" wide and have ceramic edges and combers to prevent damage from occurring during the cleaning process. Durable rubber wheels are mounted on the bottom for easier mobility. Blue Locker also has available several cleaning tips and brushes to use to handle various types of sediment in different tanks. Again, all equipment will be disinfected in accordance with the most recent version of AWWA C652 prior to entering the tank. Following the tank cleaning, additional photographs or video will be provided to document the cleaned surfaces. Water discharged from a reservoir during cleaning operations that could reach a blueline stream or waterway will be de-chlorinated using sodium-meta-bisulphate or an equivalent approved by the District. There will be no additional charge to the District for this service.

TIC will perform washouts for the five drained evaluations. Once the tank is drained, TIC will clean the lower surfaces of the interior of the tanks. TIC personnel pump the remaining water out of the tank and will record evidence of excessive sedimentation prior to removal. After we remove the excess water, all remaining sediment is shoveled out of the tank. A high-pressure pump is used to wash down the lower portion of the tank shell, as high as can be reached, where the sediment has been. All floor welds and the bottom four feet of all shell welds shall be cleaned. All scale, etc. shall be removed to enable a thorough inspection. After the tank washout and interior field evaluation, TIC will disinfect the tank in accordance with the latest revision of AWWA Standard C652 prior to the tank being returned to service. The District will be responsible for filling each tank, collecting bacteriological samples, and having the samples analyzed.

Regardless of the type of sediment removal, the TIC team will test and dispose of the debris and sediment. We will leave captured material in containers at the tank site until each tank in the group of tanks being cleaned and evaluated has been completed and then we will remove the material from all of

those sites. Or, alternatively, we could store the material temporarily at a District yard and then collect and dispose of them all at one time. The removal pricing is based on all material removed from the tanks being classified as non-hazardous or non-regulated substances allowing disposal at the local landfill. Any classification of the material to the contrary will incur additional charges to be determined when the nature of the material is known.

FIELD EVALUATION

During the field evaluation, TIC technicians access the tank surfaces by rigging and rappelling down the interior and exterior, as applicable, to identify sanitary, safety, or structural deficiencies. While rappelling, the technicians look for tank irregularities to be analyzed by our engineering staff. Ultrasonic thickness measurements of the steel will be taken so that a structural engineer can analyze any deviations from the original thickness. The exposed portion of the foundation will be visually evaluated to locate cracks, spalling, erosion, or other types of deterioration. Any evidence of anchor bolt corrosion, distortion, or loose/missing anchor bolt nuts will be recorded and evaluated. The reservoir site will also be inspected, evaluated and recorded including, at a minimum, security, site drainage, electrical service, and proximity to buildings. Prior to each evaluation, the TIC team will discuss the repair history with the District staff to determine if there have been any signs of leakage since the last inspection.

TIC will inspect, record, and evaluate the reservoir roof and shell of each tank for distortion, bulging, blistering, leakage, pitting, corrosion of outside stiffeners and wind girders, cracking of attachment welds, etc. Reservoir ladders, fall protection systems, walkways, platforms, and/or stairways will be inspected, recorded and evaluated for corroded, bent, broken, or missing structural parts; loose or missing bolting; worn stair treads and/or rungs; safety latches are in place and are operational.

TIC will also inspect, record, and evaluate reservoir nozzles and penetrations for distortion, bulging, blistering, leakage, corrosion, and pitting as well as grounding connections, as applicable, to ensure good electrical contact and condition of grounding bolts, bands, straps, and rods. Antenna cables, equipment, mounting brackets, penetrations, etc., of the various cellular phone companies will also be inspected, recorded, and evaluated. TIC often performs antenna mapping services as well as antenna design reviews for new or modified antenna installations, therefore, our technicians are well-versed in working near cellular antennas and other communication antennas.

Our evaluation is specially designed to uncover problems and to look for methods to reduce rehabilitation costs. At a minimum, the following items are addressed:

- Measurements of the exterior tank members will be taken
- Measurements of the exterior tank accessories will be taken
- Measurements of exterior metal loss will be taken
- Coating samples will be taken to determine lead, cadmium, chromium, and zinc content
- Coating adhesion measurements will be taken
- Coating thickness measurements will be taken
- Ultrasonic steel thickness measurements will be taken
- Observed sanitary deficiencies will be noted
- Observed safety deficiencies will be noted
- Observed structural deficiencies due to deterioration will be noted
- Observed irregularities or unusual circumstances will be noted
- Photographs will be taken to document the condition of the tank

Please note that the TIC team will not make any coating repairs. We would be happy to provide a proposal to prepare detailed technical specifications for repairs and/or recoating for each tank, as necessary.

DETAILED ADDITIONAL OUT-OF-SERVICE INTERIOR INSPECTION ITEMS

- Baffles and attachments will be inspected for deterioration, damage, and/or proper installation.
- The reservoir roof will be inspected and evaluated for mechanical integrity and leaks.
- TIC will obtain ultrasonic thickness measurements, for steel tanks, as follows at a minimum:
 - A minimum of four shell plate thickness readings shall be obtained at each shell plate for steel tanks
 - Thickness readings shall be made about the internal circumference of each accessible nozzle. Nozzles having too small an internal diameter to permit access shall be tested from the outside of the tank.
 - A band of ultrasonic thickness measurements shall be taken around the tank circumference, 2-inches above the bottom to shell weld, spacing the measurements four per shell plate, at a minimum. Note additional measurements shall be obtained in all areas of apparent corrosion, or as the inspector determines necessary to determine tank's overall suitability for service.
 - Tank regions, including regions of the bottom, shell, roof or nozzles, that exhibit visually detectable metal loss shall require multiple ultrasonic thickness measurements to determine the thinnest area within the region and to define the dimensions of the affected region. Localized thinning shall be evaluated per API 653. Mistras Group will assist TIC with this evaluation for the three welded tanks, if necessary.
 - A representative number of areas on the floor shall be scanned ultrasonically to attempt to determine if soil side corrosion is occurring.
 - Tank ultrasonic thickness measurements shall also be recorded and located on a drawing of each tank. For badly pitted areas, pit gauges shall be used to determine the depths of the deepest pits within each steel wall and floor plate. Location of pit filler shall be identified and located on the drawing of the tank. Localized and random pitting shall be evaluated per API 653. Mistras Group will assist TIC with this evaluation for the three welded tanks, if necessary.
- All reservoir roof components, including roof supports, roof trusses, vents, and rafters, will be inspected, recorded, and evaluated for mechanical integrity, corrosion, leaks, evidence of buckling, distortion, and/or deterioration. Thickness measurements of apparently badly corroded areas shall be obtained using ultrasonic thickness equipment. A minimum of four measurements per roof plate (exterior side) shall be obtained. Additional measurements shall be obtained to the extent necessary to determine the tank's overall suitability for service.
- TIC will inspect, record, and evaluate all tracks, rollers, ladders, rolling ladders for mechanical integrity, corrosion/deterioration, leaks, evidence of buckling, distortion, and/or deterioration. Internal ladders or "painters rings" will not be used for inspection purposes.
- Mistras Group will perform a settlement survey on the three welded tanks per API 653.
- TIC will obtain measurements and identify components, configuration, and condition of the tank overflow system. TIC understands a hands-on inspection of the reservoir overflow system is required.

COATING EVALUATION

Coating samples, as applicable, will be taken during the field evaluation and tested to determine their lead, chromium, cadmium, and zinc content. The overall coating condition with description of chalking, peeling, coating faults, along with dry film thickness and overall coating adhesion conditions to the surface will be inspected, recorded, and evaluated. The anticipated remaining useful life of the coating system will be evaluated and reported in the evaluation report. The overall configuration and coatings history of the reservoir will be summarized and described based on site observations and available record information.

STRUCTURAL REVIEW

As part of its evaluation, TIC will identify any observed structural deficiencies or damage that may have occurred since the tank was erected. These deficiencies include deviations of existing tank conditions from the tank's original construction. Any deficiencies will be analyzed for their effect on the structural integrity of the tank.

SEISMIC REVIEW

TIC will confirm the seismic design of the reservoir that it meets the current seismic rating of the location of the reservoir. The findings will be included in the engineering report.

CERTIFIED ENGINEERING REPORT

An engineering report concerning the condition of the tank, certified by a California Licensed Professional Engineer on TIC's full-time staff, will be issued for each tank. A drawing of each reservoir will be provided that accurately illustrates the identifying points which have been marked on the reservoir. Inspection findings shall be reported relative to their location in/on the reservoir, with sufficient detail to permit relocation and evaluation of the reported condition(s). Additional notes, sketches, or documents appended to the report, as necessary, will be provided to describe the inspection findings more fully. The video from the underwater camera during the dive evaluations will be narrated on site by a NACE Level 2 or 3 Coating Inspector, a member of TIC's full-time staff.

The certified engineering reports will include the following sections.

OBSERVATIONS. The Observations section provides dimensions of the tank and accessories as well as a narrative describing the condition of the site and each part of the tank. Sanitary, safety, security, and structural deficiencies are described, as well as the coating condition.

RECOMMENDATIONS. The Recommendations section includes those repairs and modifications required to bring the tank into compliance with current AWWA, OSHA, California Department of Drinking Water, DHS, FAA and sanitary standards and regulations. Coating recommendations are made along with the anticipated timing of necessary coating repairs. When practical, alternative methods of repair, modification, and painting are provided, and advantages and disadvantages of each alternative are given. Comparative analyses of coatings and linings are continuously performed by TIC as new products and technologies are developed for the coatings and lead-paint abatement industry. Items will be identified to be detailed in the preparation of contract documents for repairs and rehabilitation and recommendations and alternatives for repair methods and techniques will be provided. Advantages and disadvantages of each alternative will be given.

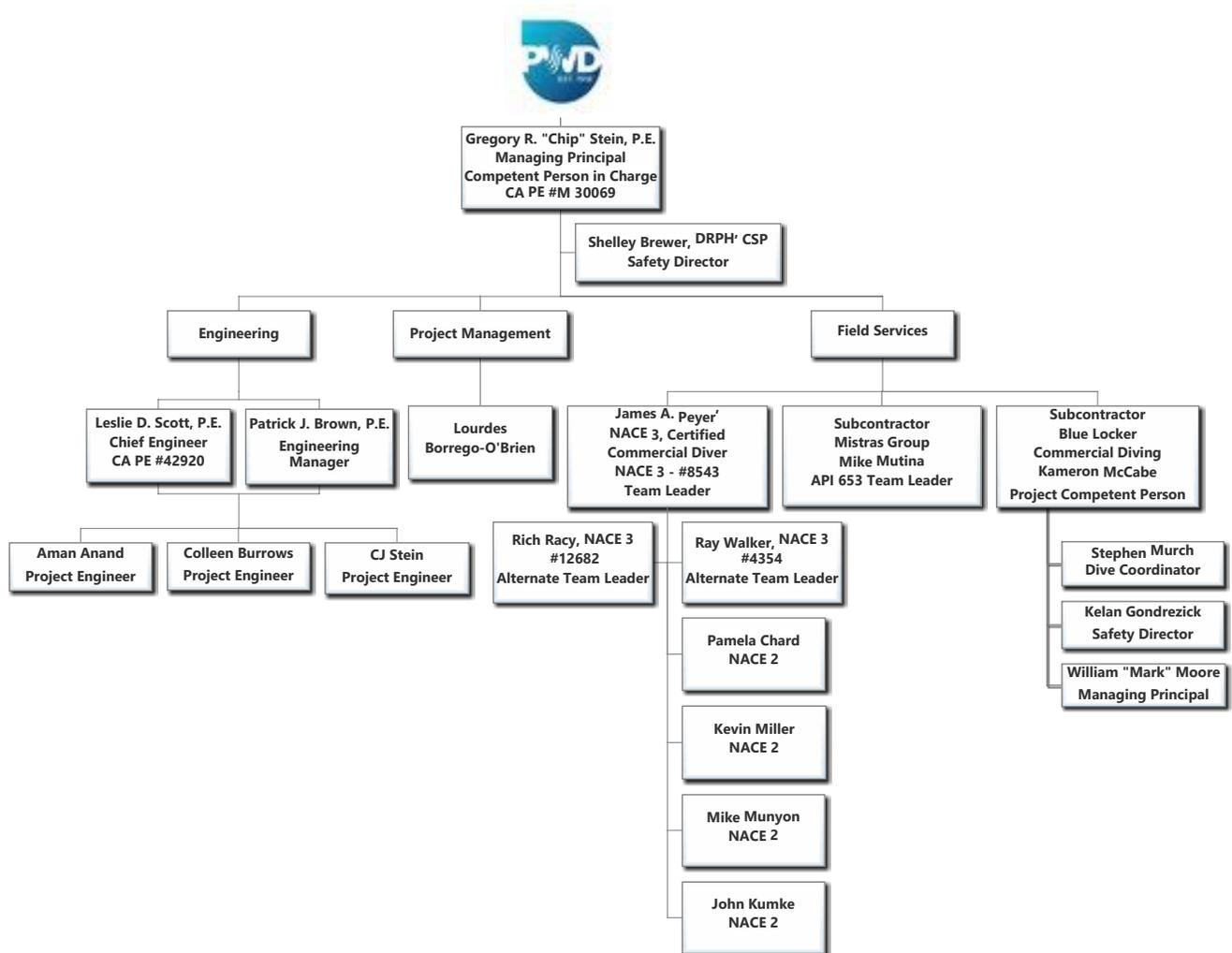
ECONOMIC FACTORS. The Economic Factors section provides budget estimates for all repairs, modifications, and painting options outlined in the Recommendations. The replacement cost of the tank is also provided for cost comparison.

COLOR PHOTOGRAPHS. Each report contains color photographs of the tank. These are individually mounted, with captions explaining what is shown in the photo. The photographs serve as additional documentation of the tank’s condition. TIC will also provide narrated copies of the video of the dive evaluation of the tank interior.

DELIVERABLES. Three hard copies and one electronic copy of the Draft Engineering Report for each reservoir will be provided for review and comment by the District, including the observations and recommendations for rehabilitation and maintenance as well as budgetary cost estimates for each reservoir. Upon final comments from the District, TIC will provide three hard copies and one electronic copy of the Final Engineering Report for each reservoir that addresses the District’s comments from the draft reports. Reports will be certified by a State of California Licensed Professional Engineer (PE) on TIC’s full-time staff familiar with the design, construction, and maintenance of water storage reservoirs.

E. PROJECT STAFFING AND AVAILABILITY

ORGANIZATIONAL CHART



TANK INDUSTRY CONSULTANTS

The following resumes illustrate how the TIC Team proposes to staff the Palmdale Water District Project. We understand that any change of key personnel must be approved by Palmdale Water District.

GREGORY R. "CHIP" STEIN, P.E., PRINCIPAL-IN-CHARGE – INDIANAPOLIS, INDIANA

YEARS OF TANK EXPERIENCE: 32

SUMMARY OF TANK EXPERTISE

Chip Stein joined Tank Industry Consultants in 1988. Since then, Chip has been involved in more than 10,000 tank engineering projects ranging from new tank design and construction to tank evaluations, tank rehabilitation projects, and tank demolition. As Managing Principal, Chip is responsible for scheduling and overseeing work conducted by TIC's staff of civil, mechanical, chemical, and structural engineers. He reviews engineering designs, specifications, reports, and client invoicing, and is responsible for contract administration duties performed for TIC's clients. He also oversees the field and sales departments.

Chip Chairs the AWWA Standards Committee on Steel and Composite Water Storage Tanks, the D101 Standard Subcommittee for Inspection of Water Tanks and Related Facilities Revision Task Force, and the AWWA M42 Manual Revision Task Force. He is a member of the AWWA D102 Committee on tank coatings and the D104 and D106 committees on cathodic protection.

Chip will be the Project Principal in Charge for the Palmdale Water District projects. He will assign reports, provide technical support, and engineering review of the reports, as well as certification of reports.

PROFESSIONAL LICENSES AND CERTIFICATIONS: Registered Professional Engineer in 42 states and the District of Columbia, California Licensed Professional Engineer # M 30069.

INDUSTRY LEADERSHIP

- Chair, AWWA Standards Committee on Steel and Composite Water Storage Tanks
- Chair, AWWA Standard for Inspection of Water Tanks and Related Facilities (D101) Standards Committee Revision Task Force
- Chair, AWWA M42 Manual Revision Task Force
- Member, AWWA D102 Coating Steel Water-Storage Tanks Standard Committee
- Member, AWWA D104 Automatically Controlled, Impressed-Current Cathodic Protection for the Interior Submerged Surfaces of Steel Water Storage Tanks Standard Committee
- Member, AWWA D106 Sacrificial Anode Cathodic Protection Systems for the Interior Submerged Surfaces of Steel Water Tanks Standard Committees
- Chapter author, Steel Water Storage Tanks handbook
- Board of Directors, Steel Tank Institute/Steel Plate Fabricators Association
- Immediate Past Chair, Steel Tank Institute/Steel Plate Fabricators Association Field-Erected Steel Tank Committee
- Principal Member, NFPA 22: Standard for Water Tanks for Private Fire Protection
- Principal Member, NFPA 25: Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems
- Tutorial and Conference Chair, The Society for Protective Coatings (SSPC)

EDUCATION

- Bachelor of Science, Mechanical Engineering, Rose-Hulman Institute of Technology - Area of Concentration: Structural & Material Analysis
- Master of Business Administration, Indiana University - Area of Concentration: Finance

PROJECTS

1,000,000 Gallon Tank S-1C-24 Ground Storage Tank in Lake Havasu City, Arizona - Atkins. TIC evaluated Tank S-1C-24 for Atkins on February 21, 2017. The purpose of this evaluation was to determine the condition of the tank interior, exterior, and accessories. TIC recommended that the bottom plate be surveyed to determine if the settlement required additional repairs. Chip Stein reviewed and certified the engineering evaluation report.

10,000,000 Gallon Village Greet #7 Steel Ground Storage Tank in Aston, Pennsylvania – Chester Water Authority. TIC evaluated the 232'-6" diameter x 32'-8" high Steel Ground Storage Tank on October 29, 2019 by ROV. The interior above the water level was evaluated by personnel within a raft. TIC previously evaluated the tank in 2000 and 2014. Chip Stein reviewed and certified the engineering evaluation report.

1,500,000 Gallon Greenridge Reservoir #1 Steel Ground Storage Tank in Los Gatos, California – San Jose Water Company. TIC performed a drained evaluation on this tank in February 2019 to determine the condition of the tank interior, exterior, exposed foundation, and accessories. Chip Stein reviewed and certified the engineering evaluation report.

Active Projects	Phase	Percentage of Time Allocated
Administration of Various TIC Projects	Final	25
Various Ongoing Projects	Continual	15
Headquarters Management	Continual	5
Principal-in-Charge for Palmdale Projects	Continual	10

LESLIE D. SCOTT, P.E., CHIEF ENGINEER – ATASCADERO, CALIFORNIA

YEARS OF TANK EXPERIENCE: 39

SUMMARY OF TANK EXPERTISE

Leslie Scott is a nationally recognized expert in the field-erected tanks and shop-fabricated storage tanks industries. Leslie's work experience has included a wide variety of assignments encompassing numerous aspects of the field-erected and shop-built storage tank business including engineering, detailing, fabrication and construction processes, coatings, project management, inspection, and estimating functions. Leslie's experience includes projects conforming to AWWA, API, ASME, NFPA, FM, UL, STI/SPFA, and fire code standards.

Leslie has been actively involved in numerous tank-related standards development committees/subcommittees of the American Water Works Association (AWWA) for over 30 years.

Leslie will be present at a minimum of one tank inspection during each mobilization to observe the inspection work being performed. He will also provide seismic review, technical support, and engineering review of the reports, as well as certification of reports.

PROFESSIONAL LICENSE: California Licensed Professional Engineer #42920, also Registered Professional Engineer in Nevada, Oregon, and Washington (state)

INDUSTRY LEADERSHIP

- Member, AWWA Standards Committee on Steel and Composite Water Storage Tanks
- Chair, AWWA New Standard Subcommittee - Standard for Carbon Steel Flat-Bottom Welded Steel Tanks for Water Storage
- Vice-Chair, AWWA Standard Subcommittee – Standard for General Requirements for Water Storage Tanks
- Member, AWWA D100 Subcommittee - Standard for Welded Steel Tanks for Water Storage
- Member, AWWA D102 Subcommittee - Standard for Coating Steel Water Storage Tanks
- Member, AWWA D103 Subcommittee - Standard for Factory-Coated Bolted Carbon Steel Tanks for Water Storage
- Member, AWWA Standard Subcommittee – Standard for Carbon Steel Elevated Tanks for Water Storage
- Member, AWWA Standard Subcommittee – Standard for Stainless Steel Bolted Tanks for Water Storage
- Member, AWWA D104 Subcommittee – Standard for Automatically Controlled, Impressed-Current Cathodic Protection for the Interior Submerged Surfaces of Steel Water Storage Tanks Standard Committee
- Member, AWWA D106 Subcommittee – Standard for Sacrificial Anode Cathodic Protection Systems for the Interior Submerged Surfaces of Steel Water Tanks Standard Committees
- Member, AWWA M42 Subcommittee – Steel Water Storage Tank Manual
- Member, AWWA STAM Subcommittee – Steel Tank Asset Management Guide

EDUCATION

- Bachelor of Science, Architectural Engineering, California Polytechnic State University at San Luis Obispo

PROJECTS

10,000,000 Gallon Village Green #7 Steel Ground Storage Tank in Aston, Pennsylvania – Chester Water Authority. TIC evaluated the 232'-6" diameter x 32'-8" high Steel Ground Storage Tank on October 29, 2019 by ROV. The interior above the water level was evaluated by personnel within a raft. TIC previously evaluated the tank in 2000 and 2014. Leslie Scott provided technical support for this project.

2,500,000 Gallon Two-Chamber Partially Buried Concrete Tank 1980, Rota, Spain – Naval Air Station. TIC performed a dry evaluation of the tank in May 2018. Leslie Scott developed a guide to determine seismic loads for buried tanks and developed a seismic loading model per ACI 350.3.

1,250,000 Gallon Partially Buried Concrete Chicago Suburban A Ground Storage Tank, Mount Prospect, Illinois – Illinois American Water. TIC performed an evaluation on the partially buried Chicago Suburban A Tank in August 2017. The exterior of the tank appeared to be in poor condition with heavy cracking, spalling, efflorescence, and exposed aggregate. Leslie provided technical support for the repair recommendations as well as cost estimates for the client.

Active Projects	Phase	Percentage of Time Allocated
Antenna Design and Structural Review Projects	Final	8
Various Ongoing Projects	Continual	35
CA PE for on-site evaluations/review reports	Continual	10

PATRICK J. BROWN, P.E., ENGINEERING MANAGER – INDIANAPOLIS, INDIANA

YEARS OF TANK EXPERIENCE: 22

SUMMARY OF TANK EXPERTISE

Patrick Brown has a wealth of experience in storage tank design and engineering, having successfully completed more than 3,000 tank projects. These projects typically include surface preparation, coating methods, procedures, and types of coatings; sanitary upgrades; safety upgrades; structural repairs; and lead abatement with containment and environmental controls. Instead of reiterating already published AWWA standards, specifications prepared by Patrick are project-specific, emphasizing critical or frequently overlooked aspects of the tank and clarifying those requirements in the standards that are necessary to obtain a high-quality and long-lasting product.

Patrick will provide technical support, cost estimating, and engineering review.

PROFESSIONAL LICENSE: Indiana and Virginia Registered Professional Engineer

INDUSTRY LEADERSHIP

- Member, AWWA Welded Carbon Steel Elevated Water Storage Tanks Subcommittee
- Chair, AWWA Accessories Task Group
- Member, AWWA D107 – Composite Elevated Tanks for Water Storage Committee
- Member, Steel Tank Asset Management Guide Task Group
- Alternate Representative, AWWA Standard D100 Welded Carbon Steel Tanks for Water Storage
- Alternate Representative, NFPA 22: Standard for Water Tanks for Private Fire Protection
- Alternate Representative, NFPA 25: Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems

EDUCATION

- Bachelor of Science, Chemical Engineering, Rose-Hulman Institute of Technology

PROJECTS

1,200,000 Gallon Kapex Steel Ground Storage Tank, North Las Vegas, Nevada – City of North Las Vegas. TIC performed a cleaning and dive evaluation on this tank in June 2017. The purpose of this cleaning and evaluation was to determine the condition of the tank interior, exterior, exposed foundation, and accessories. Patrick provided technical review for this evaluation.

10,000,000 Gallon Village Green #7 Steel Ground Storage Tank in Aston, Pennsylvania – Chester Water Authority. TIC evaluated the 232'-6" diameter x 32'-8" high Steel Ground Storage Tank on October 29, 2019 by ROV. The interior above the water level was evaluated by personnel within a raft. TIC previously evaluated the tank in 2000 and 2014. Patrick assisted with the evaluation report preparation.

Fourteen Tanks at Naval Station Guantanamo Bay, Cuba – US Navy. TIC evaluated seven welded steel ground storage tanks, two riveted steel ground storage tanks, two bolted steel ground storage tanks, one elevated bolted steel tank, one partially buried concrete tank, and one concrete ground storage tank. Ten of the tanks were drained for a dry evaluation. Patrick provided technical support during the preparation of the comprehensive evaluation report.

Active Projects	Phase	Percentage of Time Allocated
2020 Tank Maintenance/Rehab Project	Final	10
Various additional specifications	90% Design	20
Various ongoing projects	Ongoing/Final	15
Technical Assistance for Palmdale Projects	Continual	6

SHELLEY BREWER, DRPH, CSP, SAFETY DIRECTOR – INDIANAPOLIS, INDIANA

YEARS OF EXPERIENCE: 25

SUMMARY OF EXPERTISE

Shelley has over twenty-five years of experience working in both the private and public sectors maintaining regulatory compliance. Shelley has worked with both domestic and international governments initiating and implementing policies for large and small projects. At TIC, Shelley is responsible for developing, communicating, and monitoring Tank Industry Consultants' extensive Health and Safety program. She conducts in-house and field safety training and supervises medical surveillance plans in accordance with all applicable OSHA regulations.

Shelley will prepare any necessary safety plans for the drained evaluations and exterior evaluations and review all subcontract safety plans for the Palmdale Water District Projects.

CERTIFICATIONS

- Certified Safety Professional, Comprehensive Practice (#14334)
- Registered Environmental Professional
- Professional Safety Source and Field Safety Representative, Arkansas, Pennsylvania and Texas

AWARDS

- Co-Authored CB&I's NSC Green Cross for Safety award (2015) application
- First trainee appointed to NIOSH Doctoral Injury Prevention Research Program at University of Texas School of Public Health.
- Awarded NIOSH Pilot Project Grant to conduct research project on the effect of organizational policies and practices on employee injury rates.
- Injury Prevention and Control Programs Prevention Review, Funded by the Workers Safety Insurance Board (WSIB) of Ontario

PROFESSIONAL MEMBERSHIPS AND AFFILIATIONS

- Contract expert for Boston Consulting Group (BCG)
- Adjunct Faculty University of Texas
- Construction Industry Institute Research Team Member (#324)
- Academy of Certified Environmental Managers

- Member of Indiana State University Accreditation Committee
- Member American Society of Safety Engineers (ASSE)

EDUCATION

- Bachelor of Science, Indiana State University, Safety Management
- Master of Science, University of Houston Clear Lake, Environment Management
- Doctor of Public Health, University of Texas, School of Public Health, Occupational Injury and Illness Prevention Policy and Practice

PROJECTS

10,000,000 Gallon Village Green #9 Steel Ground Storage Tank in Chester, Pennsylvania – Chester Water Authority. TIC evaluated the 10,000,000 Gallon Steel Ground Storage Tank in April 2019. The evaluation included the interior surfaces of the concrete roof to determine the condition. The interior roof evaluation was performed utilizing scaffolding. Shelley was on site to perform a review of the scaffolding erection done by others.

Numerous Tank Inspections throughout the United States. Shelley performs the site safety inspections at TIC jobsites. Sites are evaluated for compliance with OSHA, TIC, and customer policies.

American Water Military, Fort Polk, Louisiana. Shelley prepares Health and Safety Protocols for all projects at the Fort Polk base in Louisiana. TIC has completed multiple drained evaluations for tanks at the Fort Polk site over the past few years.

Active Projects	Phase	Percentage of Time Allocated
Safety Review of Field Activities	Ongoing	30
Site Safety Activities	Ongoing	25
Safety Review for Palmdale Projects	Continual	10

LOURDES BORREGO-O'BRIEN, PROJECT MANAGER – EL PASO, TEXAS

YEARS TANK EXPERIENCE: 9

SUMMARY OF TANK EXPERTISE

As manager of TIC's Western Region, Lourdes Borrego-O'Brien is responsible for managing tank rehabilitation and new tank projects for area clients. She oversees, coordinates, and manages all phases of tank maintenance projects to verify that the projects are completed in a timely, quality manner and meet each owner's requirements. Lourdes' past business experience includes extensive development and communication of programs and strong organizational skills geared toward building and fostering business and community relationships.

Lourdes will be the Project Manager for the Palmdale Water District Projects.

INDUSTRY ACTIVITIES

- AWWA

EDUCATION

- DeVry Institute of Technology, Phoenix, Arizona

PROJECTS

1,000,000 Gallon Tank S-1C-24 Ground Storage Tank in Lake Havasu City, Arizona - Atkins. TIC evaluated Tank S-1C-24 for Atkins on February 21, 2017. The purpose of this evaluation was to determine the condition of the tank interior, exterior, and accessories. TIC recommended that the bottom plate be surveyed to determine if the settlement required additional repairs. Lourdes was the project manager for this project and served as the client liaison.

1,500,000 Gallon Greenridge Reservoir #1 Steel Ground Storage Tank in Los Gatos, California – San Jose Water Company. TIC performed a drained evaluation on this tank in February 2019 to determine the condition of the tank interior, exterior, exposed foundation, and accessories. Lourdes was the project manager for this project and served as the client liaison.

1,200,000 Gallon Kapex Steel Ground Storage Tank, North Las Vegas, Nevada – City of North Las Vegas. TIC performed a cleaning and dive evaluation on this tank in June 2017. The purpose of this cleaning and evaluation was to determine the condition of the tank interior, exterior, exposed foundation, and accessories. Lourdes was the project manager for this project and served as the client liaison.

Active Projects	Phase	Percentage of Time Allocated
Project Management	Ongoing	25
Business Development	Ongoing	30
Project Management for Palmdale District	Ongoing	15

JAMES A. PEYER, NACE 3, PROJECT COORDINATOR/NACE 3 TEAM LEADER – INDIANAPOLIS, INDIANA

YEARS OF TANK EXPERIENCE: 46

SUMMARY OF TANK EXPERTISE

Jim Peyer has been an essential member of TIC's field department since 1989. As a project coordinator, Jim coordinates, supervises, and performs all types of specialized tank evaluations. He is a member of TIC's Certified Commercial Dive Team and performs underwater evaluations, including dive evaluations for the U.S. Navy at naval facilities around the world. Jim has also performed certified inspections of coatings application at a number of U.S. naval bases. Jim has more than 40 years' experience in welding and the fabrication and construction of steel products. He is trained in welding processes and is experienced in weld quality control.

Jim will be the NACE 3 Team Leader for the Palmdale Water District Projects. When API 653 inspection activities take place, Jim will co-Team Lead with Mike Mutina of Mistras Group.

CERTIFICATIONS AND TRAINING

- NACE Certified Coating Inspector #8543
- Certified Commercial Diver
- Rope Rescue Operations/Technician
- Red Cross First Aid B.C., Workplace Emergency First Aid — CPR Level 1
- Red Cross First Aid — Oxygen Administration
- Internal Auditing Basics

- Construction Quality Management
- 30-hour OSHA training

PROJECTS

1,200,000 Gallon Kapex Steel Ground Storage Tank, North Las Vegas, Nevada – City of North Las Vegas. TIC performed a cleaning and dive evaluation on this tank in June 2017. The purpose of this cleaning and evaluation was to determine the condition of the tank interior, exterior, exposed foundation, and accessories. Jim was the lead diver and crew leader for this evaluation.

1,500,000 Gallon Upper Northwood #2 Welded Steel Ground Storage Tank, San Jose, California – San Jose Water Company. TIC performed a drained evaluation on this tank in September 2020 to determine the condition of the tank interior, exterior, exposed foundation, and accessories. Jim was the lead crew member for this evaluation.

Ten Tanks located at the Naval Support Facilities in Kauai and Oahu, Hawaii – Naval Support Facilities. TIC evaluated these ten tanks including five welded steel ground storage tanks, four bolted steel ground storage tanks, and one ground tank consisting of a bolted steel shell, concrete floor, and aluminum geodesic dome roof. The field evaluations of these tanks were performed under responsible charge of Jim Peyer in January 2019.

Active Projects	Phase	Percentage of Time Allocated
Various evaluations	1	15
Various US Navy projects	1	10
Project Scheduling	Continual	8
Project Coordination	Continual	10
NACE 3 Team Leader – Palmdale Evaluations	Continual	40

RICHARD RACY, NACE 3, FIELD SERVICES MANAGER/ASSISTANT NACE 3 TEAM LEADER – INDIANAPOLIS, INDIANA

YEARS OF TANK EXPERIENCE: 33

SUMMARY OF TANK EXPERTISE

Rich Racy joined TIC after more than 20 years in the coating industry. He has extensive experience in coating removal/application and lead-paint abatement. His experience in job-site record keeping, safety, and crew management is invaluable in his work at TIC. As field services manager, Rich supervises and dispatches all TIC construction inspection technicians. He organizes and schedules all construction-phase inspection assignments and manages the quality of all work-in-process observation activities. Rich is one of the primary liaisons between TIC, tank owners, and contractors.

Rich will be an alternate NACE 3 Team Leader for the Palmdale Water District Projects. Should API 653 inspection activities take place while Rich is on-site, he will co-Team Lead with Mike Mutina of Mistras Group.

CERTIFICATIONS AND TRAINING

- NACE Certified Coating Inspector #12682
- Rope Rescue Operations/Technician
- Internal Auditing Basics

- SSPC-C5 Competent Person Training
- 10-hour OSHA training
- CPR and first aid training
- Confined space training

PROJECTS

5,000,000 Gallon 15th Street Concrete Ground Storage Tank, City of Winston-Salem, North Carolina. TIC evaluated the 119'-7" diameter by approximately 57' high 15th Street Tank in May 2015. The tank was drained for the evaluation and TIC performed the washout, evaluation and disinfection. Rich Racy was crew lead for this washout and evaluation.

3,000,000 Gallon Carter Hill Concrete Ground Storage Tank, City of Johnson City, Tennessee. TIC evaluated the 162' diameter by approximately 20' shell height partially buried concrete ground storage tank in March 2016 and previously in 2012. The evaluation in 2016 was a drained evaluation. Rich was crew lead for this evaluation.

Active Projects	Phase	Percentage of Time Allocated
Various evaluations	1	8
Various project close-outs	Final	5
Field Coordination	Continual	30
NACE 3 Team Leader – Palmdale Evaluations	Continual	25

RAY WALKER, NACE 3, ASSISTANT TEAM LEADER – INDIANAPOLIS, INDIANA

YEARS OF TANK EXPERIENCE: 42

SUMMARY OF TANK EXPERTISE

Ray Walker has been involved in the steel construction, welding, and coatings industries for over 42 years, with 31 of those years being spent in various management-level roles with a large water storage tank fabrication and erection company. Ray has experience from both the contractor's and inspection points of view, and hands-on experience in all aspects of steel tank fabrication, construction, rehabilitation, and coating. He has assisted in all aspects of structural and coating inspection of water storage tanks.

His diverse management roles have provided excellent opportunities to develop strong interpersonal relationship skills such as supervision of personnel and crews and written and oral communication. He is well versed in the oversight of construction and coatings activities, crew mobilization and demobilization, safety compliance, and adherence to project schedules. Ray possesses a strong technical background in welding, coating inspection, instrumentation, and has excellent documentation skills. His high degree of technical knowledge, coupled with his strong communication skills, enables him to readily identify and resolve problems in an incisive, expedient manner.

Ray will be an alternate NACE 3 Team Leader for the Palmdale Water District Projects. Should API 653 inspection activities take place while Ray is on-site, he will co-Team Lead with Mike Mutina of Mistras Group.

CERTIFICATIONS AND TRAINING

- NACE Certified Coating Inspector #4354
- OSHA 10
- OSHA 30

PROJECTS

2,600,000 Gallon McLean Welded Steel Reservoir, McLean, Virginia - Fairfax Water– TIC performed a washout and evaluation to determine the condition of the tank. Ray was a field crew member for this evaluation and washout in February 2020.

400,000 Gallon Valley View Tank C Welded Steel Standpipe, Glen Ellyn, Illinois - Illinois American Water. Ray was a field Crew member for the drained evaluation and washout in August 2020.

Active Projects	Phase	Percentage of Time Allocated
Various evaluations	1	45
NACE 3 Team Leader – Palmdale Evaluations	Continual	25

INSPECTION TECHNICIANS

The long-term functioning of your water storage tanks is why Tank Industry Consultants selects the very best field staff members whose experience and expertise match your Project. Our field department is composed of highly qualified field technicians, including field supervisors, a

project coordinator, a field services manager, a contract administrator, and experienced engineers, all of whom are available to willingly provide responsive, **prompt attention** to all of your project challenges.

The Team Leader will be NACE 3 level certified and the Assistant Team Leader on the Palmdale Water District projects will be either NACE 3 or NACE 2 level certified. Should additional technicians be necessary, a NACE 1 level certified technician may accompany.

- All of TIC's Inspection Technicians are NACE Certified Level 1, 2, or 3

MISTRAS GROUP - SUBCONTRACT

MICHAEL MUTINA – LAPORTE, TEXAS

YEARS OF TANK EXPERIENCE: 30

RELEVANT EXPERTISE

Michael Mutina provides comprehensive tank testing programs adhering to various aboveground and underground in service and out of service inspections guidelines and other various state and regulatory regulations, utilizing a customized non-intrusive tank inspection program that allows owners to determine the relative condition of their storage tanks without entering the asset. He supports all Tank Inspection activities throughout 70 different office locations and numerous clients.

Over 25 years as highly motivated, creative and versatile mechanical integrity inspection professional and project management in the petrochemical, pipelines, terminal and plant facilities with an excellent track record of meeting federal and state regulatory requirements. Extensive knowledge in construction, Integrity, performance management and managing risk and assurance. Knowledge for analyzing problems, developing, and simplifying procedures and finding innovative solutions.

Mike has managed numerous contract inspectors, report writers and repair contractors. Reviews mechanical design drawings and issue required hold points and inspection requirements for fixed equipment. Coordinated planning, budgeting and execution of AST's and Capital Value Process for the sustainability projects. Mike has strong communication with field operations, HSSE, engineering and external contractors. Provide technical expertise in inspection techniques and interpretation and applications of various codes and standards. Review new tank data sheets, drawings for new tanks and revisions to tanks.

Guides for maintenance and repair contractors in fabrication processes, inspection, codes specifications, repair plan preparation and quality assurance of equipment fabrication of repairs. Develop and review turnaround/shutdown work list for fixed equipment. Manage the QA/QC activities on new construction and repair projects, Committed to the highest levels of professional and personal excellence.

Mike Mutina will be responsible for all API 653 activities and should MFL scanning be recommended, will be responsible for those activities as well.

REGISTRATIONS/CERTIFICATIONS:

- API 653 Above Ground Storage Tank Inspector API #3132

EDUCATION

- Certificate of Technology in Welding Technology (Inspection)

PROJECTS

1,000,000 Gallon Tank S-1C-24 Ground Storage Tank in Lake Havasu City, Arizona. TIC hired Mistras Group to perform MFL floor scanning of this tank for further review after their evaluation recommended further review of bottom settlement.

5,000,000 Gallon Orchard Mesa Tank in Grand Junction, Colorado

Mike Mutina was responsible in performing MFL floor scanning for the 5,000,000 Gallon Orchard Mesa Tank in Grand Junction, Colorado.

Active Projects	Phase	Percentage of Time Allocated
Various evaluations/Projects	Ongoing	45
API 653 Team Leader – Palmdale Evaluations	Continual	10

BLUE LOCKER COMMERCIAL DIVING COMPANY – SUBCONTRACT

KELAN GONDREZICK, OWNER/OPERATOR AND SAFETY DIRECTOR – LAS VEGAS, NEVADA

YEARS OF TANK EXPERIENCE: 16

RELEVANT EXPERTISE

Kelan Gondrezick graduated from the Divers Institute of Technology in 2003. Since that time, he has served as Class 3 Diver and Lead Tender directing a team of three junior personnel making over 100 dives in an offshore environment. Kelan founded Blue Locker Commercial Diving Services in May 2012 and currently runs an OSHA mandated five-man dive team in all aspects of underwater construction. He is responsible for all diver safety and emergency response and has contracted with over 100 companies for underwater commercial diving.

Kelan will be the Safety Director for the diver team.

CERTIFICATIONS AND TRAINING

- PADI Dive Master - #430-964
- ADC Certified Commercial Diver
- CDA Unrestricted Commercial Diver
- Hazmat Certified
- Rigging Certified
- Kirby Morgan Helmet and Band Mask Inspector Certified
- AED and Heart Saver First Aid Certified
- Welding/Underwater Welding Certified
- Level 2 NDT Technician
- Water Survival Trained
- OSHA 30
- Nitrox Certified
- Safe Gulf Certified
- Dan 02 Oxygen Provider

EDUCATION

- Divers Institute of Technology – Seattle, Washington

PROJECTS

Cleaned and inspected multiple potable water tanks for City of Queen Creek in Queen Creek, Arizona.

Kelan has been diver and safety director for eight years for Queen Creek.

Cleaned and inspected multiple potable water tanks for Douglas County Water in Minden, Nevada.

Kelan has been diver and safety director for 16 tanks for Douglas County for the past nine years.

Cleaned and inspected multiple potable water tanks for Marlette Water in Carson City, Nevada. Kelan has been diver and safety director for the completed five-year contract and was recently awarded a new five-year contract renewal to clean and inspect their tanks.

Active Projects	Phase	Percentage of Time Allocated
Various evaluations	1	45
Team - Palmdale Evaluations	Continual	30

G. UNIQUE QUALITIES OR QUALIFICATIONS

Our engineering and evaluation services have been enriched through the extensive knowledge gained from literally thousands of tank evaluations and combined with our engineers' leadership and involvement in industry tank standards. **We specialize in tanks... only tanks.**

QUALITY ASSURANCE PLAN

TIC's management team is committed to continuing to provide the finest engineering and inspection services available to tank owners and operators. This is achieved through the selection of knowledgeable tank experts to join TIC; regular, systematic training, continual education and training on the latest industry standards, regulations, technology; and continual oversight of work at all project levels.

All engineering reports and project specifications are prepared under the direct supervision of Registered Professional Engineers, and each is reviewed by TIC's Managing Principal prior to being issued. Field technicians mobilized for tank evaluations are equipped with inspection books, specifically prepared for the style of tank they will be evaluating. The formalized inspection books alert the field technicians to all potential components of the tank and assist in assuring that all data is gathered so our engineers have all necessary information to provide the most accurate evaluation report possible.

TIC's field technicians and supervisors undergo regular safety and procedural training and conduct all field activities in accordance with the stringent requirements of our quality management team and approximately 50% of all field projects are subject to an internal audit.

POTENTIAL RISKS AND PLANS TO MITIGATE RISKS

As is stated in the TIC Safety Statement, "TIC considers no phase of operation more important than safety and health." TIC has spent the past fifteen years, since the TIC Safety Statement was first initiated, living it. We have systems of checks and balance in place to recognize and mitigate potential risks at each tank site.

TIC's goal is to have 0 injuries and illnesses and to cause 0 property damage. TIC provides and maintains safe and healthful working conditions and always establishes and insists on safe work practices. We want to make our safety and health protection efforts so successful that we make the elimination of incidents, injuries, and illnesses a way of life. TIC management is ultimately responsible for developing an effective safety and health program. All employees are required to follow safe work practices, obey rules and regulations, and work in a way that maintains the high safety and health standards developed and expected by TIC. By accepting mutual responsibility to operate safely, we all will contribute to the well-being of one another and consequently TIC. The objective of the safety and health written programs is to provide documentation regarding TIC policies relating to health and safety as well as to provide descriptions and procedures for performing work functions in a manner to reduce the potential for injury.

TIC received a prestigious safety award from the Steel Tank Institute/Steel Plate Fabricators Association (STI/SPFA) for 2019 during their 2020 online Business Meeting and Awards Presentation. TIC was awarded the **Safety Award of Excellence** that recognizes member companies whose employees have experienced a ZERO OSHA Total Recordable Incident Rate for the previous calendar year. TIC also received this important award in 2018.

COMPUTER RATING AND MANAGEMENT PROGRAM

With today's emphasis on infrastructure maintenance, the need for a procedure to rate and prioritize tank maintenance requirements has become increasingly evident. This is especially critical for municipalities, utilities, and industries with multi-tank systems. A computerized management tool for comparing the relative overall condition of tanks within the same water system would simplify long-term maintenance prioritization. Such a rating and maintenance prioritization system should also include provisions for estimating the cost of the forecasted maintenance schedule. A condition rating and maintenance prioritization system has been developed which not only integrates all of the above criteria, but also includes numerous other "user-friendly" characteristics. Tank Industry Consultants has designed a unique computer program to systematically rank and prioritize maintenance for water storage tanks based on the condition of the tanks.

Data Base Development: The database upon which the rating and prioritization system operates is established from information gathered by field technicians who perform a thorough field evaluation of the tanks to be included in the program.

From the information gathered during the field evaluation and the engineering report, TIC will assign individual numerical ratings to various aspects of the structural, sanitary, safety, coating, and corrosion adequacies of the tank. The numerical ratings are obtained by choosing the numbers corresponding to the most correct answer listed for a variety of questions as presented in an evaluation booklet. The entire tank is evaluated, starting with the immediate tank site and moving on to the foundation(s), anchor bolts, columns, tower members, and both the interior and exterior of the tank. All tank accessories, such as ladders, balcony safety railing, vents, overflow piping, and interior piping are evaluated. These individual ratings are then transferred to the spreadsheet database.

The rating and prioritization system program performs multiple logical and mathematical functions to determine, among other things:

- style of tank
- condition of the exterior coating
- condition of the interior coating
- safety rating
- sanitary rating
- structural rating
- overall comparative rating

The system rates and prioritizes tanks by five standardized criteria:

- structural requirements
- sanitary requirements
- safety requirements
- painting, corrosion, and general maintenance requirements, and
- a weighted combination of the previous four.

This variety of criteria would allow the District to base the maintenance schedule on multiple considerations such as structural integrity, liability risks, corrosion prevention, the importance of aesthetic appeal, and conformance to sanitary and safety standards.

Immediate Concerns: In addition to helping the District evaluate the collective maintenance requirements of their tank system, the rating and prioritization system can be used to flag tanks that require immediate safety, sanitary, or structural attention. Examples of deficiencies that may be noted as requiring immediate repair would include lack of adequate vent screening, unlocked manholes, holes/leaks in the tank, structurally threatening corrosion and metal loss, to name a few. The District

will be advised promptly of any observations which indicate an immediate danger to the public or its personnel from the physical condition of the tanks.

Customization: The versatility and flexibility of a spreadsheet allows the rating system to accommodate a wide variety of information that can be customized to meet the requirements of the District and allows the user to easily sort and prioritize the tanks. Some of the many possible variables from that the District could select to customize the spreadsheet are:

- tank name and/or number
- pressure zone
- tank style
- capacity
- dates of previous interior and exterior rehabilitation work
- date and name of tank erector
- type of tank construction
- overflow height
- date of last evaluation

Economic Factors: The rating system also provides estimated economic factors for each tank based on an anticipated scope of work. The economic factors would allow the District to more confidently prepare a yearly maintenance schedule and establish accurate budget requests up to five years in advance.

Benefits of the Computer Rating System:

- The computer rating system provides a planned maintenance strategy that is based on the condition of the tanks as opposed to a maintenance plan based on when the tanks were last painted. Sometimes a tank that was painted fifteen years ago is in better condition than one painted ten years ago.
- The ratings will provide the District with a quick summary of problem areas for each tank. For example, a sanitary rating of zero may indicate that the tank vent requires immediate attention.
- The computer program includes budget estimates for tank repair and maintenance work, typically on a five-year plan. This allows the District to properly budget money in advance of the tank work.
- By providing a planned strategy and by budgeting money properly, the District can save money by performing work when it is required, not on a pre-determined painting schedule.
- The system provides a quick summary of the condition of the District's storage tanks.
- TIC will provide the District with a list of deficiencies that cause a zero rating in any of the categories. This list will aid in making immediate repairs, if required.
- The computer program can be sorted to prioritize the tanks based on different factors depending on the District's needs. For example, the tanks could be prioritized by overall rating or paint condition rating.

This type of rating and prioritization system is extremely beneficial to water systems by consolidating and simplifying the amount of information required to operate and maintain their tanks more efficiently. Should the District be interested in this innovative tool, we would be pleased to discuss this with you further.

H. REFERENCES

TANK INDUSTRY CONSULTANTS

Mr. John Fitch, P.E.

Engineer

City of North Las Vegas

2250 Las Vegas Boulevard North, Suite 610

North Las Vegas, Nevada 89030

(702) 633-2043

fitchj@cityofnorthlasvegas.com

Mr. Ruben Contreras

Project Team Leader

Fort Bliss Water Services Company

Building 516-A Pleasanton Road

Fort Bliss, Texas 79916

(915) 569-5359

Ruben.contreras@asusinc.com

Mr. Brent Morris

Field Supervisor, Operations Department

Lake Havasu City, Arizona

900 London Bridge Road

Lake Havasu City, Arizona 86404

(928) 855-2618

morrisb@lhcaz.gov

I. DISTRICT'S PROFESSIONAL SERVICES AGREEMENT

IX.E Ownership of Documents

TIC's reports will have our copyright on them. We will gladly grant a license of copyright rights. This license would allow TIC to maintain our copyright ownership rights but allows Palmdale Water District to exercise their rights (i.e., copying, distributing) as the Owner of the document without that usage being considered copyright infringement.

J. EVALUATION AND CLEANING FEES

Schedule A: 6M Reservoir

Description	Quantity	Unit of Measure	Unit Cost	Total	Comments
Provide all labor, equipment and materials for the Inspection and evaluation of the interior and exterior of the reservoir with video and photo survey with the tank empty for inspection.	1	Lump Sum	\$20,895.00	\$20,895.00	Price includes sediment survey per API 653 and pit measurements of floor and shell and report review. If survey deemed unnecessary price will be reduced.
Provide all labor, equipment and materials for the removal of sediment from the bottom (floor) of the reservoir for initial thickness of 1/4 to 1/2 inch of sediment	0.5	Inch	\$2,600.00	\$1,300.00	If sediment does not have to be hauled a discount will be applied
Provide all labor, equipment and materials for the removal of sediment from the bottom (floor) of the reservoir for each 1/4-inch of depth of sediment beyond 1/2-inch.	0.25	Inch	\$950.00	\$237.50	
Provide draft report on reservoir condition and recommended repairs or replacements as required in the scope of work.	1	Lump Sum	\$500.00	\$500.00	
Provide final report on reservoir condition and recommended repairs or replacements as required in the scope of work.	1	Lump Sum	\$2,600.00	\$2,600.00	
Total				\$25,532.50	

Schedule B: Upper El Camino Reservoir

Description	Quantity	Unit of Measure	Unit Cost	Total	Comments
Provide all labor, equipment, and materials for the underwater inspection and evaluation of reservoir with video and photo survey of reservoir. Work includes diving inspection of the interior with reservoir partially or completely full.	1	Lump Sum	\$7,570.00	\$7,570.00	
Provide all labor, equipment and materials for the removal of sediment from the bottom (floor) of the reservoir for initial thickness of 1/4 to 1/2 inch of sediment	0.5	Inch	\$1,250.00	\$625.00	If sediment does not have to be hauled a discount will be applied
Provide all labor, equipment and materials for the removal of sediment from the bottom (floor) of the reservoir for each 1/4-inch of depth of sediment beyond 1/2-inch.	0.25	Inch	\$200.00	\$50.00	Per 1/4"
Provide draft report on reservoir condition and recommended repairs or replacements as required in the scope of work.	1	Lump Sum	\$500.00	\$500.00	
Provide final report on reservoir condition and recommended repairs or replacements	1	Lump Sum	\$2,000.00	\$2,000.00	
Total				\$10,745.00	

Schedule C: WTP 2.6MG Reservoir

Description 112	Quantity	Unit of Measure	Unit Cost	Total	Comments
Provide all labor, equipment, and materials for the underwater inspection and evaluation of reservoir with video and photo survey of reservoir. Work includes diving inspection of the interior with reservoir partially or completely full.	1	Lump Sum	\$7,570.00	\$7,570.00	
Provide all labor, equipment and materials for the removal of sediment from the bottom (floor) of the reservoir for initial thickness of 1/4 to 1/2 inch of sediment	0.5	Inch	\$5,595.00	\$2,797.50	If sediment does not have to be hauled a discount will be applied
Provide all labor, equipment and materials for the removal of sediment from the bottom (floor) of the reservoir for each 1/4-inch of depth of sediment beyond 1/2-inch.	0.25	Inch	\$1,100.00	\$275.00	Per 1/4"
Provide draft report on reservoir condition and recommended repairs or replacements as required in the scope of work.	1	Lump Sum	\$500.00	\$500.00	
Provide final report on reservoir condition and recommended repairs or replacements	1	Lump Sum	\$2,000.00	\$2,000.00	
Total				\$13,142.50	

Schedule D: 3MG Clearwell Reservoir

Description 124	Quantity	Unit of Measure	Unit Cost	Total	Comments
Provide all labor, equipment, and materials for the underwater inspection and evaluation of reservoir with video and photo survey of reservoir. Work includes diving inspection of the interior with reservoir partially or completely full.	1	Lump Sum	\$7,570.00	\$7,570.00	
Provide all labor, equipment and materials for the removal of sediment from the bottom (floor) of the reservoir for initial thickness of 1/4 to 1/2 inch of sediment.	0.5	Inch	\$5,595.00	\$2,797.50	If sediment does not have to be hauled a discount will be applied
Provide all labor, equipment and materials for the removal of sediment from the bottom (floor) of the reservoir for each 1/4-inch of depth of sediment beyond 1/2-inch.	0.25	Inch	\$1,100.00	\$275.00	Per 1/4"
Provide draft report on reservoir condition and recommended repairs or replacements as required in the scope of work.	1	Lump Sum	\$500.00	\$500.00	
Provide final report on reservoir condition and recommended repairs or replacements	1	Lump Sum	\$2,000.00	\$2,000.00	
Total				\$13,142.50	

Schedule E: Well No. 14A Reservoir

Description	Quantity	Unit of Measure	Unit Cost	Total	Comments
Provide all labor, equipment and materials for the Inspection and evaluation of the interior and exterior of the reservoir with video and photo survey with the tank empty for inspection.	1	Lump Sum	\$4,000.00	\$4,000.00	
Provide all labor, equipment and materials for the removal of sediment from the bottom (floor) of the reservoir for initial thickness of 1/4 to 1/2 inch of sediment.	0.5	Inch	\$2,200.00	\$1,100.00	If sediment does not have to be hauled a discount will be applied
Provide all labor, equipment and materials for the removal of sediment from the bottom (floor) of the reservoir for each 1/4-inch of depth of sediment beyond 1/2-inch.	0.25	Inch	\$750.00	\$187.50	
Provide draft report on reservoir condition and recommended repairs or replacements as required in the scope of work.	1	Lump Sum	\$500.00	\$500.00	
Provide final report on reservoir condition and recommended repairs or replacements	1	Lump Sum	\$2,000.00	\$2,000.00	
Total				\$7,787.50	

Schedule F: Ana Verde Tovey Reservoir

Description 40	Quantity	Unit of Measure	Unit Cost	Total	Comments
Provide all labor, equipment, and materials for the underwater inspection and evaluation of reservoir with video and photo survey of reservoir. Work includes diving inspection of the interior with reservoir partially or completely full.	1	LS	\$7,570.00	\$7,570.00	
Provide all labor, equipment and materials for the removal of sediment from the bottom (floor) of the reservoir for initial thickness of 1/4 to 1/2 inch of sediment.	0.5	Inch	\$1,470.00	\$735.00	If sediment does not have to be hauled a discount will be applied
Provide all labor, equipment and materials for the removal of sediment from the bottom (floor) of the reservoir for each 1/4-inch of depth of sediment beyond 1/2-inch.	0.25	Inch	\$100.00	\$25.00	per 1/4"
Provide draft report on reservoir condition and recommended repairs or replacements as required in the scope of work.	1	Lump Sum	\$500.00	\$500.00	
Provide final report on reservoir condition and recommended repairs or replacements	1	Lump Sum	\$2,000.00	\$2,000.00	
Total				\$10,830.00	

Schedule G: Well No. 5 Reservoir

Description	Quantity	Unit of Measure	Unit Cost	Total	Comments
Provide all labor, equipment and materials for the Inspection and evaluation of the interior and exterior of the reservoir with video and photo survey with the tank empty for inspection.	1	Lump Sum	\$12,625.00	\$12,625.00	Price includes sediment survey per API 653 and pit measurements of floor and shell and report review. If survey deemed unnecessary price will reduced.
Provide all labor, equipment and materials for the removal of sediment from the bottom (floor) of the reservoir for initial thickness of 1/4 to 1/2 inch of sediment.	0.5	Inch	\$2,300.00	\$1,150.00	If sediment does not have to be hauled a discount will be applied
Provide all labor, equipment and materials for the removal of sediment from the bottom (floor) of the reservoir for each 1/4-inch of depth of sediment beyond 1/2-inch.	0.25	Inch	\$800.00	\$200.00	
Provide draft report on reservoir condition and recommended repairs or replacements as required in the scope of work.	1	Lump Sum	\$500.00	\$500.00	
Provide final report on reservoir condition and recommended repairs or replacements	1	Lump Sum	\$2,000.00	\$2,000.00	
Total				\$16,475.00	

Schedule H: Well No. 18_19 Reservoir

Description 22	Quantity	Unit of Measure	Unit Cost	Total	Comments
Provide all labor, equipment, and materials for the underwater inspection and evaluation of reservoir with video and photo survey of reservoir. Work includes diving inspection of the interior with reservoir partially or completely full.	1	Lump Sum	\$7,570.00	\$7,570.00	
Provide all labor, equipment and materials for the removal of sediment from the bottom (floor) of the reservoir for initial thickness of 1/4 to 1/2 inch of sediment.	0.5	Inch	\$1,250.00	\$625.00	If sediment does not have to be hauled a discount will be applied
Provide all labor, equipment and materials for the removal of sediment from the bottom (floor) of the reservoir for each 1/4-inch of depth of sediment beyond 1/2-inch.	0.25	Inch	\$100.00	\$25.00	per 1/4"
Provide draft report on reservoir condition and recommended repairs or replacements as required in the scope of work.	1	Lump Sum	\$500.00	\$500.00	
Provide final report on reservoir condition and recommended repairs or replacements	1	Lump Sum	\$2,000.00	\$2,000.00	
Total				\$10,720.00	

Schedule I: 26th Street No. 1 Reservoir

Description 106	Quantity	Unit of Measure	Unit Cost	Total	Comments
Provide all labor, equipment, and materials for the underwater inspection and evaluation of reservoir with video and photo survey of reservoir. Work includes diving inspection of the interior with reservoir partially or completely full.	1	Lump Sum	\$7,570.00	\$7,570.00	
Provide all labor, equipment and materials for the removal of sediment from the bottom (floor) of the reservoir for initial thickness of 1/4 to 1/2 inch of sediment.	0.5	Inch	\$5,595.00	\$2,795.50	If sediment does not have to be hauled a discount will be applied
Provide all labor, equipment and materials for the removal of sediment from the bottom (floor) of the reservoir for each 1/4-inch of depth of sediment beyond 1/2-inch.	0.25	Inch	\$1,100.00	\$275.00	
Provide draft report on reservoir condition and recommended repairs or replacements as required in the scope of work.	1	Lump Sum	\$500.00	\$500.00	
Provide final report on reservoir condition and recommended repairs or replacements	1	Lump Sum	\$2,000.00	\$2,000.00	
Total				\$13,140.50	

Schedule J: 25th Street No. 2 Reservoir

Description 154	Quantity	Unit of Measure	Unit Cost	Total	Comments
Provide all labor, equipment, and materials for the underwater inspection and evaluation of reservoir with video and photo survey of reservoir. Work includes diving inspection of the interior with reservoir partially or completely full.	1	Lump Sum	\$7,570.00	\$7,570.00	
Provide all labor, equipment and materials for the removal of sediment from the bottom (floor) of the reservoir for initial thickness of 1/4 to 1/2 inch of sediment.	0.5	Inch	\$9,445.00	\$4,722.50	If sediment does not have to be hauled a discount will be applied
Provide all labor, equipment and materials for the removal of sediment from the bottom (floor) of the reservoir for each 1/4-inch of depth of sediment beyond 1/2-inch.	0.25	Inch	\$1,500.00	\$375.00	per 1/4"
Provide draft report on reservoir condition and recommended repairs or replacements as required in the scope of work.	1	Lump Sum	\$500.00	\$500.00	
Provide final report on reservoir condition and recommended repairs or replacements	1	Lump Sum	\$2,000.00	\$2,000.00	
Total				\$15,167.50	

Schedule K: 45th Street No. 1 Reservoir

Description 130	Quantity	Unit of Measure	Unit Cost	Total	Comments
Provide all labor, equipment, and materials for the underwater inspection and evaluation of reservoir with video and photo survey of reservoir. Work includes diving inspection of the interior with reservoir partially or completely full.	1	Lump Sum	\$7,570.00	\$7,570.00	
Provide all labor, equipment and materials for the removal of sediment from the bottom (floor) of the reservoir for initial thickness of 1/4 to 1/2 inch of sediment.	0.5	Inch	\$5,595.00	\$2,795.50	If sediment does not have to be hauled a discount will be applied
Provide all labor, equipment and materials for the removal of sediment from the bottom (floor) of the reservoir for each 1/4-inch of depth of sediment beyond 1/2-inch.	0.25	Inch	\$1,200.00	\$300.00	Per 1/4"
Provide draft report on reservoir condition and recommended repairs or replacements as required in the scope of work.	1	Lump Sum	\$500.00	\$500.00	
Provide final report on reservoir condition and recommended repairs or replacements	1	Lump Sum	\$2,000.00	\$2,000.00	
Total				\$13,165.50	

Schedule L: 45th Street No. 2 Reservoir

150	Quantity	Unit of Measure	Unit Cost	Total	Comments
Provide all labor, equipment, and materials for the underwater inspection and evaluation of reservoir with video and photo survey of reservoir. Work includes diving inspection of the interior with reservoir partially or completely full.	1	Lump Sum	\$7,570.00	\$7,570.00	
Provide all labor, equipment and materials for the removal of sediment from the bottom (floor) of the reservoir for initial thickness of 1/4 to 1/2 inch of sediment.	0.5	Inch	\$9,445.00	\$4,722.50	If sediment does not have to be hauled a discount will be applied
Provide all labor, equipment and materials for the removal of sediment from the bottom (floor) of the reservoir for each 1/4-inch of depth of sediment beyond 1/2-inch.	0.25	Inch	\$1,500.00	\$375.00	Per 1/4"
Provide draft report on reservoir condition and recommended repairs or replacements as required in the scope of work.	1	Lump Sum	\$500.00	\$500.00	
Provide final report on reservoir condition and recommended repairs or replacements	1	Lump Sum	\$2,000.00	\$2,000.00	
Total				\$15,167.50	

Schedule M: 45th Street No. 3 Reservoir

Description 150	Quantity	Unit of Measure	Unit Cost	Total	Comments
Provide all labor, equipment, and materials for the underwater inspection and evaluation of reservoir with video and photo survey of reservoir. Work includes diving inspection of the interior with reservoir partially or completely full.	1	Lump Sum	\$7,575.00	\$7,575.00	
Provide all labor, equipment and materials for the removal of sediment from the bottom (floor) of the reservoir for initial thickness of 1/4 to 1/2 inch of sediment.	0.5	Inch	\$8,650.00	\$4,325.00	If sediment does not have to be hauled a discount will be applied
Provide all labor, equipment and materials for the removal of sediment from the bottom (floor) of the reservoir for each 1/4-inch of depth of sediment beyond 1/2-inch.	0.25	Inch	\$1,500.00	\$375.00	per 1/4"
Provide draft report on reservoir condition and recommended repairs or replacements as required in the scope of work.	1	Lump Sum	\$500.00	\$500.00	
Provide final report on reservoir condition and recommended repairs or replacements	1	Lump Sum	\$2,600.00	\$2,600.00	
Total				\$12,450.00	

Schedule N: 47th Street No. 1 Reservoir

Description 106	Quantity	Unit of Measure	Unit Cost	Total	Comments
Provide all labor, equipment, and materials for the underwater inspection and evaluation of reservoir with video and photo survey of reservoir. Work includes diving inspection of the interior with reservoir partially or completely full.	1	Lump Sum	\$7,570.00	\$7,570.00	need pricing for sediment disposal
Provide all labor, equipment and materials for the removal of sediment from the bottom (floor) of the reservoir for initial thickness of 1/4 to 1/2 inch of sediment.	0.5	Inch	\$5,595.00	\$2,797.50	If sediment does not have to be hauled a discount will be applied
Provide all labor, equipment and materials for the removal of sediment from the bottom (floor) of the reservoir for each 1/4-inch of depth of sediment beyond 1/2-inch.	0.25	Inch	\$1,100.00	\$275.00	Per 1/4"
Provide draft report on reservoir condition and recommended repairs or replacements as required in the scope of work.	1	Lump Sum	\$500.00	\$500.00	
Provide final report on reservoir condition and recommended repairs or replacements	1	Lump Sum	\$2,000.00	\$2,000.00	
Total				\$13,142.50	

Schedule O: 47th Street No. 2 Reservoir

Description 132	Quantity	Unit of Measure	Unit Cost	Total	Comments
Provide all labor, equipment, and materials for the underwater inspection and evaluation of reservoir with video and photo survey of reservoir. Work includes diving inspection of the interior with reservoir partially or completely full.	1	Lump Sum	\$7,575.00	\$7,575.00	
Provide all labor, equipment and materials for the removal of sediment from the bottom (floor) of the reservoir for initial thickness of 1/4 to 1/2 inch of sediment.	0.5	Inch	\$5,595.00	\$2,797.50	If sediment does not have to be hauled a discount will be applied
Provide all labor, equipment and materials for the removal of sediment from the bottom (floor) of the reservoir for each 1/4-inch of depth of sediment beyond 1/2-inch.	0.25	Inch	\$1,200.00	\$300.00	per 1/4"
Provide draft report on reservoir condition and recommended repairs or replacements as required in the scope of work.	1	Lump Sum	\$500.00	\$500.00	
Provide final report on reservoir condition and recommended repairs or replacements	1	Lump Sum	\$2,000.00	\$2,000.00	
Total				\$13,172.50	

Schedule P: Lower El Camino Reservoir

Description 106	Quantity	Unit of Measure	Unit Cost	Total	Comments
Provide all labor, equipment, and materials for the underwater inspection and evaluation of reservoir with video and photo survey of reservoir. Work includes diving inspection of the interior with reservoir partially or completely full.	1	Lump Sum	\$7,575.00	\$7,575.00	
Provide all labor, equipment and materials for the removal of sediment from the bottom (floor) of the reservoir for initial thickness of 1/4 to 1/2 inch of sediment.	0.5	Inch	\$5,595.00	\$2,795.50	If sediment does not have to be hauled a discount will be applied
Provide all labor, equipment and materials for the removal of sediment from the bottom (floor) of the reservoir for each 1/4-inch of depth of sediment beyond 1/2-inch.	0.25	Inch	\$1,100.00	\$275.00	per 1/4"
Provide draft report on reservoir condition and recommended repairs or replacements as required in the scope of work.	1	Lump Sum	\$500.00	\$500.00	
Provide final report on reservoir condition and recommended repairs or replacements	1	Lump Sum	\$2,000.00	\$2,000.00	
Total				\$13,145.50	

Schedule Q: El Camino Underground

Description	Quantity	Unit of Measure	Unit Cost	Total	Comments
Provide all labor, equipment and materials for the Inspection and evaluation of the interior and exterior of the reservoir with video and photo survey with the tank empty for inspection.	1	Lump Sum	\$4,500.00	\$4,500.00	
Provide all labor, equipment and materials for the removal of sediment from the bottom (floor) of the reservoir for initial thickness of 1/4 to 1/2 inch of sediment.	0.5	Inch	\$5,000.00	\$2,500.00	If sediment does not have to be hauled a discount will be applied
Provide all labor, equipment and materials for the removal of sediment from the bottom (floor) of the reservoir for each 1/4-inch of depth of sediment beyond 1/2-inch.	0.25	Inch	\$2,000.00	\$500.00	
Provide draft report on reservoir condition and recommended repairs or replacements as required in the scope of work.	1	Lump Sum	\$500.00	\$500.00	
Provide final report on reservoir condition and recommended repairs or replacements	1	Lump Sum	\$2,000.00	\$2,000.00	
Total				\$10,000.00	

Schedule R: 5 MG Reservoir

Description	Quantity	Unit of Measure	Unit Cost	Total	Comments
Provide all labor, equipment and materials for the Inspection and evaluation of the interior and exterior of the reservoir with video and photo survey with the tank empty for inspection.	1	Lump Sum	\$19,373.00	\$19,373.00	Price includes sediment survey per API 653 and pit measurements of floor and shell and report review. If survey deemed unnecessary price will be reduced.
Provide all labor, equipment and materials for the removal of sediment from the bottom (floor) of the reservoir for initial thickness of 1/4 to 1/2 inch of sediment.	0.5	Inch	\$2,600.00	\$1,300.00	If sediment does not have to be hauled a discount will be applied
Provide all labor, equipment and materials for the removal of sediment from the bottom (floor) of the reservoir for each 1/4-inch of depth of sediment beyond 1/2-inch.	0.25	Inch	\$950.00	\$237.50	
Provide draft report on reservoir condition and recommended repairs or replacements as required in the scope of work.	1	Lump Sum	\$500.00	\$500.00	
Provide final report on reservoir condition and recommended repairs or replacements	1	Lump Sum	\$2,600.00	\$2,600.00	
Total				\$24,010.50	

Schedule S: Walt Dahlitz Reservoir

Description 96	Quantity	Unit of Measure	Unit Cost	Total	Comments
Provide all labor, equipment, and materials for the underwater inspection and evaluation of reservoir with video and photo survey of reservoir. Work includes diving inspection of the interior with reservoir partially or completely full.	1	Lump Sum	\$7,575.00	\$7,575.00	
Provide all labor, equipment and materials for the removal of sediment from the bottom (floor) of the reservoir for initial thickness of 1/4 to 1/2 inch of sediment.	0.5	Inch	\$5,595.00	\$2,797.50	If sediment does not have to be hauled a discount will be applied
Provide all labor, equipment and materials for the removal of sediment from the bottom (floor) of the reservoir for each 1/4-inch of depth of sediment beyond 1/2-inch.	0.25	Inch	\$1,000.00	\$250.00	Per 1/4"
Provide draft report on reservoir condition and recommended repairs or replacements as required in the scope of work.	1	Lump Sum	\$500.00	\$500.00	
Provide final report on reservoir condition and recommended repairs or replacements	1	Lump Sum	\$2,000.00	\$2,000.00	
Total				\$13,122.50	

Schedule T: 50th Street No. 1 Reservoir

Description 150	Quantity	Unit of Measure	Unit Cost	Total	Comments
Provide all labor, equipment, and materials for the underwater inspection and evaluation of reservoir with video and photo survey of reservoir. Work includes diving inspection of the interior with reservoir partially or completely full.	1	Lump Sum	\$7,575.00	\$7,575.00	
Provide all labor, equipment and materials for the removal of sediment from the bottom (floor) of the reservoir for initial thickness of 1/4 to 1/2 inch of sediment.	0.5	Inch	\$9,494.00	\$4,747.00	If sediment does not have to be hauled a discount will be applied
Provide all labor, equipment and materials for the removal of sediment from the bottom (floor) of the reservoir for each 1/4-inch of depth of sediment beyond 1/2-inch.	0.25	Inch	\$1,500.00	\$375.00	Per 1/4"
Provide draft report on reservoir condition and recommended repairs or replacements as required in the scope of work.	1	Lump Sum	\$500.00	\$500.00	
Provide final report on reservoir condition and recommended repairs or replacements	1	Lump Sum	\$2,000.00	\$2,000.00	
Total				\$15,197.00	

Schedule U: 50th Street No. 2

Description	Quantity	Unit of Measure	Unit Cost	Total	Comments
150 Provide all labor, equipment, and materials for the underwater inspection and evaluation of reservoir with video and photo survey of reservoir. Work includes diving inspection of the interior with reservoir partially or completely full.	1	Lump Sum	\$7,575.00	\$7,575.00	
Provide all labor, equipment and materials for the removal of sediment from the bottom (floor) of the reservoir for initial thickness of 1/4 to 1/2 inch of sediment.	0.5	Inch	\$9,445.00	\$4,722.50	If sediment does not have to be hauled a discount will be applied
Provide all labor, equipment and materials for the removal of sediment from the bottom (floor) of the reservoir for each 1/4-inch of depth of sediment beyond 1/2-inch.	0.25	Inch	\$1,500.00	\$375.00	per 1/4"
Provide draft report on reservoir condition and recommended repairs or replacements as required in the scope of work.	1	Lump Sum	\$500.00	\$500.00	
Provide final report on reservoir condition and recommended repairs or replacements	1	Lump Sum	\$2,000.00	\$2,000.00	
Total				\$15,172.50	

**PALMDALE WATER DISTRICT
BOARD MEMORANDUM**

DATE: January 20, 2021 **January 25, 2021**
TO: BOARD OF DIRECTORS **Board Meeting**
FROM: Mr. Dennis D. LaMoreaux, General Manager
RE: *AGENDA ITEM NO. 8.2.a – JANUARY 2021 GENERAL MANAGER REPORT*

The following is the January 2021 report to the Board of activities through December 2020. It is organized to follow the District's 2020 Strategic Plan approved in August 2020 and composed of six strategic initiatives. The initiatives follow for reference. It is intended to provide a general update on the month's activities.

PWD 2020 STRATEGIC PLAN SUMMARY



Water Resource Reliability: *Resilience, Development, Partnership*

Support and participate with local agencies in the development of projects and policies that improve water reliability

Expand the recycled water distribution system for both public access and construction water

Continue the Palmdale Regional Groundwater Recharge and Recovery Project to maximize state and federal funding opportunities

Support projects and initiatives that increase the resilience of the State Water Project

Expand access to available water supplies to increase drought resiliency, develop water storage projects, and improve the ability to capture groundwater, local surface water, and recycled water

Update the 2010 Strategic Water Resources Plan and Water Supply Fee to ensure funding for needed projects

Strengthen stakeholder relationships and implement Littlerock Dam and Reservoir sediment removal



Organizational Excellence: *Train, Perform, Reward*

Offer competitive compensation and benefits package for employee recruitment and retention

Focus Succession Planning Program on ensuring an overlap of training for key positions

Continue providing transparency to our ratepayers

Promote and support leadership training and professional development programs to enhance the District's customers' experience

Ensure employees are trained on the Strategic Plan and the District's Values of Diversity, Integrity, Teamwork, and Passion

Improve safety for Directors, employees, and customers

Develop career paths at the District for interns and pursue state and federal funding for intern programs

Involve employees in community engagement and professional platforms



Systems Efficiency: *Independence, Technology, Research*

Explore energy independence and evaluate the feasibility of energy options, including wind and solar

Incorporate more energy efficient technologies into the District's infrastructure

Advance new technologies to increase treatment efficiencies, including the use of Granular Activated Carbon (GAC)

Research state-of-the-art treatment techniques to help with systems efficiency and flexibility in using recycled water and surface water

Enhance technologies to increase efficiencies

Re-evaluate Lake Palmdale by-pass pipeline and pursue funding options

Improve Palmdale Ditch to reduce water loss



Financial Health and Stability: *Strength, Consistency, Balance*

Pursue grant funding for District projects and operations

Maintain the five-year financial plan adopted as part of the 2019 Water Rate Study, including the five-year Capital Improvement Plan

Build adequate reserve levels and achieve high-level bond rating

Seek potential revenue sources from vacant District properties

Monitor finances, operations, and projects affected by emergencies

Digitize and document departmental workflows



Regional Leadership: *Engage, Lead, Progress*

Increase involvement with water, business, and community partnerships

Provide opportunities for local businesses to contract with the District

Expand the Greater Antelope Valley Water Emergency Coalition by continuing to collaborate with neighboring water agencies and moving to include more agencies outside of the Antelope Valley

Develop working relationships and mutually beneficial projects with other water agencies in the District's state and federal representatives' districts

Develop events or activities with lessees of District properties

Host a 100th anniversary celebration for a fully re-opened Littlerock Dam and Reservoir recreation area in 2024



Customer Care, Advocacy and Outreach: *Promote, Educate, Support*

Enhance customers' experience through communication and feedback

Evaluate, develop, and market additional payment options

Develop the District's Public Outreach Plan and increase public awareness of current programs and services

Develop partnerships with various agencies to distribute information about resources available to the public

Engage elected officials and the public on the importance of local, state, federal, and global water reliability issues

Expand the District's social media platforms and find new avenues to share information and news

Plan and convert to an Advanced Metering Infrastructure (AMI) to increase customers' knowledge of water use

Continue to promote and expand school water education programs

Overview

This report also includes charts that show the effects of the District's efforts in several areas. They are organized within each strategic initiative and include status of the State Water Resources Control Board's (SWRCB) former long-term conservation orders (20 x 2020), the District's total per capita water use trends, 2020 final water production and customer use graph, 2021 actual water production and customer use graph, mainline leaks, and the water loss trends for both 12- and 24-month running averages.



Water Resource Reliability *Resilience, Development, Partnership*

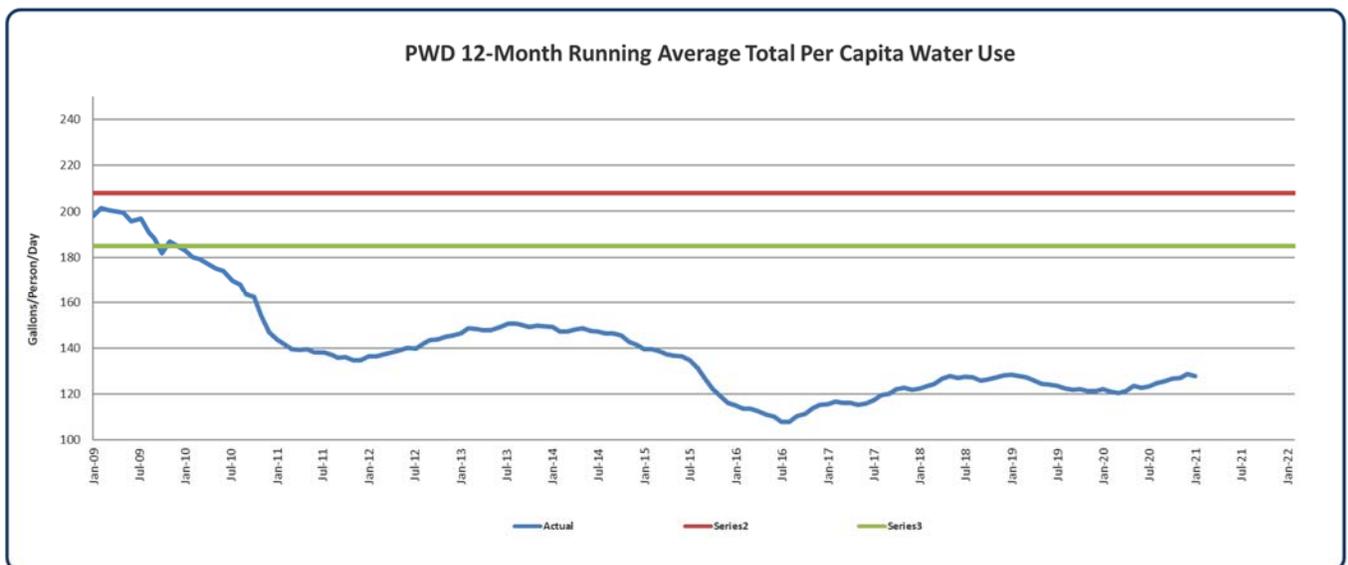
This initiative includes conservation efforts, water supply projects, and water planning.

Recent highlights are as follows:

State Water Resources Control Board (SWRCB) Activities

The 20 x 2020 per capita reduction goals passed by the legislature in 2009 with new long-term water budgeting requirements have now been replaced with new requirements and water agency water budgets. These follow through on the “Making Water Conservation a California Way of Life” plan. **The District expects to easily comply with the new requirements as they are based on the same philosophy as the District’s water budget rate structure. More will be known as Kennedy/Jenks works with staff on the 2020 Urban Water Management Plan. This report is due by July and will be brought to the Board for approval in May or June.** Until these criteria are finalized, the customers’ performance is shown in this report using the 20 x 2020 requirements.

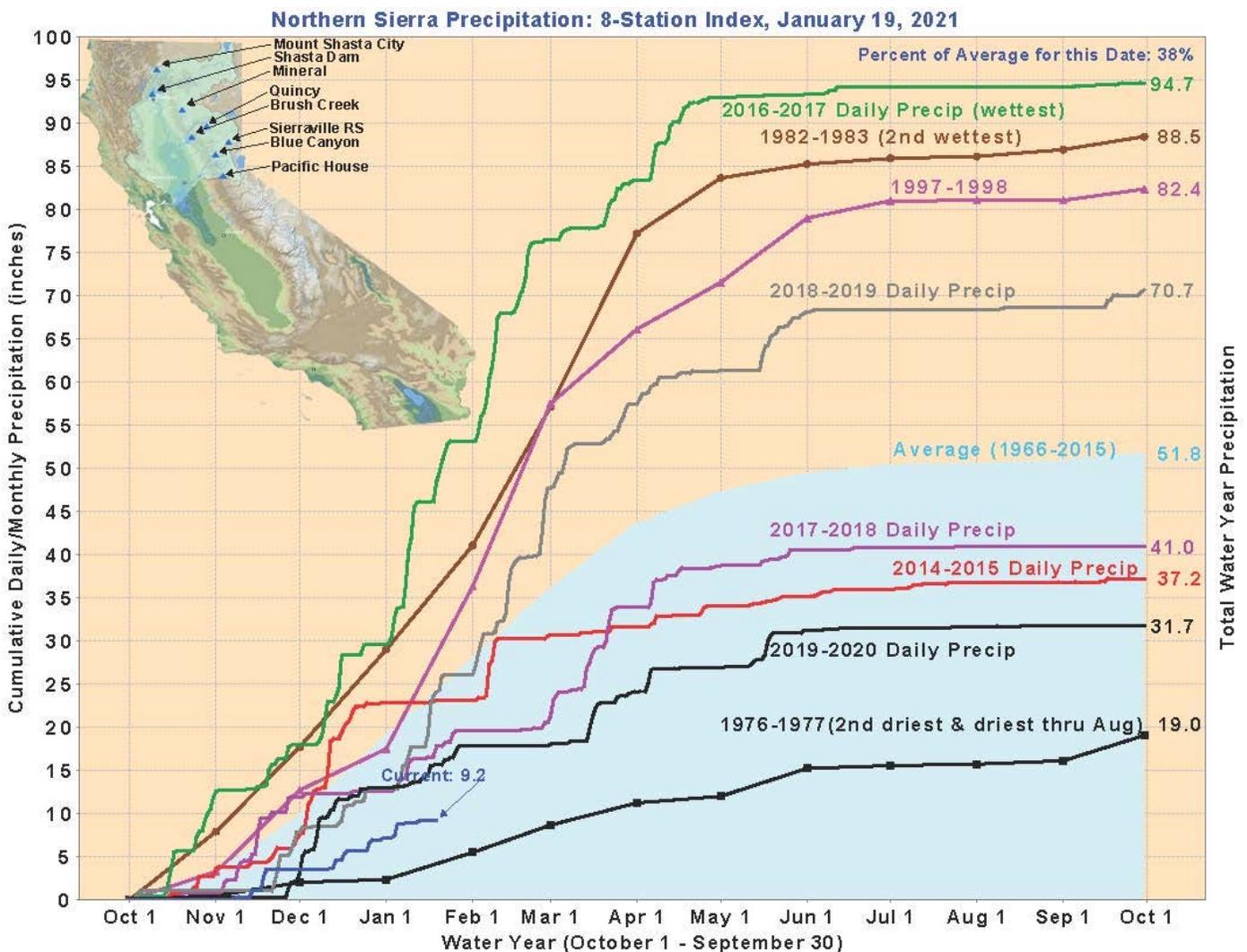
The District’s compliance with the former 20 x 2020 law is evident from the chart titled “PWD 12-Month Running Average Total Per Capita Water Use:”



The District’s customers have cut their water use by **44.2%** from the baseline number of 231 established in the 2015 Urban Water Management Plan and met the 2020 Goal in early 2010. The current Total-GPCD is 129.

Water Supply Information

- The AV Adjudication is now entering its sixth year, and the reduction to the native safe yield is in its fourth year. The District’s native groundwater right is 2,769.63 AF. The District’s 2020 groundwater rights totaled 8,188 AF without the prior year’s Carryover Rights. The District’s 2021 groundwater rights will be approximately 8,000 AF and over 10,000 AF of Carryover production rights from prior years.
- The 2021 water resources plan is tentative at this point. Precipitation in the area that contributes to the State Water Project is currently at 38% of average and the SWP allocation is 10%. The District is working to obtain other water including the Yuba Accord Water, LCID SWP water, and carryover SWP from 2020. These efforts, along with the District’s available groundwater rights, will lessen any needed conservation needed by our customers this year. The current precipitation and reservoir storage as of Tuesday, January 19, 2021, are as follows:

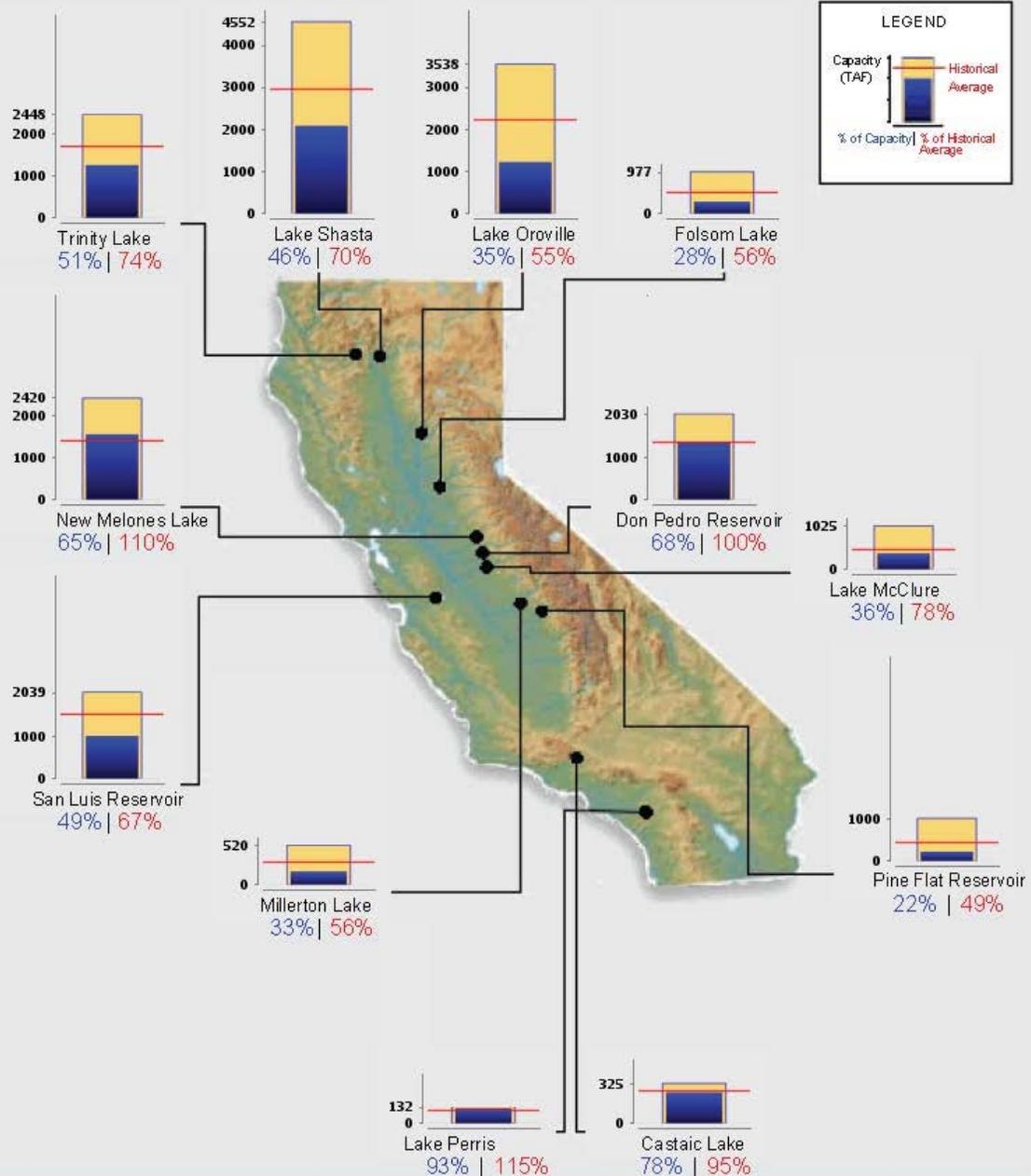




Reservoir Conditions

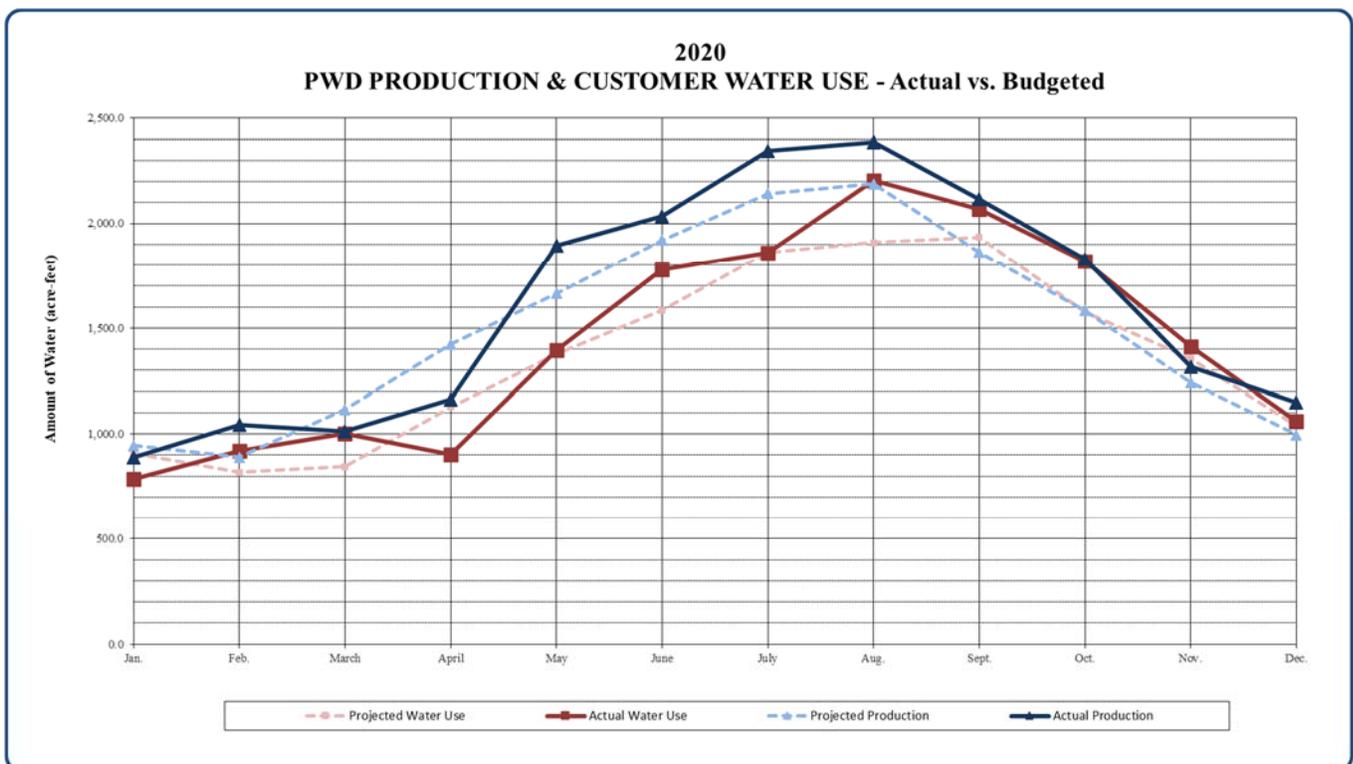
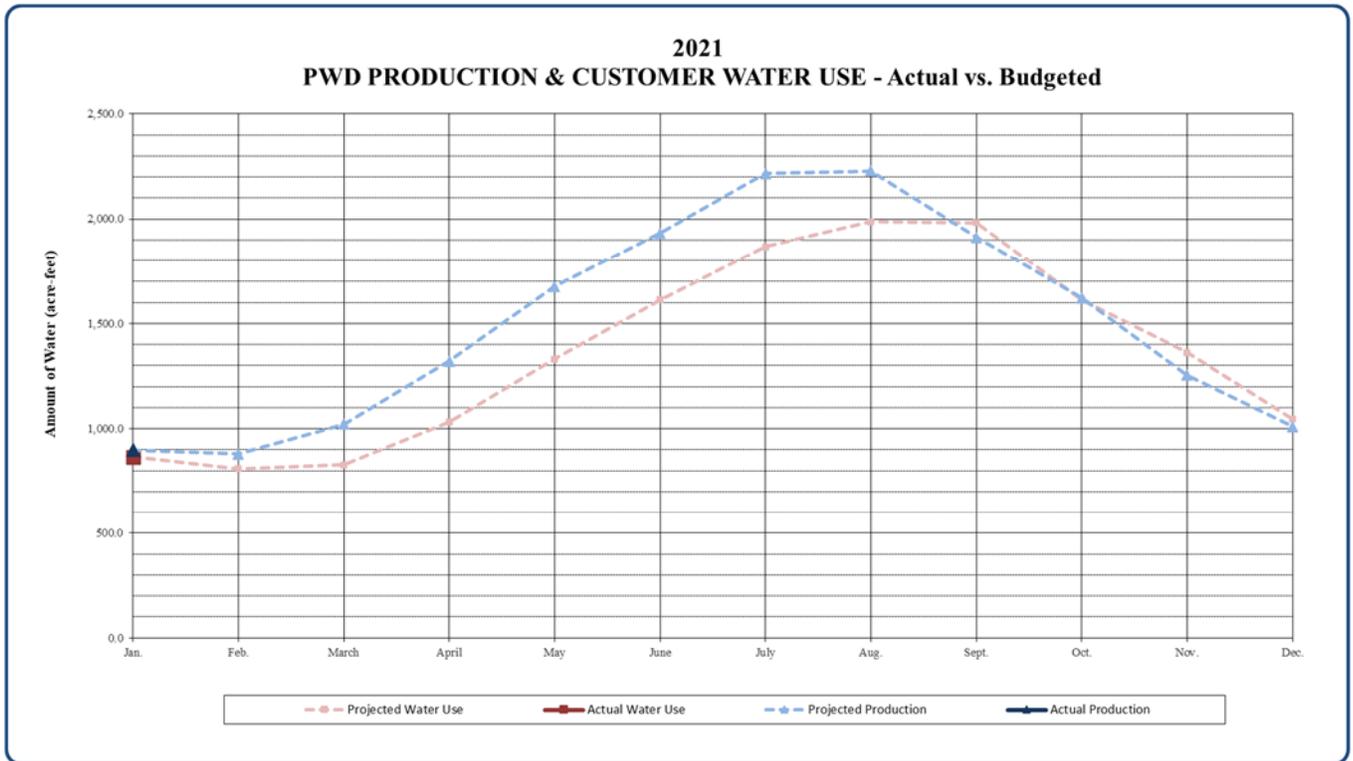
Ending At Midnight - January 18, 2021

CURRENT RESERVOIR CONDITIONS



Graph Updated 01/19/2021 04:18 PM

- The following graph is the anticipated monthly water consumption and production for 2021 based on the prior five years of actual monthly information. The total consumption is based on the 2021 Budget amount of 16,341 AF. The 2020 graph shows the projected and actual water use last year.



- Customer water use in 2020 was 17,213 AF. This is the most water used by customers since 18,127 AF in 2014, before the 2015-2017 drought.

Other Items

- The Littlerock Reservoir Sediment Removal Project Environmental Impact Report/Environmental Impact Statement (EIR/EIS) was fully approved in 2017. The Grade Control Structure was completed in January 2020.

Staff is working with the gravel quarry owners for the disposal of sediment from Littlerock Reservoir as the next phase of the project. These discussions have been hampered due to the COVID-19 pandemic. This has prevented starting sediment removal this year. However, the District received nine bids for the emergency sediment removal related to the Bobcat Fire.

- The public review of the Draft California Environmental Quality Act (CEQA) EIR for the Palmdale Regional Groundwater Recharge and Recovery Project was completed in 2016.

A test well was drilled at a different location on the proposed project site. The drilling is now complete, it is being equipped as a monitoring well, and the aquifer information is being accessed.

- The Upper Amargosa Creek Recharge Project is complete. One contract is for the California Aqueduct turnout and transmission water main. The other is for the recharge basins. They are higher than original estimates and resulted in an amendment to the agreement with the City of Palmdale to the District, LA County Waterworks, and AVEK for additional funding. The District is working with DWR to deliver water to the Project for recharge on a continuing basis.

- Delta Conveyance Facility (DCF): The State Water Contractors and the Department of Water Resources are continuing discussions about the Project's financing and operations. These discussions will result in a clearer picture of the effect on individual contractors. Staff is directly involved in these discussions and completing the Agreement in Principle.

- Delta Conveyance Design and Construction Authority (DCA): This joint powers authority is responsible for the environmental, design, and engineering of the project and works with the Department of Water Resources (DWR) on the project. The Board is now reorganized with more representation from smaller agencies. This includes adding two seats for the East Branch, Class 8, of the California Aqueduct. The agencies are AVEK, PWD, Littlerock Creek Irrigation District (LCID), Mojave Water Agency (MWA), Crestline-Lake Arrowhead Water Agency, San Gabriel Valley Municipal Water District,

San Bernardino Valley Municipal Water District (SBVMWD), San Geronio Pass Water Agency, Desert Water Agency, and Coachella Valley Water District (CVWD).

The Class 8 contractors have picked the following as our representatives on the DCA Board:

Director (2-year term): Robert Cheng, CVWD Assistant GM

Alternate Director (2-year term): Robert Tincher, SBVMWD Deputy GM

Director (1-year term): Adnan Anabtawi, MWA Senior Engineer

Alternate Director (1-year term): Dennis LaMoreaux, PWD GM

The first board meeting of the reorganized Board will be in February.

- A set of amendments to the State Water Project Contract was finalized in 2020. These changes provide for increased flexibility for SWP contractors to develop long-term exchanges of water within the SWP. This will be beneficial for all the contractors and will help the District maintain the SWP's current level of reliability for our customers. The Board approved this contract amendment in October 2020.



Organizational Excellence *Train, Perform, Reward*

This initiative includes efforts to restructure staff duties and activities to more efficiently provide service to our customers. Recent highlights are as follows:

- Nearly 80 percent of the District staff is required to have certifications or licenses issued by the State of California. Many of these have continuing education requirements which must be met by technical training. The District provides for this in several ways including hosting classes given by the California Rural Water Association, having a training budget for staff to attend conferences, and providing an education tuition allowance for each employee.
- COVID-19 Pandemic Response: District staff initiated a draft Pandemic Response Plan on March 4, 2020 as the State of California and County of Los Angeles issued declarations of emergency. Over the next two weeks, many District events were canceled. These included the Water Ambassadors Academy third session and facility tour, Strategic Plan Workshop, director in person coffees, and all-staff lunch and meeting. The District also reduced the lobby's capacity and eventually closed it to the public due to Los Angeles County health orders. The other options to conduct business with the District, including using the website, calling Customer Care, using the automated phone system, and using

remote payment sites, were promoted on social media, the website, and radio spots. The District has continued to comply with social distancing regulations by updating the Pandemic Response Plan, rotating staff to work from home, staggering work hours, and providing non-medical face coverings for staff.

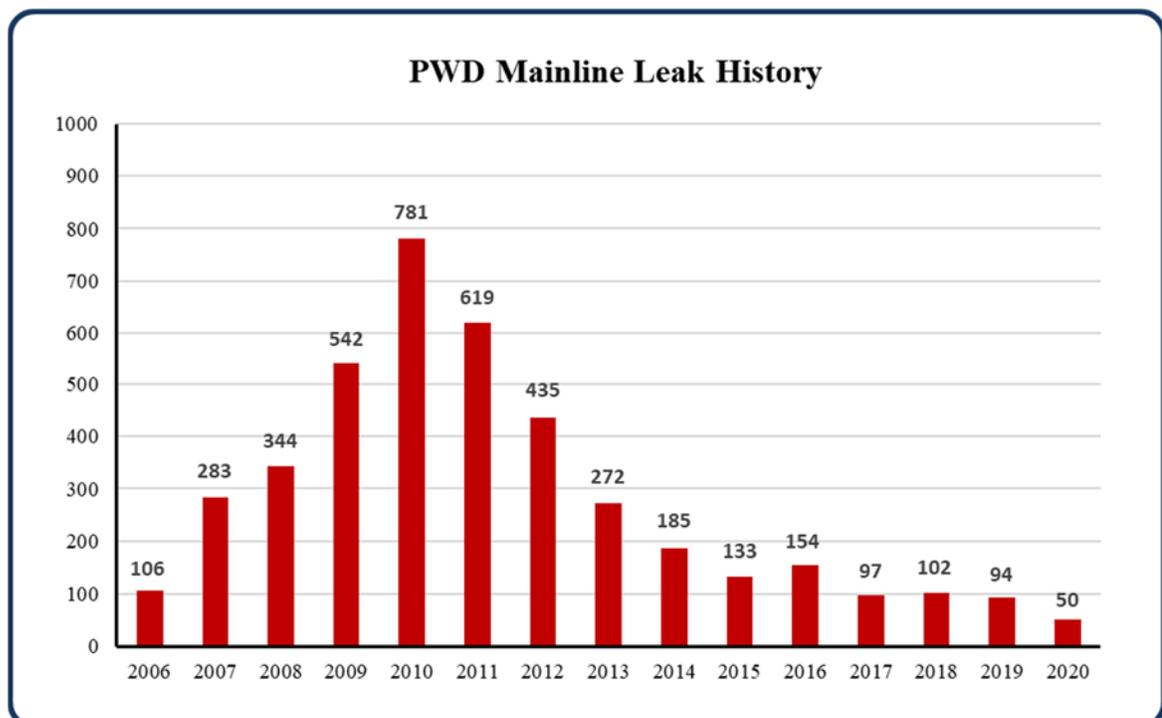
- Despite the pandemic, the District has continued to find ways for internships and training opportunities for college and high school students who are interested in the water industry.
- Several changes to the organization chart have been approved by the Board that provide opportunities for staff to prepare, compete, and further their careers at the District. These will help provide qualified pools of internal candidates to fill the positions of retiring staff.



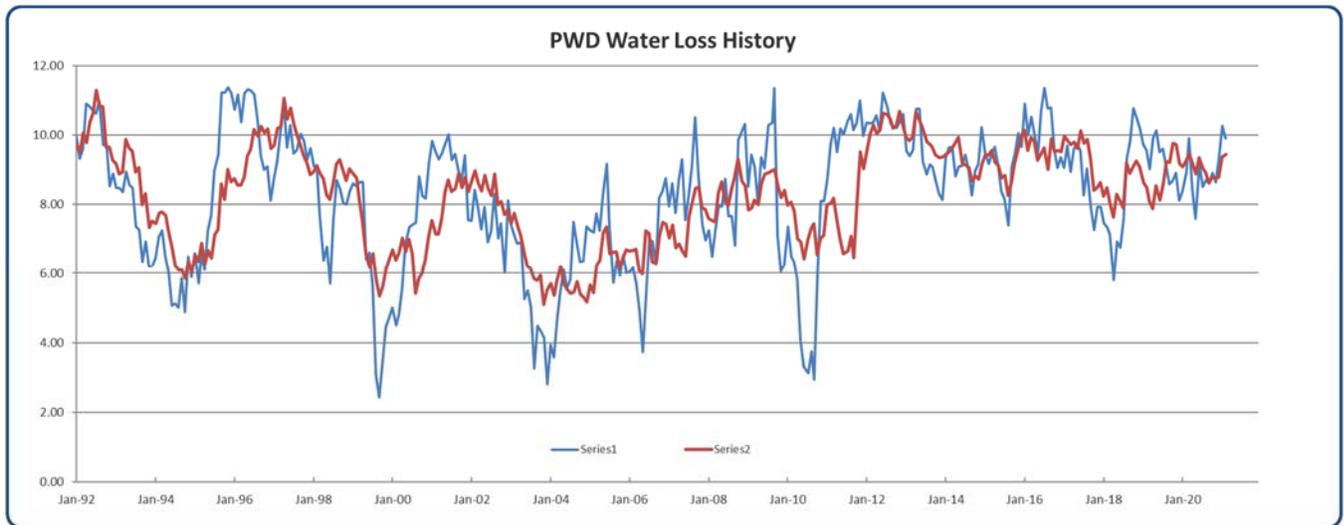
Systems Efficiency *Independence, Technology, Research*

This initiative largely focuses on the state of the District’s infrastructure. Recent highlights are as follows:

- The effects of the District’s past efforts in replacing failing water mains and meters can be seen in the reduced number of mainline leaks. This is illustrated in the chart titled “Mainline Leak History.” The mainline leaks for 2020 total 50, and there were 85 service line leaks. This is a 94% reduction in ten years and something the Board and staff can be very proud of.



- The District completed two water main replacement projects in 2020. One is in Avenue P near 25th Street East, and the other is in Avenue V-5 west of 47th Street East. Additional water main replacement projects are being designed for construction. All are included in the 2019 Water Rate Plan.
- The positive effect of both water main and water meter replacement programs is shown on the chart titled “PWD Water Loss History.” The running average for water losses remains under 10%.



- District staff is working on two energy technologies that will benefit our customers. One is the use of batteries for backup power at four booster facilities. The other is a demonstration project for the generation and storage of hydrogen.

These programs are grant funded and managed by the California Public Utilities Commission and California Energy Commission, respectfully. The grant funds go directly to the technology providers, Tesla and DasH2Energy. Both projects involve the installation of pre-designed and assembled equipment at District facilities with minimal construction work at the sites.

Additionally, the District has also applied to the CSDA-publicized \$20M de-energization grant program for the maximum grant amount of \$300,000.



Financial Health and Stability *Strength, Consistency, Balance*

- PWD and City of Palmdale staffs have worked together to obtain funding for the Palmdale Recycled Water Authority (PRWA) Phase II Project. PRWA is also trying to obtain

completed booster station plans being held by Los Angeles County Waterworks District 40 to complete the Phase II design plans and financing.

One source of funding is the AV Integrated Regional Water Management Plan (IRWMP) grant program. The Littlerock Sediment Removal and PRWA Phase II Projects are set to receive nearly \$900,000 for each project in the current round of funding. The other potential source of funding is the State's revolving fund program under the State Water Resources Control Board. This application process is active and is expected to fund the majority of the Project. The program can provide a 35% grant and a low-interest loan on the remaining costs.

- The 2019 Water Rate Study and Proposition 218 was completed when the Board unanimously approved Resolution No. 19-15. This set the water rate structure and water rates for 2020-2024 and includes criteria to evaluate the District's financial condition each year. It gives the Board the ability to reduce the water rates if the District's financial position meets four (4) of the criteria in an annual review while preparing the following year's budget.
- The 2021 Budget preparation was approved by the Board in November 2020 and will be finalized for publishing later this month.
- Fitch Ratings reviewed the District's bond rating in December 2020. The review affirmed the District's rating with them of "A+" with a stable outlook. This is a good result considering the uncertainty of unpaid water bills due to the COVID-19 shutoff moratorium. It will also be helpful for the planned \$20M bond issue this year.
- The District is seeking State and/or Federal assistance to provide water service to the Alpine Springs Mobile Home Park on Sierra Highway. It has poor water quality from its well and several health violations.
- The District has applied for Federal assistance to enclose additional sections of the Palmdale Ditch. This will help reduce the loss of water being moved from Littlerock Dam and Reservoir to Palmdale Lake for treatment and use by our customers.
- The Finance Department is continuing to monitor the effect of the State's moratorium on shutoffs due to nonpayment on cash flow. The effect is fluctuating somewhat but is remaining 5% or less below what is usually expected. Reminder notices were restarted in June and have helped stabilize the number of long-term outstanding accounts. Customers with large outstanding balances are also being contacted to see what assistance the District can provide. Staff is also placing property liens as appropriate to help secure payment of large, outstanding bills.

- District staff and financial consultants completed refunding a portion of the 2013A Revenue Bonds last fall. Approximately \$14.55M of the bonds were refunded saving the District \$67,103/year in debt payments. The refunding of a smaller portion of the same bond issue earlier in the year saved the District approximately \$46,000/year. Together, these actions save the District approximately \$113,000 in debt payments every year.



Regional Leadership *Engage, Lead, Progress*

This initiative includes efforts to involve the community, be involved in regional activities, and be a resource for other agencies in the area. Recent highlights are as follows:

- Activities of the Palmdale Recycled Water Authority (PRWA), AV Integrated Regional Water Management Plan (IRWMP), and Antelope Valley State Water Contractors Association have continued. The District has leadership positions in these organizations.
- The District staff continues to share the administration of the Antelope Valley Watermaster Board (AVWB) with AVEK and related meetings.
- District staff is active in the local chambers, the transition of the AV Board of Trade and Greater Antelope Valley Economic Alliance into AV EDGE, regional human resources, and public information organizations.
- 2021 “PWD Water Ambassador Academy” (WAA) and Junior WAA are tentatively scheduled for this fall.
- The District and other members of the Public Water Agencies Group (PWAG) have hired and share the services of an Emergency Preparedness Coordinator. This has already resulted in a successful training held at the District office. This approach also kept the District in a good position for compliance with the America’s Water Infrastructure Act (AWIA) of 2018 and responding to the current COVID-19 event.
- The American Indian Little League lease for the property at Division and Avenue P-8 was changed to only include the League and is now fully executed with a ten-year term.



Customer Care, Advocacy, and Outreach *Promote, Educate, Support*

This initiative includes efforts to better serve our customers. Recent highlights are as follows:

- The Board approved moving forward with a new supplier, meter brand, and reading system at the first meeting in September 2020. This change moves the District toward being able to offer customers more information about their water use.
- The ability to make payments at 7-Eleven and Family Dollar Store is continuing to grow due to the COVID-19 event.
- Customer participation in all electronic and remote payment methods has continued increasing due to the COVID-19 event.
- Customer Care staff has now successfully worked with customers from home for over nine months.
- Staff successfully conducted virtual coffee meetings with Directors and their constituents, issued regular internal and public newsletters, coordinated drive-through giveaways for customers, and monitored and maintained the District's social media.

Bobcat Fire Update

The Bobcat Fire began near Cogsdale Reservoir north of Arcadia on September 6, 2020. It entered into the Littlerock Reservoir watershed on September 12, 2020. It burnt through approximately 58% of the watershed as well as a large part of Juniper Hills. The Angeles National Forest (ANF) has issued a closure order through April 1, 2022 due to safety concerns related to the Bobcat Fire.

Staff has inquired about available USDA emergency funding to address potential debris flows into Littlerock Reservoir and completed permit amendments needed to start an emergency sediment removal later this month. The District will host a “Virtual Let’s Talk H2O!” in February focused on the Bobcat Fire’s potential effects on the Littlerock Reservoir.

The following map shows the Bobcat Fire, Station Fire, and the Littlerock Reservoir watershed.

