

# CONSULTING ENGINEERING DESIGN SERVICES PROPOSAL FOR REPLACEMENT OF FOUR REDWOOD WATER TANKS IN SODA BAY CSA-20

Prepared for Lake County Special Districts



**PACE**  
ENGINEERING



May 23, 2018

0.04

Scott Harter, P.E., Deputy Administrator  
Lake County Special Districts Administration  
230 N. Main Street  
Lakeport, CA 95453

Subject: CONSULTING ENGINEERING DESIGN SERVICES PROPOSAL FOR REPLACEMENT OF  
FOUR REDWOOD WATER TANKS IN SODA BAY CSA-20, LAKE COUNTY,  
CALIFORNIA

Lake County Special Districts (District) is soliciting proposals to provide professional services for the completion of a Preliminary Design Report (PDR) and design of new water storage tanks to replace four existing CSA-20 redwood water tanks. It is the intent of the District to hire a qualified consultant who can provide these services culminating in complete plans, specifications, and construction cost estimate which will be used to obtain bids for the construction of the new tanks. Engineering services will also include assistance during bidding and periodic construction inspection.

PACE Engineering, Inc. (PACE), in association with KC Engineering, is pleased to respond to the District's Request for Proposal (RFP) for this project. Our project team brings years of local experience in the planning, design, construction, and operation of water treatment and distribution system facilities around Clear Lake. Our team has been constructed to meet the specific needs of this project.

Our proposal is based upon a review of the RFP and a tour of the existing tank sites and facilities on May 10, 2018 with Deputy Administrator Scott Harter. We appreciate the District's extra time and effort to discuss constraints unique to each site.

PACE has local experience in planning, designing, and constructing improvements for new and existing water storage facilities. Project experience specifically suited to the upgrades proposed for CSA-20 include the 2014 Buckingham Park Water District (BPWD) Water System Upgrades Project, wherein PACE designed and provided services during construction for the replacement of the District's existing 30,000-gallon redwood clear well tank. The design and use of temporary potable water storage tanks was critical to the success of the project. PACE also designed and provided services during construction for the 2017 recoating of BPWD's distribution system reservoirs, which required the design and installation of temporary water storage tanks to allow the existing tanks to be taken offline while recoating was completed. PACE's experience with BPWD's need for temporary storage tanks that would fit on small tank sites is very similar to the

CSA-20 requirements. Similarly, PACE provided planning, design, and services during construction of Shasta Community Services District's Pump Stations and Tanks Replacement Project wherein four pump stations and four welded-steel storage tanks are currently being constructed under one prime contractor. Construction coordination requires no more than two tanks be taken offline at one time in order to meet fire safety standards.

The Project Team will work with the District, California State Water Resources Control Board (SWRCB) Division of Drinking Water (DDW), and FEMA to provide a project that when bid, meets project goals and regulatory requirements. Our working relationship with DDW staff in Santa Rosa through previous and two ongoing projects for BPWD and Konocti County Water District will continue with this project. Our Project Team acknowledges that all work by the Consultant shall meet requirements contained within the RFP including the Federal Emergency Management Agency (FEMA) Hazardous Mitigation Grant Program Conditions.

Consulting engineering design services for replacement of four redwood water tanks in Soda Bay CSA-20 consists of the following Scope of Services:

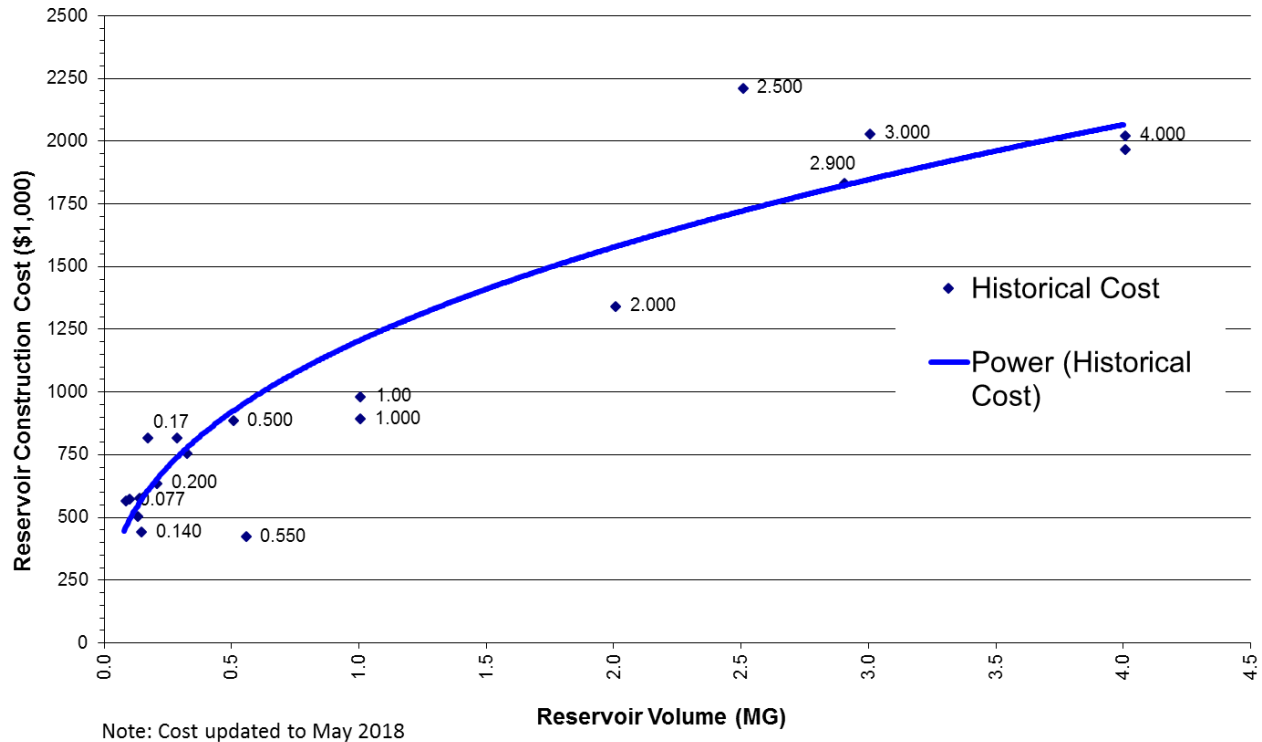
- Preparation of a PDR evaluating alternatives in terms of site constraints, geotechnical requirements of each site, and seismic design constraints. The PDR will include a summary of alternatives evaluated, selection of the preferred alternative, basis of design, and opinion of probable construction cost. Submittal of the final PDR approved by the District and DDW will finalize facilities and components to be included in the final design and within the scope of allowable FEMA costs.
- Provide complete plans and specifications for four new bolted steel tanks. Plans and specifications will address demolition of existing utilities and solutions to any conflicts, site stabilization, foundation design, site piping plan including trench and connection detailing, electrical and control design, valve and fitting schedules, and location of temporary water tank with connection details.
- Provide engineering services during bidding, periodic construction inspection, and preparation of Record Drawings.

Our fee to provide the outlined Scope of Services is broken down into the three major tasks outlined above. Additional related work, including environmental documentation, permitting, construction contract administration, contract change orders, requests for information, monthly pay requests, labor code compliance, and assistance with project close-out, can be provided by our highly qualified team. Our cost proposal includes major tasks itemized by hours, position, billable rate, and total cost, along with subconsultant fees and expenses and is contained within the enclosed sealed envelope. The Project Team and areas of responsibility are summarized in Table 1.

**TABLE 1**  
**CONSULTING ENGINEERING DESIGN SERVICES FOR**  
**REPLACEMENT OF REDWOOD WATER TANKS IN SODA BAY CSA-20**  
**PROJECT TEAM MATRIX**

| Name                  | Title               | Years of Experience | Years at Current Firm | Design Project       |         |         |                   |            |            |                       |                   | Years of Similar Project Experience | Notable Current Projects Underway |
|-----------------------|---------------------|---------------------|-----------------------|----------------------|---------|---------|-------------------|------------|------------|-----------------------|-------------------|-------------------------------------|-----------------------------------|
|                       |                     |                     |                       | Planning             |         |         |                   | Design     |            |                       |                   |                                     |                                   |
|                       |                     |                     |                       | Prelim Design Report | Geotech | Seismic | Survey Tank Sites | Site Plans | Temp Tanks | Electrical & Controls | Structural Design |                                     |                                   |
| PACE Engineering      |                     |                     |                       |                      |         |         |                   |            |            |                       |                   |                                     |                                   |
| Thomas Warnock, P.E.  | Project Manager     | 33                  | 30                    |                      |         |         |                   |            |            |                       |                   | 29                                  | 9                                 |
| Rick Bowser, P.E.     | Project Engineer    | 16                  | 17                    |                      |         |         |                   |            |            |                       |                   | 10                                  | 3                                 |
| John Brunemeier, P.E. | Structural Engineer | 36                  | 28                    |                      |         |         |                   |            |            |                       |                   | 20                                  | 4                                 |
| Tony Bowser, P.E.     | Electrical Engineer | 14                  | 14                    |                      |         |         |                   |            |            |                       |                   | 20                                  | 3                                 |
| Troy Jones, P.E.      | Senior Engineer     | 23                  | 23                    |                      |         |         |                   |            |            |                       |                   | 9                                   | 1                                 |
| Jesse Lenaker, P.L.S. | Survey Manager      | 12                  | 2                     |                      |         |         |                   |            |            |                       |                   | 12                                  | 8                                 |
| KC Engineering        |                     |                     |                       |                      |         |         |                   |            |            |                       |                   |                                     |                                   |
| Dave Cymanski, G.E.   | Geologic Engineer   | 29                  | 22                    |                      |         |         |                   |            |            |                       |                   |                                     |                                   |
| Andy King, P.E.       | Project Engineer    | 16                  | 16                    |                      |         |         |                   |            |            |                       |                   |                                     |                                   |

Our Project Team provides the ideal combination of planning, design, construction technical expertise, and knowledge of previous storage tank design projects to execute this project in a highly effective manner. Since 1980, PACE engineers have been responsible for the planning, design, and services during construction for 41 potable water storage tanks. Based upon this experience, PACE tracks reservoir construction costs as illustrated in Figure 1 and therefore; we should be able to provide an accurate construction cost for the proposed project.



**Figure 1 – Historical Reservoir Construction Cost By Volume**

This project provides the opportunity to leverage this knowledge to upgrade the system to eliminate the risk of fire to this critical infrastructure. PACE can supply numerous project references and client contacts if so requested.

Our proposal format includes the following:

- Cover Letter
- Project Understanding
- Project Manager Qualifications
- Staff Qualifications
- Firm Qualifications
- Resumes
- Cost Proposal in a Separate Envelope

The PACE Engineering Project Team is pleased to have this opportunity to respond to your RFP. Please call with any questions you have regarding our proposal.

Sincerely,



Thomas W. Warnock  
Principal Engineer

Enclosures

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**FIRM QUALIFICATIONS**

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**COST PROPOSAL (SEPARATE ENVELOPE)**

## **SECTION 1**

Lake County Special Districts (District) is soliciting proposals to provide professional services for the completion of a Preliminary Design Report (PDR) and design of four new bolted steel tanks to replace four existing redwood tanks which are susceptible to wildland fire damage. It is the intent of the District to hire a qualified consultant who can provide these services culminating in complete plans, specifications, and construction cost estimate which will be used to obtain bids for construction of improvements to Soda Bay CSA-20. PACE Engineering, Inc. (PACE), in association with KC Engineering, understand the Project and are pleased to respond to your Request for Proposal (RFP). PACE, as part our response to the RFP, has:

- Conducted a site review on May 10, 2018 with KC Engineering and District staff
- Discussed proposed improvements with District staff
- Coordinated geotechnical tasks with KC Engineering
- Reviewed FEMA policies and procedures of Standard Hazard Mitigation Grant Program

According to the District website, CSA-20 was formed in 1989 and in 1992, the Soda Bay Water Treatment Facility was completed to treat the surface water of Clear Lake for CSA-20 customers. CSA-20 currently has 667 connections and serves a population of nearly 1,417 residents with 15 miles of distribution pipeline, 6 storage tanks ranging in size from 30,000 to 330,000 gallons, 2 high service pump stations and 5 booster pump stations.

The four redwood tanks identified for replacement within CSA-20 are 1) Riviera Heights Zone 1 (60,000 gallons); Riviera Heights Zone 2 (60,000 gallons); Riviera Heights Zone 3 (60,000 gallons); and Riviera Heights Zone 4 (30,000 gallons). Potable water is pumped from the Soda Bay Zone 1 (330,000 gallons) storage tank to the Riviera Heights Zone 1 tank. Four 20-HP pumps at Zone 1 supply water to the Riviera Heights Zones 2 and 3 tanks. A 10-HP pump at Zone 3 supplies water to the Riviera Heights Zone 4 tank. It is anticipated that a temporary tank will need to be placed at each tank site while construction is underway on the new steel water tanks. Temporary tank sizes and locations will need to be determined during design based on analysis of zone water usage data from CSA-20. Potential locations for the temporary tanks were identified and discussed during the site visit.

Existing tank overflow piping ends at the tank edge or consists of polyethylene attached to the steel tank overflow piping. Existing tanks drain onto the ground at all sites. It may be desired to analyze alternatives for piping tank overflows and drains to locations that prevent tank site erosion.

Tank sites for Zones 1 and 3 have PG&E power for the on-site pump stations. Tank sites for Zones 2 and 4 have no power present. Relocation of existing tank-mounted power and level transducers will be required prior to demolition of the existing tanks.

The District has indicated that all environmental work and permits required for the project will be performed by County Staff. The District intends to pursue a categorical exemption under CEQA for the project.

The District has also requested only periodic inspection be provided in the proposal. PACE has included fifty percent construction observation in the proposal.

#### Riviera Heights Zone 1 Tank

The Riviera Heights Zone 1 tank site consists of a pump station and a 60,000-gallon redwood storage tank. The tank supplies water to Zone 1 as well as supplying all water pumped to Zones 2, 3, and 4. The pump station contains the pumps and controls necessary to pump water to Zones 2 and 3 tanks. A Tesco level transducer provides Zone 1 Tank level information locally and to the Soda Bay Water Treatment Plant.



**Figure 2 – Zone 1 Tank**

Multiple leaks from the tank have caused erosion and undermining of the existing concrete supporting the tank. Water currently runs towards the street as well as onto the adjacent property where it appears the owner directs the water into their landscaping.



**Figure 3 – Zone 1 Tank Erosion**

Walnut trees growing near the tank will likely need to be removed on the south and east sides to provide access for construction activities. A potential temporary tank site was identified as the asphalt driveway in front of the pump station and adjacent to the inlet/outlet tank piping.

#### Riviera Heights Zone 2 Tank

Riviera Heights Zone 2 is served by a 60,000-gallon redwood storage tank located at the Zone 2 tank site. A serious issue with this tank is that it no longer stands vertical but leans to the northeast towards the tank inlet/outlet. It is unclear whether there is an immediate risk of failure. Undermining of the existing concrete supporting the tank is visible. A Tesco level transducer provides tank level information locally and to the Soda Bay Water Treatment Plant. The tank-mounted transducer panel will need to be relocated to a temporary location prior to construction. There is no power present at the site.



**Figure 4 – Zone 2 Tank**

The steep gravel access driveway and small tank pad leaves no room for a temporary tank in those locations. However, a potential location was identified just northeast of the redwood tank adjacent to the inlet/outlet approximately 10 feet lower in elevation. An analysis of the zone hydraulics during preparation of the PDR will determine whether this location is appropriate.

### Riviera Heights Zone 3 Tank

The Riviera Heights Zone 3 tank site consists of a pump station and 60,000-gallon redwood storage tank. Undermining of the existing concrete slab supporting the tank is visible mainly on the northeast side of the tank. A short but steep asphalt driveway provides access to the site. The tank supplies water to Zone 3 as well as supplying all water pumped to Zone 4.



***Figure 5 – Zone 3 Tank and Pump Station***

The existing PG&E electrical service to the site is overhead with strain reliefs mounted to the redwood tank. The PG&E meter is also mounted to the side of the redwood tank. Both will need to be relocated in order to demolish and replace the existing tank. The pump building appears to be appropriate for a permanent location of the electrical service.

A Tesco level transducer panel mounted on unistrut is bolted to the concrete supporting the tank and provides Zone 3 Tank level information locally and to the Soda Bay Water Treatment Plant. The transducer panel will need to be relocated to the pump station building prior to demolition of the existing redwood tank.

#### Riviera Heights Zone 4 Tank

The Riviera Heights Zone 4 tank site consists of a 30,000-gallon redwood storage tank supplying water to Zone 4. A long asphalt driveway provides access to the site with limited space at the tank location. The tank has had a liner installed and according to Scott Harter, temporary storage tanks were used with success during installation of the liner. Sufficient room for the temporary tank is immediately adjacent and south of the redwood tank.

A Tesco level transducer panel mounted on the tank exterior provides Zone 4 Tank level information locally and to the Soda Bay Water Treatment Plant. The transducer panel will need to be relocated prior to demolition of the existing redwood tank.



**Figure 6 – Zone 4 Tank**

**SECTION 2****THOMAS WARNOCK, P.E.**

Thomas Warnock will serve as the overall Project Manager assisted by those listed in Table 1. Mr. Warnock has over 33 years of experience in the planning, design, construction management, and operations of water and wastewater projects in northern California and has been employed at PACE for 30 years. Mr. Warnock is a California Registered Civil Engineer, Class IV Certified Wastewater Treatment Plant Operator, and a Class V Water Treatment Plant Operator. He has been the project manager on approximately 29 tank design, replacement, and recoating projects completed for local agencies, 50% of which were federally funded in part or in total. Refer to Table 2 for a summary of Mr. Warnock's recent related experience with contact information.

| <b>TABLE 2<br/>PROJECT MANAGER EXPERIENCE</b>                                                                                                                                                                   |                            |                                                                                   |                                                      |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------|
| <b>PROJECT NAME &amp; DESCRIPTION</b>                                                                                                                                                                           | <b>COMPLETION<br/>DATE</b> | <b>OWNER</b>                                                                      | <b>CONTACT</b>                                       |
| <b>Tanks and Pump Stations Replacement Project</b> , \$3.85M, included replacement of four potable water storage tanks, temporary storage tanks during construction, four pump stations, and 12-inch water main | In Construction            | Shasta Community<br>Services District<br>P.O. Box 2520<br>Shasta, CA 96087        | Chris Koeper<br>General Manager<br>530-241-6264      |
| <b>2014 Water System Upgrades Project</b> , \$1.5M, included installation of new 0.2 MG clear well, GAC filters, and SCADA                                                                                      | 7/31/15                    | Buckingham Park<br>Water District<br>2880 Eastlake Drive<br>Kelseyville, CA 95451 | Nakia Foscett<br>General Manager<br>707-279-8568     |
| <b>2013 Water Project</b> , \$2.6M, included addition of 1.0 MG tank, well filters, pump station, and SCADA                                                                                                     | 2/13/13                    | City of Williams<br>810 E Street<br>Williams, CA 95987                            | Frank Kennedy<br>City Administrator<br>530-473-2955  |
| <b>Crag View Water Treatment Plant Improvement Project</b> , \$1M, included new water treatment plant with three pressure filters, 0.016 MG backwash tank and SCADA                                             | 9/2/12                     | Shasta County<br>Service Area #23<br>1855 Placer Street<br>Redding, CA 96001      | Pat Minturn<br>Public Works Director<br>530-225-5110 |
| <b>Water Treatment Plant Improvement Project</b> , \$2.1M, included 0.4 MG storage tank, 0.12 MG backwash tank, raw water pump station, rehab of two pressure filters, and SCADA                                | 11/12/09                   | Shasta Community<br>Services District<br>P.O. Box 2520<br>Shasta, CA 96087        | Chris Koeper<br>General Manager<br>530-241-6264      |

The current Shasta Community Services District Project listed above is very similar to the CSA-20 Project wherein the sizing and staging of temporary tanks had to be coordinated with the Fire Marshal to ensure adequate fire protection while under construction.

## ***PROJECT MANAGER QUALIFICATIONS***

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Mr. Warnock is currently the Project Manager on nine notable projects that are currently undergoing planning, design, or construction. Fortunately, Tom is able to assign substantially qualified project engineers to these projects. Tom also serves as the chief wastewater plant operator for the City of Dunsmuir, Lewiston Park Mutual Water Company, and Lewiston Community Services District. Here again, Tom relies heavily on skilled agency operators and PACE staff for daily operations, maintenance, and regulatory compliance of the facilities. Chief Plant Operator responsibilities allow Tom to remain current on the needs of regulators, operators, and agency managers alike.

## **SECTION 3**

Key PACE employees to be assigned to this project, total years of experience, and number of years employed at PACE are summarized in Table 1.

### **RICK BOWSER, P.E.**

Rick Bowser is a registered Civil Engineer; he joined PACE in 2001. Rick has experience in the design of water system facilities and sewage collection systems, as well as water reclamation projects. Rick was a leader in the design of the 2013 City of Williams Water System Improvement Project, City of Lakeport Water and Wastewater Improvements Project, and Buckingham Park Water District Water System Upgrades and Tank Recoating Projects, and Konocti County Water District Water System Improvements Project. His responsibilities included design, scheduling, construction observation, and engineering services during construction. Rick has also worked on the City of Redding Foothill 4 MG storage reservoir, Buckeye Transmission Main Project, and Shasta County CSA projects.

### **JOHN BRUNEMEIER, P.E.**

Mr. Brunemeier has 36 years of professional engineering experience. He is a registered Civil and Structural Engineer in the states of California and Nevada. During his career, he has had the opportunity to gain experience designing a wide variety of structures including multistory buildings, schools, hospitals, industrial buildings, as well as water and wastewater treatment plants, water storage tanks, and associated structures. Prior to coming to PACE, he was a plan check engineer for the City of Redding Building Department. His clients include architects, contractors, developers, and several public agencies.

### **TONY BOWSER, P.E.**

Tony is a registered Electrical Engineer in the State of California. He has more than 14 years of design experience with water/wastewater control systems including electrical power distribution, lighting system design, fire alarm system design, automatic control systems, and standby generating systems. Mr. Bowser is currently in the process of designing a new SCADA system for the City of Yreka among numerous other projects.

### **TROY JONES, P.E.**

Troy Jones has been involved in a variety of civil engineering projects over the last 23 years at PACE. Mr. Jones has experience in the design of storm drains, sewer, water, and site improvements, and has served as Project Engineer on several roadway, municipal improvement, and site development projects. He is a licensed engineer in California and has worked in the consulting field for 15 years and in the surveying field for an additional 4 years. His responsibilities include project management, design, technical specification preparation, utility coordination, and hydraulic analysis.

### **JESSE LENAHER, L.S.**

Mr. Lenaker is a licensed land surveyor with 10 years of experience. He joined PACE in 2016 and has been the Survey Manager since January 2017. His surveying background is wide ranging and includes experience completing boundary, cadastral, construction, control, and topographic surveys. Additionally, he has over 4 years of experience managing complex survey projects for both public and private sector clients.

## STAFF QUALIFICATIONS

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Lake County Special  
Districts Administration



Tom Warnock, P.E.  
Project Manager

Rick Bowser, P.E.  
Project Engineer

### STRUCTURAL

John Brunemeier, P.E.

### ELECTRICAL

Tony Bower, P.E.

### CIVIL

Troy Jones, P.E.

### SURVEY

Jesse Lenaker, P.L.S.



Dave Cymanski, C.E.G.  
Geologic Engineer

Andy King, P.E.  
Project Engineer

## **SECTION 4**

PACE Engineering, Inc. was established in 1976 to provide engineering and surveying services in northern California. We are a multi-discipline civil engineering firm specializing in water and wastewater facilities, street design, land development, structural, electrical and control, surveying and mapping, and other aspects of civil engineering projects. Currently, 50 employees including 12 registered civil engineers, 4 structural engineers, 2 electrical engineers, and 3 licensed land surveyors make up our professional team.

### **PRINCIPAL STOCKHOLDERS WITH CONTRACTUAL AUTHORITY:**

Paul Reuter, President and Managing Engineer

Fred Lucero, Secretary/CFO

Bob Harp, Vice President

Thomas Warnock, Vice President

John Brunemeier, Principal Engineer

### **CONTACT PERSON:**

Thomas Warnock

Principal Engineer

PACE Engineering, Inc.

1730 South Street

Redding, CA 96001

Office: 530-244-0202

Fax: 530-244-1978

Cell: 530-355-9612

Email: [twarnock@paceengineering.us](mailto:twarnock@paceengineering.us)

### **SUBCONSULTANTS:**

KC Engineering – Geotechnical

## **PACE EMERGENCY SERVICES EXPERIENCE**

A devastating wildfire in 2014 caused significant damage to the City of Weed's water distribution system. The Boles fire destroyed the City's old 100,000-gallon redwood Woodridge Tank and the remaining redwood Lincoln Heights Storage Tank was insufficient to provide adequate pressure and fire storage to the community.

PACE worked closely with the California Office of Emergency Services (Cal OES) to quickly restore and improve the City's storage and delivery systems. PACE partnered with TICO Construction in a design-build arrangement to replace both redwood storage tanks with PRV stations, a new 400,000-gallon steel tank to boost fire storage capacity, and a new well. Construction was completed in just 5 months.

## FIRM QUALIFICATIONS

A short list of potable water storage tank projects wherein PACE provided complete planning, design, and construction engineering services is summarized in Table 3.

| <b>TABLE 3<br/>PACE ENGINEERING<br/>POTABLE WATER STORAGE TANK EXPERIENCE</b>                                                                              |                  |                                    |                                                                   |
|------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|------------------------------------|-------------------------------------------------------------------|
| PROJECT                                                                                                                                                    | Manager          | OWNER                              | CONTACT                                                           |
|                                                                                                                                                            | Engineer         |                                    |                                                                   |
| <b>2018 Water System Improvements Project</b><br>Designed submitted on replacement of Clear Lake Pump Station, process upgrades, and new 0.5 MG clear well | Tom Warnock      | Konociti County Water District     | Frank Costner<br>General Manager<br>707-994-2561                  |
|                                                                                                                                                            | Rick Bowser      |                                    |                                                                   |
| <b>2016-2018 Tank and Pump Stations Replacement Project</b><br>Construct four replacement tanks and pump stations                                          | Tom Warnock      | Shasta Community Services District | Chris Koeper<br>General Manager<br>530-241-6264                   |
|                                                                                                                                                            | Jessica Chandler |                                    |                                                                   |
| <b>2016-2017 Storage Reservoir Recoating Project</b><br>Repair and recoating of District's 0.1 and 0.2 MG potable water storage tanks                      | Tom Warnock      | Buckingham Park Water District     | Nakia Foscett<br>General Manager<br>707-279-8568                  |
|                                                                                                                                                            | Rick Bowser      |                                    |                                                                   |
| <b>2014 Water System Upgrades Project</b><br>Construction of 0.4 MG clear well                                                                             | Tom Warnock      | Buckingham Park Water District     | Nakia Foscett<br>General Manager<br>707-279-8568                  |
|                                                                                                                                                            | Rick Bowser      |                                    |                                                                   |
| <b>2014 Water System Improvements</b><br>Repair and recoating of the existing 1.0 and 1.5 MG potable water storage tanks                                   | Tom Warnock      | City of Lakeport                   | Mark Brannigan (Retired)<br>Public Works Director<br>707-263-3578 |
|                                                                                                                                                            | Rick Bowser      |                                    |                                                                   |
| <b>Keswick 2013 WTP Improvements</b><br>Construction of 0.5 MG potable water storage tank and recoating of an existing 0.05 MG tank                        | Tom Warnock      | Shasta County                      | Troy Bartolomei<br>Deputy Public Works Director<br>530-245-6806   |
|                                                                                                                                                            | Rick Bowser      |                                    |                                                                   |
| <b>2013 City of Williams Water System Improvement Project</b><br>Construction of 1.0 MG at grade storage tank                                              | Tom Warnock      | City of Williams                   | Frank Kennedy<br>City Administrator<br>530-473-2955               |
|                                                                                                                                                            | Rick Bowser      |                                    |                                                                   |
| <b>2010-2013 Fall Creek Water System Project</b><br>Construction of 0.55 MG backwash tank and construction of 2.5 MG clear well                            | Tom Warnock      | City of Yreka                      | Steve Neill (Retired)<br>Director of Public Works<br>530-841-2319 |
|                                                                                                                                                            | Rick Bowser      |                                    |                                                                   |
| <b>2010-2013 Elk Trail Water Improvement Project</b><br>Construction of 0.28 and 0.14 MG potable water storage tanks                                       | Paul Reuter      | Shasta County                      | Al Cathey<br>Supervising Engineer<br>530-245-6807                 |
|                                                                                                                                                            | Keith Krantz     |                                    |                                                                   |
| <b>2010-2012 Crag View WTP Improvements</b><br>Construction of 0.016 MG backwash tank                                                                      | Tom Warnock      | Shasta County                      | Scott Wahl<br>Assistant Public Works Director<br>530-225-5133     |
|                                                                                                                                                            | Rick Bowser      |                                    |                                                                   |

**LAND SURVEYING**

PACE's survey department is responsible for property surveys and the preparation of legal descriptions for hundreds of rights-of-way and easements for road and utility projects. PACE teams provide survey supervision and coordination for control surveys, property boundary surveys, aerial mapping, topographic surveys, construction staking, and ALTA title surveys. PACE's widely respected survey department is led by Jesse Lenaker, L.S.

Our survey crews are equipped with the latest in "total station" technology, including two robotic total stations. Additionally, PACE is one of the few firms in northern California that owns and operates a global navigation satellite system continually-operating GPS base station. We are the northernmost member of the California Survey and Drafting Supply's CSDS RTN. This GPS system provides significant cost savings for control surveys and topographic surveys in open areas.



PACE has added 3D laser scanning to the long list of services we can provide. Laser scanning provides data capture of up to 216,000 points per second and the equipment can capture photos in the process, allowing the photos to be coordinated with the collected point cloud data. We anticipate this new service will be instrumental in providing high accuracy as-built records, its ability to take measurements from site photos over the web, and make more accurate quantity calculations. The potential benefit of this service to our Clients seems endless.



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*APPENDIX A*  
*PACE ENGINEERING, INC.*  
*RESUMES*



## THOMAS W. WARNOCK

### Principal Engineer

American Water Works Association

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#### OVERVIEW

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#### ROLE

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Project Manager

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#### EDUCATION

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MS, Civil Engineering, University of California, Berkeley, 1986

BS, Environmental Resources Engineering, Humboldt State University, 1985

AA, Forest Technician, College of Redwoods, 1976

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#### PROFESSIONAL REGISTRATION

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California, Civil Engineer, 1989

Grade IV Wastewater Treatment Plant Operator Certification, California

Grade V Water Treatment Plant Operator Certification, California

Grade II Water Distribution Operator Certification, California

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#### MEMBERSHIPS

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American Society of Civil Engineers

California Water Environment Association

Mr. Warnock has been a member of the PACE Engineering team since 1988. He is a member of the Board of Directors at PACE and specializes in water and wastewater planning, funding, design, construction, and operation. His areas of particular expertise include:

- Project funding through USDA, CDBG, EDA, CWSRF, and DWSRF
- Preliminary Engineering Reports for water and wastewater projects
- Master Plans for water and wastewater agencies
- Particle removal studies to meet Surface Water Treatment Rule
- Pilot plant studies to remove iron, manganese and arsenic
- Design of water and wastewater treatment plants
- Contract operation of water and wastewater treatment plants

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#### KEY PROJECTS

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##### Project Funding Experience

Mr. Warnock has been responsible for or assisted numerous agencies in the preparation of engineering reports for project funding through USDA Rural Development, Drinking Water State Revolving Fund, Clean Water State Revolving Fund, Economic Development Agency, and Community Development Block Grants including: Cities of Yreka, Dunsmuir, Red Bluff, Lakeport, and Williams; Weaverville Community Services District; Clear Creek Community Services District; Burney Water District; Siskiyou County Service Area No. 5; Shasta County Service Area Nos. 3, 6, 17, 23, and 25; Susanville Sanitary District; Rio Alto Water District, Lewiston Park Mutual Water Company, and Lewiston Community Services District. These projects involved direct contact with the funding agency coordinators for loans and grants.

## **Master Water Plans**

Project Manager or Engineer on Water Master Plans for the Bella Vista Water District, Weaverville Community Services District, Burney Water District, and Clear Creek Community Services District.

## **Surface Water Treatment Rule Particle Removal Studies**

Project Engineer for Surface Water Treatment Rule (SWTR) Particle Removal Studies. The Clear Lake study involved measuring particle removal across dual media followed by activated carbon pressure filters in series. The Clear Creek study involved particle removal across in-line dual media pressure filters at surface loading rates from 3 to 10 GPM/SF. Shasta Community Services District study included in-line versus direct filtration processes and concluded with an alternative filtration process approval for in-line filtration. Bella Vista Water District study resulted in direct filtration improvements to satisfy California Department of Public Health, but ultimately resulted in the use of inline filtration as an alternative technology that reliably provides drinking water that surpasses state and federal drinking water standards.

## **Pilot Filter Studies**

Project Engineer for pilot filter studies for removal of iron, manganese, and arsenic from well water. PACE constructed and operated a pilot filter to test alternative treatment technologies for removal of iron and manganese. The resulting filter design, which included chlorination followed by activated sand filtration, was implemented at five municipal production wells for Bella Vista Water District. Arsenic removal at the City of Redding's Well No. 13 included five different removal technologies arriving at ferrous oxide for the recommended process. Pilot work at the NAWA School in French Gulch resulted in the use of proprietary iron oxide media to remove arsenic below the maximum contaminant level of 10 micrograms per liter.

## **Design of Water and Wastewater Treatment Plants**

Project Manager on the design of several water and wastewater treatment plant upgrades and new installations including:

- Lewiston Community Services District - \$16.8M, CWSRF and USDA, 100% grant
- City of Lakeport Water Project - \$4.9M, USDA RD, 32% grant
- City of Lakeport Wastewater Project - \$4.7M, USDA RD, 25% grant
- City Of Williams Sewer and Water Project - \$2.5M, CDBG, 60% grant
- City of Yreka Fall Creek Water Project - \$11M, USDA RD, 25% grant
- City of Dunsmuir Collection and Wastewater Treatment Improvement Project – \$6M, CWSRF, 75% grant
- Bella Vista Water District Backwash Recycle Project - \$0.6M, WaterSMART, 50% grant
- Bella Vista Water District WTP Improvements and 26 MGD Expansion – \$8M, DWSRF, loan
- Susanville Sanitary Filtration and UV Disinfection Project - \$2.5M, CWSRF, 50% grant
- Weaverville Community Services District West Weaver WTP Project - \$0.4M, ARRA, 100% grant
- Rio Alto Water District WWTP and Constructed Wetlands Project - \$7M, USDA RD and CWSRF, loan
- Shasta County CSA 3 Castella Water Treatment Plant Project –\$1M, USDA RD, 75% grant
- Shasta County CSA 23 Crag View Water Treatment Plant Project - \$1M, DWSRF, 80% grant
- Shasta County CSA 25 Keswick Water Treatment Plant Project - \$1.5M, Prop 50, 100% grant

## **Contract Operations**

Responsible for past and present wastewater treatment contract operations at Red Bluff, Anderson, Shasta Lake, Mineral, Johns Manville, Dunsmuir, Lewiston Community Services District, and Lewiston Park Mutual Water Company. At Red Bluff, Mr. Warnock was the acting chief plant operator and lab director for the 1.4 MGD wastewater treatment plant that included primaries, activated sludge, clarification, filtration, anaerobic digestion, and disinfection.

## **Part-Time College Instructor**

Mr. Warnock has been the instructor in Water Treatment Technology at Shasta College since 1992. The courses use the CSU Sacramento/EPA textbooks and prepares the student to take the exams for distribution and water treatment plant operator certification.



## **RICKEY A. BOWSER**

### **Senior Engineer**

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#### **OVERVIEW**

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Mr. Bowser has been with PACE Engineering since 2001 and is a stockholder in the firm. His areas of expertise include:

- Water Distribution System Design
- Pump Station Design
- Water and Wastewater Treatment Plant Design
- Construction Observation

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#### **KEY PROJECTS**

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#### **ROLE**

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Water and Wastewater Engineer

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#### **EDUCATION**

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AA, Civil Engineering Technology,  
Shasta College, 2002

AA, Drafting Technology, Shasta  
College, 2002

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#### **PROFESSIONAL REGISTRATION**

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California, Civil Engineer, 2008

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#### **MEMBERSHIPS**

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American Society of Civil Engineers

American Public Works Association

California Water Environment  
Association

#### **Buckingham Park Water District 2014 Water System Upgrades Project**

Mr. Bowser participated in the design team for improvements to the District's water treatment plant, which included the construction of a new 0.2 MG clearwell, a new SCADA HMI system and upgraded PLC controllers, and a new backwash recycle system. Responsibilities include project management, design, scheduling, and engineering services during construction.

#### **Williams 2013 Water Project**

Mr. Bowser participated in the design team for improvements to the City's water supply including new filters for iron and manganese removal, the addition of backwash recycling capability, new pump station, new 1 MG reservoir, and a new SCADA system allowing city staff remote monitoring and control of the water system. Responsibilities included design, scheduling, and engineering services during construction of the well improvements, new pump station, and new reservoir.

#### **Keswick Water Improvement Project**

Mr. Bowser participated in the design team for improvements to the water treatment plant including new filters, the addition of backwash recycling capability, and a new 0.5 MG storage tank. Responsibilities included design, scheduling, construction observation, and engineering services during construction of water treatment plant modifications, existing storage tank modifications, and new storage tank.

#### **City of Lakeport 1.0MG & 1.5MG Potable Water Storage Tanks Repair and Recoating Project**

Mr. Bowser participated in the design team for repair and recoating improvements to the City's two potable water storage tanks. Responsibilities included design, scheduling, construction observation, and engineering services during construction of the 1.0MG tank floor replacement, addition of exterior stairways to both tanks, and interior and exterior recoating.

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## **KEY PROJECTS**

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### **Fall Creek Water System Improvement Project**

Mr. Bowser participated in the design team for improvements to the water treatment plant, Fall Creek Pump Station, and distribution system for the City of Yreka Water Division. Responsibilities included design, scheduling, construction observation, and engineering services during construction of water treatment plant modifications, two new storage tanks, existing pump station modifications, two new pump stations, and 3,300 feet of 12-inch recycle water main.

### **Crag View Water Treatment Plant Improvement Project**

Mr. Bowser participated in the design team for the design of a new water treatment plant which included new backwash recycle capability and recoating of the existing storage reservoir. Responsibilities included design, scheduling, construction observation, and engineering services during construction of the water treatment plant, recycle tank, recycle pipeline, and recoating of the existing storage tank.

### **Bella Vista Water District Backwash Recycle Project**

Mr. Bowser participated in the design team for the addition of backwash recycle capability to the water treatment plant for Bella Vista Water District. Responsibilities included design, scheduling, construction observation, and engineering services during construction of water treatment plant modifications, recycle pump station, and recycle pipeline.

### **Shasta CSD Water Treatment Plant Improvement Project**

Mr. Bowser participated in the design team for improvements to water treatment plant and Benson Drive Pump Station for Shasta Community Services District. Responsibilities included design, scheduling, construction observation, and engineering services during construction of water treatment plant modifications, two new storage tanks, and new pump station.

### **Reclaimed Water Disposal Area Expansion Project**

Mr. Bowser participated in the design team for 90-acre expansion of reclaimed water spray irrigation disposal area for the City of Lakeport. Responsibilities included design, scheduling, construction observation, and engineering services during construction of pump station modifications, 2,300 feet of 18-inch force main, 35,000 feet of 2-inch to 12-inch irrigation line, 3,300 feet of 12-inch diversion pipeline, and two retention basins.

Additional projects include the Mt. Shasta Interceptor Sewer Replacement, Fall River Mills Airport Sewer Pond Relocation Preliminary Design, and the City of Redding 4MG Reservoir Project.



## JOHN D. BRUNEMEIER

### Principal Engineer

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#### **ROLE**

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Structural Engineer

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#### **EDUCATION**

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BS, Civil Engineering, University of California, Davis, 1982

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#### **PROFESSIONAL REGISTRATION**

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California, Civil Engineer, 1985

California, Structural Engineer, 1988

Nevada, Civil/Structural Engineer, 1994

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#### **MEMBERSHIPS**

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Shasta Cascade Structural Engineers Association - President 1997-1999

Structural Engineers Association of Central California - Director 1997-1999

American Society of Civil Engineers

International Conference of Building Officials

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#### **OVERVIEW**

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Mr. Brunemeier has been a member of the PACE Engineering team since 1990. He is a stockholder in the firm and has extensive structural engineering experience. His areas of particular expertise include:

- Structural Design of Buildings
- Structural Design of Water and Wastewater Facilities
- Structural Condition Surveys and Failure Investigations
- Structural Plan Checking
- Design of Structural Repairs and Retrofits

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#### **KEY PROJECTS**

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##### **Buckingham Park Water District**

Mr. Brunemeier was project structural engineer for the design of a 200,000-gallon clearwell tank. Because the site was in an area of high seismicity, this tank required anchorage and foundation design. He also was project structural engineer for the design of large driven sheet pile retaining wall for protection of the site structures along the lakefront.

##### **City of Williams**

Mr. Brunemeier was project structural engineer for a significant water project that included a 1.0 MG welded-steel water tank, a 450,000-gallon bolted steel backwash tank, and associated buildings and structures.

##### **City of Redding**

Mr. Brunemeier was project structural engineer for the design of a new 4.0 MG welded-steel tank to replace two existing 1.5 MG concrete tanks that were leaking. The project received the "Project of the Year" (\$2.0 M - \$10.0 M construction category) from the American Public Works Association, Sacramento Chapter.

##### **City of Weed**

Mr. Brunemeier was project structural engineer for two welded-steel water tanks. The Bel Air Tank is a 450,000-gallon welded-steel tank. The Boles tank is a 400,000-gallon welded-steel tank and was constructed on a fast-track basis to restore water pressure to an area that lost a redwood tank to fire.

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**OTHER RELEVANT EXPERIENCE**

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Other experience includes the following design projects:

- Assessment of facilities for compliance with accessibility requirements
- Structural design of water tanks and basins
- Special inspection of: concrete, masonry, welding, and adhesive bolt installation
- Analysis and design of short span street and pedestrian bridges

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**EXPERIENCE PRIOR TO JOINING PACE ENGINEERING**

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Prior to coming to work at PACE Engineering Mr. Brunemeier had eight years of varied design experience with other firms. His experience includes the following:

- Member of structural design teams for two high-rise office buildings (19-story and 13-story) and two major hospital expansions (8-story and 5-story) located in Sacramento, California
- Project engineer for a large condominium project with post-tensioned parking structure in Sacramento, California
- Project engineer for structural retrofit of unreinforced masonry buildings (URM) located in Sacramento and Vallejo, California
- Project engineer for structural design of KMS office and manufacturing facility, Red Cliff Plaza, and the State Compensation Insurance Building, Redding, California
- Structural plan check engineer for the City of Redding

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**PUBLICATIONS AND PRESENTATIONS**

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Design and Construction Recommendations for Steel Moment Frames, technical contributions to the report to the City of Redding, 1998.

Engineering in Kenya, presented to the American Society of Civil Engineers, Shasta Branch and the Shasta-Cascade Structural Engineers Association, November, 1996.

Before the Next Earthquake - Guide to Repairing and Strengthening Your Home, technical contributions to this publication by the California Office of Emergency Services and the Federal Emergency Management Agency in response to the Humboldt County Earthquake Disaster, May, 1992.

The Problems with UBC Conventional Construction Provisions, co-presented to the Shasta-Cascade Structural Engineers Association, May, 1990.

The Loma Prieta Earthquake, co-presented to the American Society of Civil Engineers, Shasta Branch, December, 1989.



# ANTHONY A. BOWSER

## Senior Engineer

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### OVERVIEW

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Mr. Bowser has been a member of the PACE Engineering team since 2003. He is a stockholder and has extensive experience in the electrical design of educational, commercial, healthcare, and municipal facilities. His areas of experience include:

- Electrical Power Distribution
- Lighting System Design
- Fire Alarm System Design
- Automated Control Systems
- Standby Generating Systems
- Stand Alone and Utility-Interactive Photovoltaic (PV) Design
- Protective Device Studies and Arc Flash Hazard Analysis
- Conformance to California Energy Commission, OSHPD, DSA, and LEED Standards

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### ROLE

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Electrical Engineer

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### EDUCATION

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BS, Electrical/Electronic Engineering, California State University, Chico, 2003

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### PROFESSIONAL REGISTRATION

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California, Electrical Engineer, 2006

Oregon, Electrical Engineer, 2017

Washington, Electrical Engineer, 2017

Oklahoma, Electrical Engineer, 2017

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### MEMBERSHIPS

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National Fire Protection Association (NFPA)

Institute of Electrical and Electronic Engineers (IEEE)

Tau Beta Pi (TBP)

Eta Kappa Nu (HKN)

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### KEY EXPERIENCE

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#### Electrical Power Distribution and Lighting System Design

Mr. Bowser provides the power distribution and lighting system designs for facilities such as schools, healthcare facilities, water treatment plants, commercial/retail centers, and apartment complexes. Power distribution design encompasses the coordination with electric utility for service, one-line diagram, complete panelboard schedules, and load calculations in accordance with the authority having jurisdiction. Lighting system design includes interior and exterior lighting control, calculations in accordance with 2016 Title 24, photometric studies, and conformance to LEED standards.

#### Fire Alarm System Design

Mr. Bowser provides the fire alarm system design for facilities such as schools, healthcare clinics, hospitals, and commercial/retail centers. Fire alarm system design consists of a riser diagram, complete voltage drop and battery calculations in accordance with NFPA 72, and compliance with DSA and OSHPD requirements.

#### Automated Control Systems

Mr. Bowser has vast experience in developing control systems for various pumping stations and water treatment plants. The control systems design typically includes logic diagrams, automated operation with PLCs/RTUs, radio communications, design of the SCADA system, and creation of functional descriptions detailing the facility's automated operation.

#### Separately Derived System Design

Mr. Bowser provides field studies and designs for separately derived systems such as generators (standby and prime power) and PV systems (stand alone and utility interactive). For generators, the scope generally consists of analyzing the facility's electrical system, determining fuel source and run requirements, load analysis, and transfer switch configuration. For PV systems, the scope typically includes electrical system analysis, utility coordination, component research and selection (modules, inverters, batteries, charge controllers, conductors), one-line and three-line diagrams, and applicable system calculations.



## TROY M. JONES

### Senior Engineer

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#### EXPERIENCE

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Mr. Jones has been a member of the PACE Engineering team since 1995. He is a stockholder in the firm and has well-rounded experience in surveying, land development, and utility design. His varied areas of expertise include:

- Site Grading and Utility Design
- Subdivision Planning and Design
- Storm Water, Sewage Collection, and Water Distribution Systems
- FEMA Flood Elevation Determinations and Certificates
- Qualified Storm Water Pollution Prevention Plan Developer and Practitioner (QSD & QSP)

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#### KEY PROJECTS

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Mr. Jones has engineered site grading and utility plans, including topographic mapping and earthwork modeling, for schools, office complexes, commercial developments, and individual property owners. Representative projects include Churn Creek Retail, Shasta College Health and Science University Center, West Venture Medical Office Building, and Tehama County Administration Building.

As a Project Engineer and Project Manager, Mr. Jones has been involved in all phases of development planning and design. He has prepared tentative and final maps, road designs, drainage systems, water distribution systems, sewer collection systems, as well as represented clients to municipal agencies and obtained government approval.

Working with both the private and the public sectors, Mr. Jones has provided engineering design services for a variety of infrastructure such as storm water and sewer collection system, water distribution, and storm water management systems.

#### Sample Projects:

- Tehama County Administration
- U.S. Forest Service Building Site
- College of the Siskiyous
- West Venture Medical Office Building
- Shasta Enterprises Office Building
- Mercy Medical Center, various site improvement projects

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#### ROLE

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Project Civil Engineer

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#### EDUCATION

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BS, Civil Engineering, University of California, Chico 1995

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#### PROFESSIONAL REGISTRATION

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California, Civil Engineer, 1999

Qualified SWPPP Developer and Practitioner

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#### MEMBERSHIPS

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American Society of Civil Engineers  
Past President - Shasta Branch



## **JESSE J. LENAHER**

### **Survey Manager**

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#### **OVERVIEW**

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Mr. Lenaker has been a member of the PACE Engineering team since 2016. Mr. Lenaker has a multifaceted background, having experience with ALTA, boundary, topographic, control, residential development, commercial, construction, and public works land surveys. Mr. Lenaker specializes in managing projects requiring advanced techniques such as GPS surveying and statistical network analysis to perform geodetic and mapping services in both the field and office environments. Mr. Lenaker also has extensive experience performing earthwork volumetric calculations including initial “take-off” estimates, surface modeling, remedial grading calculations, and on-call quantity dispute resolution. Additionally, Mr. Lenaker’s expertise includes:

- Boundary Surveying
- Control and Monitoring Surveying
- Construction Surveying
- Land Description Preparation
- Map and Exhibit Preparation
- Topographic Surveying

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#### **KEY PROJECTS**

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As a Licensed Land Surveyor and Project Manager, Mr. Lenaker has served as project lead for several projects at PACE involving cadastral surveying, right-of-way mapping, and control surveying. Mr. Lenaker has been involved in the following projects:

- Bella Vista Water District, Regulating Solar Site Survey
- Bella Vista Water District, Wintu Pump Station Property Survey
- Evergreen Road Bridge Widening Project
- Gas Line Encroachment Surveys for Multiple Sites
- Maxwell PUD, Well 6, Boundary and Topographic Survey
- Multiple Cadastral Surveying Projects (over 15 sections)
- Shasta Community Service District, Easement Preparation for Multiple Sites

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#### **ROLE**

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Survey Manager

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#### **EDUCATION**

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BA, Natural Science,  
Chico State University, Chico 2015

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#### **PROFESSIONAL REGISTRATION**

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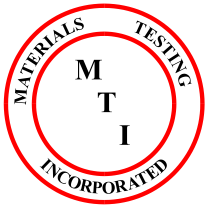
CA, Licensed Land Surveyor, 2008



## *APPENDIX B*

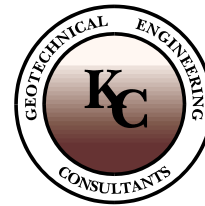
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### *KC ENGINEERING CO. COMPANY PROFILE AND RESUMES*



# **MATERIALS TESTING, INC. KC ENGINEERING CO.**

[www.mti-kcgeotech.com](http://www.mti-kcgeotech.com)



## **Central California Office/Laboratory**

865 Cotting Lane, Suite A  
Vacaville, Ca. 95688  
(707) 447-4025, Fax 447-4143  
David V. Cymanski, G.E., P.E.  
[dcymanski@kcengr.com](mailto:dcymanski@kcengr.com)

## **Northern California Office/Laboratory**

8798 Airport Road  
Redding, Ca. 96002  
(530) 222-1116, Fax 222-1611  
Andrew L. King, P.E.  
[aking@kcengr.com](mailto:aking@kcengr.com)

## **COMPANY PROFILE – STATEMENT OF QUALIFICATIONS**

**KC ENGINEERING COMPANY, a subsidiary of MATERIALS TESTING, INC. (MTI/KCE) established in 1996**, is a full-service Geotechnical Engineering, Materials Testing, Special Inspection and Environmental Assessment firm. With over thirty-five years in the professional Geotechnical Engineering business, we have participated in the development and assessment of thousands of sites with varying topographic and geologic conditions from the initial site history and resulting subsurface soil and geologic investigations to quality control and quality assurance during public and private improvement construction.

**MTI/KCE** facilities have been laboratory certified by Caltrans and approved for all QC/QA projects. We are also accepted by the American Association of State Highway and Transportation Officials (AASHTO) through the AASHTO Accreditation Program (AAP). All Acceptance Testers assigned to public works or public facilities under the jurisdiction of Caltrans are fully certified and maintain the required certifications. Our experience with private and public facilities drives our company to assist City and County public works departments, schools, colleges, universities, health care centers, hospitals and construction managers with the ability to evaluate new projects, to assess site rehabilitations and to contribute intelligent geotechnical engineering, materials testing and special inspection services prior to and during construction. Our Geotechnical Engineers and Field-Laboratory Managers assure the applicable ASTM, ICBO, NICET, Caltrans, AASHTO, ACI and AWS requirements are properly utilized for each project.

## **GEOTECHNICAL ENGINEERING CONSULTATION or PEER REVIEW:**



- Environmental Site Assessments
- Geotechnical & Geological Site Investigations
- Liquefaction & Seismic Analysis
- Foundation Analysis & Design Criteria
- Landslide Investigation & Mitigation
- Slope Stability Analysis
- Pavement Section Design & Rehabilitation
- Site Grading, Excavation, Filling, Underground and Foundation Construction
- Geotechnical Forensic Investigations and Post Construction Monitoring

## SPECIAL INSPECTION QUALIFICATIONS:



- Foundation Excavation Piers/Footings Observations
- Structural Masonry
- Steel & Bridge Inspection with a AWS/Certified Welding and Caltrans Certified Inspector
- Steel Reinforcement Inspection
- Anchor Bolt/Epoxy Installations
- Post Tension Certification
- Conditioning of Subgrade Soils
- Stressing Cable Inspection
- Shear Wall Diaphragm Nailing
- Soil Nail & Tieback Retaining Wall Inspection
- Spray-Applied Fireproofing

## MATERIALS TESTING QC/QA:

**ASTM E329 & ASTM C1077 CERTIFIED, CALTRANS & AASHTO APPROVED**



- Aggregates
- Concrete (Including Mix Designs and Reviews)
- Masonry
- Asphalt Concrete
- Structural and Reinforcing Steel
- Welding Inspection and Certification (Shop & Field)
- Pursuant to ASTM C1077 Section 10.1.1.5, **MTI/KCE** participates in the Cement and Concrete Reference Laboratory (CCRL) proficiency sample program of ASTM International

**MTI/KCE** regularly participates in the Reference Sampling Programs by Caltrans, AASHTO Materials Reference Laboratory (AMRL) and Cement and Concrete Reference Laboratory (CCRL). We are licensed by the State of California, Department of Radiological Health to operate nuclear density and moisture testing devices and each of our technical staff is certified in their use. Our laboratory and technical staff are certified and accredited by Caltrans and AASHTO to perform QA/QC testing for projects.

**MTI/KCE** has provided Geotechnical Testing and Special Inspection services to the Northern California and Southern Oregon area since 1978. In Redding, **MTI/KCE** has the largest, most accredited and certified laboratory north of Sacramento, California. Our laboratories combine basic and sophisticated testing equipment with competent, motivated and certified laboratory technicians. All equipment is routinely calibrated and maintained to provide the highest degree of quality control. Under the direction

of our Engineering group, each office has a full time Field-Laboratory Manager or Professional Engineer who supervises our Technicians and Special Inspectors, and assures inspection reports are completed and submitted pursuant to code or local jurisdiction reporting requirements.

**MTI/KCE** provides geotechnical engineering consultation services for a wide variety of projects including water agencies, power generation, hotels, schools, health care centers, hospitals, and military and public works roads and facilities. We have extensive experience providing geotechnical consultation services in rural and urban environments from Central to Northern California including Bay Area communities. We have completed projects on the Sacramento, San Joaquin, Napa and Sonoma Valley floors and on the hillsides of the Sierra Nevada, Cascade, Shasta and Coast Ranges. **MTI/KCE** engineers and staff can be expected to be team players, to be familiar with regulatory specifications and requirements, and to communicate effectively with Construction Managers, Architects, Engineers, School Districts, and Municipal and State or Federal agencies. With over fifty years combined experience in the geotechnical engineering industry, we have participated in the exploration and development of numerous sites with widely varying topographic and geologic conditions.

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### **GENERAL PROJECTS**



### **Cypress Avenue Bridge Replacement Project**

**MTI-KCE** was contracted to perform all inspection, sampling, and testing to verify that the construction complies with the plans, Prime Agreement special provisions, and specifications. This included preparation of reports and notifications of non-conforming work/failed tests, records management and record keeping. Inspections and compliance reports were performed on materials including soil, concrete, aggregate, structural steel, and asphalt. Sampling, testing, and special inspections were performed by our staff with relevant certifications and up to date training. Engineering technicians and special inspectors were available both day and night shifts for concrete placement and asphalt paving to facilitate traffic lane closures.

Our knowledge and services aided in the successful completion of this project.

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(Before)

### **Pit 3, 4, & 5 Project Relicensing Improvements**



(After)

Modifications were needed at the existing dams to provide the appropriate facilities and devices for releasing, measuring, monitoring, and regulating the required flows under the new FERC license conditions. The new FERC license and the associated recommendations by the United States Forest Service (USFS) under Section 4(e) also required significant upgrades to project roads, restoration to several spoil pile sites, addition of new recreation facilities, and measures to improve the visual aspects of the project. In addition to the relicensing improvements, PG&E will construct a new 2.8 MW Britton Powerhouse in conjunction with the proposed instream flow release facility at Pit 3 Dam.

**MTI-KCE** was contracted to perform all necessary tests and inspections required to verify the quality of construction as specified on the Drawings and in the Specification or as otherwise necessary to assure sound and professional workmanship and the integrity of the final product. This included field and laboratory testing of soil, concrete, and aggregate. Materials not tested in the field were immediately transported to our full-service laboratory for necessary testing. Continuous monitoring and special inspection to provide the design-build team information without slowing the work progress was essential. Full-time inspectors were re-located to the remote site to meet the aggressive schedule. Inspections and compliance reports were performed on materials including soil, concrete, anchors, structural steel, and asphalt.

In addition to testing, observation, and special inspection; our engineering staff worked closely with the design-build team to provide geotechnical consultation and slope monitoring. Slope stability and inclinometer/extensometer monitoring were important tools for construction within the steep canyon setting of the Pit River. A slope stability analysis was necessary for the crane pad adjacent to the Pit 3 Dam. In addition, slope inclinometers and extensometers were installed and monitored by our engineering staff during the cut slope excavation and rock bolt installation.

Our knowledge and services aided in the successful completion of the improvements for this project.

|           |                                                                                                                                     |                                                                                                                                                                                                                                                                                                          |                         |
|-----------|-------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|
| RD2977-09 | Proposed Water Tank<br>Clearwell Site<br>Fall Creek Water Project<br>Yreka, CA                                                      | Pace Engineering<br>1730 South Street<br>Redding, CA 96001<br>Contact: Bob Harp (Cell – 604-0547<br>Email: <a href="mailto:bharp@paceengineering.us">bharp@paceengineering.us</a><br>Office (530) 244-0202 Fax (530) 244-1978                                                                            | 05/13/09<br><br>ALK     |
| RD3439-12 | City of Yreka Wastewater<br>Treatment Plant Improvements<br>Yreka, CA                                                               | PACE Engineering, Inc.<br>1730 South Street<br>Redding, CA 96001<br>Contact: Paul Reuter<br>Email: <a href="mailto:preuter@paceengineering.us">preuter@paceengineering.us</a><br>Phone (530) 244-0202 Fax (530) 244-1978                                                                                 | 12/13/12<br><br>DVC/ALK |
| RD3489-13 | Travel Center Truck Stop<br>Proposed Waste Water Plant Tanks<br>Knighton Road<br>Redding, CA                                        | PACE Engineering<br>1730 South Street<br>Redding, CA 96001<br>Contact: Rick Bowser / <a href="mailto:rbowser@paceengineering.us">rbowser@paceengineering.us</a><br>Tom Warnock / <a href="mailto:twarnock@paceengineering.us">twarnock@paceengineering.us</a><br>Phone (530) 244-0202 Fax (530) 244-1978 | 04/22/13<br><br>DVC/ALK |
| RD3597-14 | Proposed 0.5 MG Water Tank<br>Keswick Water System Improvement Project<br>– PACE Work Order #11<br>Shasta County Service Area No.25 | PACE Engineering<br>1730 South Street<br>Redding, CA 96001<br>Contact: Tom Warnock<br>Phone (530) 244-0202 Fax (530) 244-1978                                                                                                                                                                            | 01/06/14<br><br>ALK/DVC |
| RD3762-14 | Proposed Yreka Water System Improvements<br>North Well & North Street<br>Booster Pump Station<br>Yreka, CA                          | PACE Engineering, Inc.<br>1730 South Street<br>Redding, CA 96001<br>Contact: Paul Reuter, PE<br>Managing Engineer<br>Office (530) 244-0202 Fax (530) 244-1978<br>Email: <a href="mailto:preuter@paceengineering.us">preuter@paceengineering.us</a>                                                       | 12/04/14<br><br>DVC/ALK |

|           |                                                                                                                                     |                                                                                                                                                                                                                        |                     |
|-----------|-------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| RD3781-15 | Lakeport Wastewater Improvements<br>Option 2 – Directional Drilling<br>Westside Park Road<br>Lakeport, CA<br><br>(Work Order No.12) | PACE Engineering<br>1730 South Street<br>Redding, CA 96001<br>Contact: Scott Clowser<br>Email: <a href="mailto:sclowser@paceengineering.us">sclowser@paceengineering.us</a><br>Phone (530) 244-0202 Fax (530) 244-1978 | 01/12/15<br><br>ALK |
| RD4180    | Woodridge Water Project<br>Tank & Pumping System Replacement<br>PACE Work Order No. 17                                              | PACE Engineering<br>1730 South Street<br>Redding, CA 96001<br>Contact: Garrett Hattenhauer<br>Cell:<br>Email: g.hattenhauer<br>Office (530) 244-0202 Fax (530) 244-1978                                                | 10/28/16<br><br>ALK |
| RD4282    | GE – East Quincy CSD Wastewater<br>Treatment Plant Improvements<br>Quincy, California                                               | PACE Engineering<br>1730 South Street<br>Redding, CA 96001<br>Contact: Garrett Hattenhauer<br>Phone: 530-244-0202<br>Email: <a href="mailto:ghattenhauer@paceengineering.us">ghattenhauer@paceengineering.us</a>       | 04/28/17<br>ALK     |
| RD4301    | GE – City of Mount Shasta<br>Proposed Tank 1 & Roseburg Water System<br>Improvements<br>Siskiyou County, California                 | PACE Engineering<br>1730 South Street<br>Redding, CA 96001<br>Contact: Grant Maxwell<br>Phone: 530-244-0202<br>Email: <a href="mailto:gmaxwell@paceengineering.us">gmaxwell@paceengineering.us</a>                     | 06/08/17<br><br>ALK |

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| RD4324 | Burney Water District Wastewater Collection & Treatment Improvement Project                                                                                              | <p>PACE Engineering<br/> 1730 South Street<br/> Redding, CA 96001<br/> Contact: Laurie McCollum, P.E.<br/> Phone: 530-244-0202<br/> Fax: 530-244-1978<br/> Email: <a href="mailto:lmccollum@paceengineering.com">lmccollum@paceengineering.com</a></p>        | 07/12/17<br><br>ALK |
| RD4349 | Geotech Services – City of Yreka<br>Proposed Water Supply & Storage<br>Improvements Project<br>Lower Humbug & Shasta Belle Tanks<br>Yreka, California                    | <p>PACE Engineering<br/> 1730 South Street<br/> Redding, CA 96001<br/> Contact: Garrett Hattenhauer<br/> Office: (530) 244-0202<br/> Fax: (530) 244-1978<br/> Email: <a href="mailto:ghattenhauer@paceengineering.us">ghattenhauer@paceengineering.us</a></p> | 08/10/17<br><br>ALK |
| RD4428 | Proposed Wastewater Project<br>Lewiston Wastewater Treatment Plant & Lift<br>Station<br>Lewiston Road & Trinity Dam Boulevard<br>Lewiston, CA<br>(PACE Job No. 2399.05). | <p>PACE Engineering<br/> 1730 South Street<br/> Redding, CA 96001<br/> Contact: Tom Warnock<br/> Office: (530) 244-0202<br/> Fax: (530) 244-1978<br/> Email: <a href="mailto:twarnock@paceengineering.us">twarnock@paceengineering.us</a></p>                 | 01/05/18<br><br>ALK |
| RD4350 | Geotech Services – City of Dunsmuir<br>Proposed Downtown Tank Relocation<br>Siskiyou County, California                                                                  | <p>PACE Engineering<br/> 1730 South Street<br/> Redding, CA 96001<br/> Contact: Garrett Hattenhauer<br/> Office: (530) 244-0202<br/> Fax: (530) 244-1978<br/> Email: <a href="mailto:ghattenhauer@paceengineering.us">ghattenhauer@paceengineering.us</a></p> | 08/10/17<br><br>ALK |

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| RD4456 | GE - Clear Creek Community Services<br>District Water System Improvement Project<br>(APN: 123-020-27-11 )<br>3 <sup>rd</sup> Street<br>Westwood, CA | PACE Engineering, Inc.<br>1730 South St.<br>Redding, CA 96001<br>Contact: Tom Warnock<br>Phone: 530-244-0202<br>Email: <a href="mailto:twarnock@paceengineering.us">twarnock@paceengineering.us</a><br>Contact: Scott Clowser<br>Email: <a href="mailto:sclowser@paceengineering.us">sclowser@paceengineering.us</a> | 02/26/18<br><br>ALK |
| RD4461 | GE – Water System Improvements<br>East Lennox Street<br>Yreka, California                                                                           | PACE Engineering, Inc.<br>1730 South St.<br>Redding, CA 96001<br>Contact: Keith Krantz<br>Phone: 530-244-0202<br>Email: <a href="mailto:kkrantz@paceengineering.us">kkrantz@paceengineering.us</a>                                                                                                                   | 03/02/18<br><br>ALK |

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| VV1797-05 | Easterly Water Waste Treatment Plant<br>Elmira, CA                                                                                                   | Anselmo Services<br>4160 Suisun Valley Road #E7560<br>Fairfield, CA 94534-4016<br>Contact: Jeff Anselmo<br>P- (707) 864-0792 ext 206<br>F-(707) 864-2879                                                                                                                 | 04/20/05<br><br>DVC |
| VV2777-08 | Lake Stevens Sewer District Wastewater Treatment Plant<br>Snohomish County, CA                                                                       | Kiewit Pacific<br>5000 Marsh Drive<br>Concord, CA 94520<br>Contact: Kelly Burnett<br>Phone (925) 686-3030 Fax (925) 687-5143                                                                                                                                             | 05/27/08<br><br>DVC |
| VV3323-11 | Small Construction<br>2010 – Dec 31-2011<br>On-Call Contract<br>Boles Knoll Storage Tank                                                             | Solano Irrigation District (SID)<br>810 Vaca Valley Parkway, Suite 201<br>Vacaville, CA 95688-8709<br>Contact: Jeff Sullivan (Cell 707-249-3482)<br>Phone (707) 455-4016 Fax (707) 452-8557<br>Email: <a href="mailto:jsullivan@sidwater.org">jsullivan@sidwater.org</a> | 11/09/11<br><br>DVC |
| RD3356-12 | Elk Trail Water Improvement Project (Job No. 2310.01)<br>280,000 Gallon Water Storage Tank<br>North Side of Elk Trail East Road<br>Shasta County, CA | PACE Engineering<br>1730 South Street<br>Redding, CA 96001<br>Contact: Steve Wilson & Paul Reuter<br>Office (530) 244-0202 Fax (530) 244-1978                                                                                                                            | 03/23/12<br><br>DVC |
| VV3394-12 | Wastewater System Upgrade<br>4240 Silverado Trail<br>Napa, CA                                                                                        | Darioush Winery<br>4240 Silverado Trail<br>Napa, CA 94558<br>Contact: Larry Seaton, Sea-Con Cell (707) 974-1748<br>Sea-Con Phone (707) 320-9394 Fax (707) 320-0054<br>Email: <a href="mailto:sea-con@comcast.net">sea-con@comcast.net</a>                                | 07/16/12<br><br>DVC |

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| RD3432-12 | Rio Alto Water District<br>Proposed Wastewater Treatment<br>Plant Clarifier & Wetland /<br>Percolation Ponds<br>Lake California, Tehama County,<br>California | PACE Engineering, Inc.<br>1730 South Street<br>Redding, CA 96001<br>Contact: Tom Warnock<br>Email: <a href="mailto:twarnock@paceengineering.us">twarnock@paceengineering.us</a><br>Phone (530) 244-0202                                                                                                        | 10/29/12<br><br>DVC     |
| RD3437-12 | Proposed Reservoir Tank &<br>Booster<br>Pump Station<br>Willimas, CA                                                                                          | PACE Engineering Company<br>1730 South Street<br>Redding, CA 96001<br>Contact: John Brunemeier<br>Email: <a href="mailto:jbrunemeir@paceengineering.us">jbrunemeir@paceengineering.us</a><br>Phone (530) 244-0202                                                                                              | 12/03/12<br><br>DVC     |
| RD3439-12 | City of Yreka Wastewater<br>Treatment Plant Improvements<br>Yreka, CA                                                                                         | PACE Engineering, Inc.<br>1730 South Street<br>Redding, CA 96001<br>Contact: Paul Reuter<br>Email: <a href="mailto:preuter@paceengineering.us">preuter@paceengineering.us</a><br>Phone (530) 244-0202 Fax (530) 244-1978                                                                                       | 12/13/12<br><br>DVC/ALK |
| RD3489-13 | Travel Center Truck Stop<br>Proposed Waste Water Plant Tanks<br>Knighton Road<br>Redding, CA                                                                  | PACE Engineering<br>1730 South Street<br>Redding, CA 96001<br>Contact: Rick Bowser /<br><a href="mailto:rbowser@paceengineering.us">rbowser@paceengineering.us</a><br>Tom Warnock /<br><a href="mailto:twarnock@paceengineering.us">twarnock@paceengineering.us</a><br>Phone (530) 244-0202 Fax (530) 244-1978 | 04/22/13<br><br>DVC/ALK |
| RD3597-14 | Proposed 0.5 MG Water Tank<br>Keswick Water System<br>Improvement Project – PACE<br>Work Order #11<br>Shasta County Service Area No.25                        | PACE Engineering<br>1730 South Street<br>Redding, CA 96001<br>Contact: Tom Warnock<br>Phone (530) 244-0202 Fax (530) 244-1978                                                                                                                                                                                  | 01/06/14<br><br>ALK/DVC |

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| RD3762-14                                           | Proposed Yreka Water System Improvements<br>North Well & North Street<br>Booster Pump Station<br>Yreka, CA                           | PACE Engineering, Inc.<br>1730 South Street<br>Redding, CA 96001<br>Contact: Paul Reuter, PE<br>Managing Engineer<br>Office (530) 244-0202 Fax (530) 244-1978<br>Email: <a href="mailto:preuter@paceengineering.us">preuter@paceengineering.us</a> | 12/04/14<br><br>DVC/ALK |
| VV3768-14<br><br><b>Cross Reference<br/>VV2558M</b> | Proposed New Alum & Caustic Tank<br>Foundation & Enclosure<br>WTP – American Canyon, CA<br>(On-Call Geotechnical Services 2013-2016) | City of American Canyon/Engineering Division<br>4381 Broadway Street, Suite 201<br>American Canyon, CA 94503-9682<br>Contact: Mark Billings Cell (707) 333-4040<br>Phone (707) 647-4587                                                            | 12/03/14<br><br>DVC     |
| VV3821-15                                           | Rinconada Water Treatment Plant<br>Los Gatos, CA                                                                                     | Kiewit Infrastructure West Inc.<br>4650 Business Center Drive<br>Fairfield, CA 94534<br>Contact: John Munsey / Phone (707) 439-7300<br>Email: <a href="mailto:john.munsey@kiewit.com">john.munsey@kiewit.com</a>                                   | 03/11/15<br><br>DVC     |
| VV3936-15                                           | GE-Proposed Water Tank Replacement<br>at McIntyre Rand<br>St. Johns Mine Road<br>Vallejo, CA                                         | Greater Vallejo Recreation District<br>395 Amador Street<br>Vallejo, CA 94590<br>Contact: Tom McNair<br>Ph (707) 373-7056 / Email: <a href="mailto:tmcnair@gvrd.org">tmcnair@gvrd.org</a>                                                          | 09/24/15<br><br>DVC     |
| RD4121                                              | Water Tank Replacement<br>Lewiston Park Mutual Water Company (LPMWC)<br>Trinity Dam Boulevard<br>Lewiston, CA                        | PACE Engineering<br>1730 South Street<br>Redding, CA 96001<br>Contact: Mr. Tom Warnock<br>Phone: (530) 244-0202 Fax: (530) 244-1978<br>Email: <a href="mailto:twarnock@paceengineering.us">twarnock@paceengineering.us</a>                         | 07/25/16<br><br>DVC     |

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| VV4149 | GE –Two Proposed Maine Prairie Pump Stations along Ulatis Creek: Pump Station 1: @ Ulatis Creek & Hwy 113; Pump Station 2: @ Ulatis Creek & Brown Road Dixon, CA | Maine Prairie Water District<br>887 North Irwin Street<br>Hanford, CA 93232<br>Contact: Roger Reynolds (w/ Summit Engineering, Inc.)<br>Phone: 559-582-9237<br>Email: <a href="mailto:reynolds@summerseng.com">reynolds@summerseng.com</a> | 09/01/16<br><br>DVC |
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**Responsible Personnel**



**David V. Cymanski, PE, GE, Principal Engineer CA – PE # 51421; GE # 2585**

Mr. Cymanski received his Bachelors of Science degree in Civil Engineering at California State University at Chico. David received his Geotechnical Engineering licenses for California and is currently licensed as a Professional Engineer in both California and Oregon. He has over 28 years of professional experience in the geotechnical field including laboratory materials testing and inspection. David's responsible charge is geotechnical, geologic, environmental, materials testing and special inspection services. David supervises all exploration and design activities including site evaluation, grading control, underground utility placement, pavement design, foundation design, distress analysis, slope stability and earth movements. In addition, David supervises company special inspection activities for reinforced and pre-stressed concrete, structural masonry, structural steel and welding. David has extensive and varied experience in the engineering field working on federal, local municipalities, PG&E, commercial and residential projects. His ability to analyze and recommend geotechnical situations and projections make him essential to any geotechnical project



**Andrew L. King, PE, Principal Engineer**

**CA – PE # 83139**

Mr. King received his Bachelors of Science degree in Civil Engineering at Oregon Institute of Technology. He has over 15 years of professional experience in the geotechnical field including laboratory materials testing and inspection. He has performed geotechnical explorations, slope stabilities and distressed structure inspection. Andy has managed projects from the design level through construction inspection. Typical tasks include proposal and project scoping, geotechnical consultation, field exploration and sampling, field density testing and special inspections. Projects include residential, commercial, public works and roadways.

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**2018 CURRICULUM VITAE / RESUME**  
**DAVID V. CYMANSKI, P.E., G.E.**

**Education:**

1990 - Bachelor of Science in Civil Engineering  
California State University at Chico

**Affiliations:**

American Society of Civil Engineers, Geo Institute (ASCE)  
California Geotechnical Engineers Association (CalGeo)  
California Council of Testing and Inspection Agencies (CCTIA)  
ACI, PTI, ACEC & ASTM

**Registrations:**

1994 - California Registered Civil Engineer, C 51421  
2003 - California Registered Geotechnical Engineer, GE 2585  
2008 - Oregon Registered Professional Geotechnical Engineer, P.E. #80732

**Certifications:**

1990 - Certified Special Inspector, Reinforced Concrete, ICC #1064377-88  
1990 - ACI Concrete Field Testing Technician – Grade I, #00947884

**EXPERIENCE**

1996 to Present      **MATERIALS TESTING, INC. /KC ENGINEERING CO., Vacaville & Redding, CA**

- Owner, President & Principal Engineer
- Responsible charge of geotechnical engineering, materials testing, special inspection and environmental consulting.
- Manage and perform subsurface investigation and geotechnical design activities.
- Manage Environmental Site Assessments.
- Perform geotechnical Expert Witness services; construction materials evaluations, and forensic studies of distressed structures, concrete foundations, pavements, retaining walls, drainage & landslides.
- Engineering oversight and compaction testing for all grading, excavation and earthwork filling operations.
- Evaluate and test subsurface ground improvement construction & underground utility backfill placement.
- Analyze and recommend pavement designs including lime & cement modification and stabilization.
- Foundation design and review including piling, drilled piers, caissons, footings & post-tension slabs.
- Provide soil criteria and analysis of soil nail, tie-back, MSE, CMU & conventional retaining walls.
- Evaluate and analysis of global slope stability, landslides & earth movement.
- Bridge, dams and canal studies.
- Responsible Engineer for **MTI-KCE** laboratory and special inspection services in soils, reinforced concrete, hot mix asphalt, post-tensioning, structural masonry, reinforcing, high-strength bolting, structural steel welding, non-destructive examination and fireproofing.

1989 to 1996      **TERRASEARCH, INC., Fairfield & Dublin, CA**

- Project Engineer & Staff Engineer.
- Perform geotechnical engineering investigations for commercial, industrial, residential and public works.
- Perform compaction testing of earthwork operations.
- Perform special inspections of reinforced and pre-stressed concrete, structural masonry & structural steel.
- Supervise engineering technicians and laboratory during grading and foundation operations.
- Review civil and structural plans for geotechnical conformance.
- Evaluate distressed structures and perform forensic investigations of earthwork projects.

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[www.mti-kcgeotech.com](http://www.mti-kcgeotech.com)

**2018 CURRICULUM VITAE / RESUME**  
**ANDREW L. KING, P.E.**

**Education:** 2002 - Bachelor of Science in Civil Engineering  
Oregon Institute of Technology, Klamath Falls, Oregon

**Affiliations:** American Society of Civil Engineers (ASCE)  
ASTM

**Certifications:** California Registered Civil Engineer, C 83139  
ACI Concrete Field Testing Technician – Grade 1 #020492  
Licensed Nuclear Gauge Operator 9/26/02 & RSO Certified 9/22/10  
OSHA 10-hour Construction Safety & Health #002305476

**EXPERIENCE**

- 1/10 - Present      **MATERIALS TESTING, INC., Redding, CA**
- Owner, Corporate Secretary, Principal Engineer
  - Responsible charge of engineering, materials testing, special inspection
  - Manage subsurface exploration and geotechnical design activities including report preparation
  - Perform site evaluations & forensic studies of distressed structures, pavements and landslides
  - Engineering oversight for all grading, excavation and earthwork filling operations
  - Evaluate underground utility placement and construction
  - Analyze and recommend pavement designs including lime and cement stabilization
  - Foundation design & review including piling, drilled piers, caissons, footings and post-tension slabs
  - Evaluate and analysis of global slope stability, landslides and earth movement
  - Bridge, dams and canal studies
  - Review civil and structural plans for geotechnical conformance
  - Responsible Engineer for **MTI-KCE** laboratory and special inspection services in soils, concrete, asphalt, post-tensioning, masonry, reinforcing, high-strength bolting, welding, non-destructive testing and fireproofing
- 8/02 – 1/10      **MATERIALS TESTING, INC., Redding, CA**
- Project Engineer & Staff Engineer
  - Perform geotechnical engineering investigations for commercial, residential and public works
  - Geotechnical report preparation
  - Review civil and structural plans for geotechnical conformance
  - Perform geotechnical evaluation and forensic studies of distressed structures
  - Analysis of global slope stability, landslides and earth movement
  - Accreditation contact for AMRL & CCRL with respect to aggregate and concrete
- 6/01 - 9/01      **KC ENGINEERING, Vacaville, CA**
- Staff Engineer
  - Perform geotechnical engineering investigations for commercial, residential and public works
  - Prepared job proposals
- 6/99 - 9/99      **MATERIALS TESTING, Inc., Redding, CA**
- Laboratory Technician
  - Performed laboratory testing for aggregate, concrete and soil