Olivehurst Public Utility District

Agenda Item Staff Report

Meeting Date: 06/20/24

Item description/summary:

Approve Hydrogeologic consulting services associated with the design and construction support services for OPUD Well #35, presented by Peterson Brustad Inc. (PBI), Luhdorff & Scalmanini, Consulting Engineers (LSCE) & Affinity Engineering.

Olivehurst Public Utility District (OPUD) is looking to get into a design/consulting services/Construction Services for a future well to be capped for use in the Plumas Lake Water System. There is a development currently underway, RIO DEL ORO V17-V20. As part of this development, a well site was dedicated in order to supply additional water to the region. It's vital we begin the hydrologic study and install the well prior to all the homes being built due to environmental impacts it will have if the homes are built prior to the well. The piping from the well site to the Plumas Lake Treatment Plant is already in place per developer requirements, into Plumas Lake Treatment Plant.

Fiscal Analysis:

Cost of Hydrogeologic Services = $107,092
Cost of building well = $750,000 +/-

Employee Feedback

n/a

Sample Motion:

Move forward with contract for Services

Prepared by: Swarnjit Boyal, Public Work Engineer

EXHIBIT A – Contract Proposals

June 7, 2024

Mr. Jim Carson, P.E.
Affinity Engineering
3433 Mardi Gras Court
Rancho Cordova, CA 95670

Dear Mr. Carson:

Subject: Olivehurst Public Utility District Well No. 35
Hydrogeologic Services Proposal

In response to your request, Peterson Brustad Inc. (PBI) and Luhdorff and Scalmanini, Consulting Engineers (LSCE) are pleased to provide Affinity Engineering with the following scope of work to provide hydrogeologic consulting services associated with the design and construction support services for the Olivehurst Public Utility District (OPUD) Well No. 35. PBI will provide project management and well design services in conjunction with LSCE whose primary role will be field inspection and on-site hydrogeologic services.

This scope is for the downhole (well) portion of this project only. This scope does not include any site-civil engineering work associated with the future pump station.

SCOPE OF WORK

The scope of work for this project includes the following tasks: (1) Project Coordination; (2) Preliminary Well Design, Technical Plans and Specifications (3); Exploratory Drilling; (4) Final Well Design; (4) Production Well Construction Support Services; & (6) Well Summary Report. These tasks are described in more detail below.

Task 1 – Project Coordination — PBI $7,360 / LSCE $2,976

PBI will provide project coordination and will coordinate as needed with the selected Contractor and with OPUD during all critical stages of the project. PBI will be available to attend meetings via phone or Zoom throughout the duration of the project. LSCE will be available for on-site meetings.

Task 2 – Preliminary Well Design, Technical Plans, and Specifications — PBI $9,200 / LSCE $860

PBI and LSCE will prepare a preliminary well design based upon the data from OPUD Well Nos. 31, 32, and 34. The preliminary well design will be used to prepare the project specifications for soliciting competitive bids for test hole drilling and production well construction and testing. LSCE will provide a preliminary well profile figure. It is assumed that Affinity Engineering will provide the Site Plans and Plan Sheets for this project, with support from both PBI and LSCE. PBI will provide bid support services, including answering technical questions, evaluating bids, and recommending contract award.

Deliverables:

1) 95% & 100% Technical Plans & Specifications for Well 35 to be incorporated into OPUD's standard front-end contract documents

Task 3 – Exploratory Drilling **PBI $1,840**
LSCE $15,648

Based upon data from other wells in the area, PBI will select the target depth of exploration. The drilling contractor will obtain the necessary permit(s) to conduct the work, and all work will be conducted in conformance with all local and state regulations.

During test hole drilling, formation samples will be collected a minimum of every 10 feet and will be lithologically logged by LSCE's experienced geologists. Geophysical surveys of the borehole will include spontaneous potential, resistivity (single-point, 16-inch normal, and 64-inch normal), and natural gamma to delineate the aquifer units. Following geophysical surveys, LSCE will prepare a lithologic log of the borehole that describes the geologic formations encountered. Following the test hole assessment, the borehole will be destroyed by filling it with cement grout in accordance with local and state well standards.

Deliverables:

1) Test hole geophysical survey and lithologic log

Task 4 – Final Well Design **PBI $1,840**
LSCE $2,180

PBI will then use the formation samples and the geophysical logs from the test hole to estimate potential water production rates from the water producing zones. From this assessment, PBI will prepare a final well design that includes conductor casing size and depth, gravel envelope size, well screen slot size, and the location of annular seals.

Task 5 – Production Well Construction Support Services **PBI $3,680**
LSCE $31,424

PBI senior hydrogeologist will be available 24/7 to provide project management during all critical path well drilling, construction, development, and testing portions of the project. This task includes reviewing construction submittals and making any final "adjustments" to the well design based upon the production well's borehole data. The LSCE team will provide the following services:

- Attending the on-site pre-construction meeting with the selected Contractor
- Reviewing equipment, site configuration, and materials
- Checking drilling fluid properties, formation samples, and geophysical logs
- Providing design modification suggestions, if necessary, for changed lithology in the production borehole
- Observing installation of well casing, screen, gravel envelope, and seals
- Checking well development progress and modifying the program as necessary to achieve optimal well efficiency

- Witnessing and recording data from well pumping tests and SCADA water level data from Wells 31, 32, and 34 during the pumping of Well 35.
- Witnessing all well acceptance testing and making recommendations for punch list work items for final acceptance

Task 6 – Well Summary Report **PBI $5,520**
LSCE $4,564

Following well construction and testing, PBI and LSCE will assemble all pertinent well construction records and provide this information in a written report. The report will include a summary of the project, daily field reports, an inventory of the materials installed, an as-built well profile, well pumping test plots, recommended well capacity, pump setting, geophysical surveys, field data, laboratory water quality reports, and our assessment of the well acceptance testing. After all work by the Contractor has been satisfactorily completed, PBI will prepare a letter recommending acceptance of the well.

Deliverables:

1) Well Summary Report

PROJECT COST

The total cost to perform the tasks described above would be $29,440 for PBI and $57,652 for LSCE, for a grand total of $87,092. This total includes outside services and direct expenses. Outside services water quality analysis of the new well was not included in this total as per your request.

All billing will be made on a Time and Materials (T&M) basis in accordance with each firm's Schedule of Fees (attached). As requested, each firm will provide invoices to Affinity directly.

We look forward to working with you and OPUD on this project. If you have any questions or require additional information, please call me at (916) 417-7687.

Sincerely,

Lawrence H. Ernst, PG, CEG, CHG
PBI Senior Hydrogeologist

Karl Brustad, PE
PBI Principal

Eddy Teasdale, PG, CHG
LSCE Principal Hydrogeologist

AFFINITY
ENGINEERING

June 17, 2024

Mr. Swarnjit Boyal
Olivehurst Public Utility District
1970 9th Avenue
Olivehurst, CA 95961

Subject: Well #35 – Well Construction Project Management and Site Plan

Affinity Engineering Inc. (Affinity) is pleased to provide a proposal to Olivehurst Public Utility District (OPUD) to provide Engineering Support Services to assist in the construction of the new Well #35 (Well). The new Well is located within OPUD's Plumas Lake Water System (Water System) between OPUD's Plumas Lake Water Treatment Plant and Well #34.

This proposal includes the Scope of Services, Deliverables, Assumptions, and Fee Estimate.

Scope of Services

The scope of services includes the following:

1. Project Management

   Affinity will provide project management services for Well Construction Design that are being proposed by Peterson Brustad Inc. and Luhdorff and Scalmanini Consulting Engineers (Consultant) as per their proposal dated June 7, 2024.

2. Design

   Affinity will provide the Site Plan showing the well location Division of Drinking Water (DDW) radius requirements. Any easements or lot restrictions that the Developer will be required that are associated with the new Well will be coordinated by OPUD.

3. Bid Support

   Affinity will coordinate the Consultant's Bid Support Services, responses to Contractor questions, and Addenda that is required during bidding of the Well Construction.

Deliverables

- Site Plan showing the well location and 50-ft, 100-ft, and 150-ft radiuses.
- Electronic Copy of Site Plan (PDF Format and AutoCAD)

Assumptions:

The following are the assumptions that are associated with this project:

- The developer will provide the development drawings in AutoCAD that show the Well Site.

Fee Estimate

The total estimated fee to provide the scope of services is $20,000 and is based on a time and materials, not to exceed without prior approval from OPUD. The project will be billed at $200/hour.

Please let me know if you have any questions,

James D. Carson, P.E.
Affinity Engineering Inc.
(916) 613-7582

EXHIBIT B – WELL SITE LOCATION

VILLAGE 17
VILLAGE 18
VILLAGE 19
VILLAGE 20
0 50 100 200
SCALE: 1"=100'
ALGODON ROAD
PLUMAS LAKE BOULEVARD
RIO DEL ORO WAY
TRIBUTARY WAY
WHITE GOLD WAY
WHITE GOLD COURT
BROAD ACRES WAY
MINERS PEAK WAY
MOTHER LODE WAY
SILVERADO WAY
RIM ROCK WAY
LOST CREEK RANCH DRIVE
SILVERSTONE WAY
LAVA RIDGE COURT
HESPIAN DRIVE
PARK
LOT A
LOT B1
LOT B2
LOT C
LOT F
PLUMAS LAKE WATER TREATMENT PLANT
20' PUE EASEMENT TO BE DEDICATED TO OPUD
4" IRRIGATION SERVICE STUB
2" IRRIGATION SERVICE
OPUD WELL SITE NO. 35
OPUD WELL SITE NO. 34
100'x38' ACCESS AND PIPELINE EASEMENT TO BE DEDICATED TO OPUD.

WATERLINE NOTES TO CONTRACTOR

1. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING AGENCY AND MANUFACTURER STANDARDS FOR ALL JOINT DEFLECTIONS.
2. ALL WATERLINE FITTINGS FOR DISTRIBUTION PIPES 12 INCHES & SMALLER IN DIAMETER SHALL BE RESTRAINED BY DEVICES AND/OR THRUST BLOCKS

REGISTERED PROFESSIONAL ENGINEER No. 49154 CIVIL STATE OF CALIFORNIA
9/16/2022

No.	Description	Init	Date	By	Date
		Engineer		AGENCY APPROVAL	

DATE: SEPTEMBER 2022
SCALE: AS SHOWN
DRAWN BY: STAFF
DESIGNED BY: GZ
CHECKED BY: PH

MacKAY & SOMPS
ENGINEERS PLANNERS SURVEYORS

PLAN FOR THE IMPROVEMENT OF
RIO DEL ORO VILLAGES 17, 18, 19 & 20
WATER DISTRIBUTION PLAN, NOTES & DETAILS
YUBA COUNTY CALIFORNIA

COUNTY PUBLIC WORKS ACCEPTANCE BY:
Daniel W. Peterson, Public Works Director — Date 9/19/2022

SHEET 4 OF 33
PROJECT NO. 7889-01