

LOS BANOS WELL NO. 16 TEST WELL



City of
Los Banos
At the Crossroads of California

ADDENDUM NO. 1

February 15, 2022

WELL NO. 16 TEST WELL

1. This Addendum forms a part of the Bidding Documents and will be incorporated into the Contract Documents, as applicable. All other conditions of the Contract Documents remain unchanged. The following changes, additions, or deletions as set forth herein shall apply to the Contract Documents and shall be made a part thereof and shall be subject to all the requirements thereof as through originally shown and/or specified.
2. Bids shall be submitted in accordance with this Addendum. All Bidders **MUST** acknowledge receipt of this Addendum by signing and returning this Addendum with your bid.
3. The Bid Due Date has been extended to March 8, 2022 at 2:00 p.m.

Proposed timeline of events associated with the awarding of bid:

Release of Advertisement for Bid		January 25, 2022
Pre-Bid Meeting – On Site - Mandatory	10:00 a.m.	February 10, 2022
Deadline to Submit Questions/Clarifications	5:00 p.m.	February 23, 2022
Addendum/Questions/Clarifications posted	5:00 p.m.	February 25, 2022
Bid Opening	2:00 p.m.	March 8, 2022
City Council Considers Bid	6:00 p.m.	April 6, 2022 (tentative)
Issuance of a Notice to Proceed	On or before:	April 7, 2022 (tentative)
Construction to Begin	On or before:	April 8, 2022 (tentative)

City of Los Banos

Firm Name: _____

By: _____

Title: _____

Date: _____

By: Jelene de Melo
Administrative Coordinator

LOS BANOS WELL NO. 16 TEST WELL

Revisions to Plans and Specifications

The replacement referenced below and in ATTACHMENT 1 shall become part of the Contract Documents.

Item No. 1: *Specification Section 33 21 00 – Well 16 Casing Hammer Test Hold Drilling replaced with Section: 33 21 00 – Mud Rotary Test Well Drilling and Sampling.*

LOS BANOS WELL NO. 16 TEST WELL

ATTACHMENT 1

SECTION 33 21 00

TEST WELL DRILLING AND SAMPLING

PART 1 GENERAL

1.1 WORK INCLUDED

- A. The work consists of drilling and destroying one (1) test well to a depth of up to 320-feet or into the Corcoran Clay using the reverse circulation method of drilling and collecting zone specific water samples.
- B. The top of the Corcoran Clay is projected to be about 280 to 310 feet deep at the site.
- C. The purpose of the test well is to allow collection of drill cuttings, geophysical logging of the hole upon completion to total depth, and collection of depth zone specific water samples for water quality testing purposes, as described in these Specifications.
- D. Upon completion of drilling and sampling of the test well, the Contractor shall properly abandon the bore hole.

1.2 SUBMITTALS

- A. The Contractor shall prepare a final report containing, as a minimum, the following information for the test well: Driller's log, electric log, deviation log (geophysical logging to be performed by a subcontractor approved by the Engineer and paid for by Contractor), and sieve analysis results for up to eight (8) cutting samples as selected by the Engineer (to be paid for by Contractor).

1.3 STANDARDS AND PERMITS

- A. The test well shall be drilled in accordance with the Merced County Water Well Ordinance, the California Water Well Standards, and as described in these Specifications. The Contractor shall obtain, and pay for, a well drilling permit from Merced County, and shall report the results of the drilling to the California Department of Water Resources. In addition, the Contractor shall conform to State and County requirements for destruction of the test well.

1.4 EXPERIENCE AND LICENSE

- A. The test well shall be drilled by a qualified well driller with experience in construction of public water supply wells.
- B. The Contractor shall have at least 5 years of experience in drilling public water supply wells to a depth of at least 1,000 feet using the drilling and sampling methods as specified. The Bidder shall submit to the Owner and Engineer three references for whom reverse rotary drilling of public supply wells, as described in these Specifications and to at least these depths, was performed and for whom water samples were collected from the pilot holes as specified herein, if so requested prior to contract award. In listing these references, the Bidder shall give the name of the

person or firm for whom the work was performed, the address and telephone number at which that person or firm can be contacted, and a description of the work performed. Determination that the experience is inadequate shall be grounds for rejection of the bid.

- C. Well driller must possess a C-57 Well Drillers License, valid in the State of California.

1.5 ORDER OF WORK

- A. Upon completion of drilling the test well, Contractor shall furnish copies of the drilling log, the electric log (e-log), the deviation log and suitable bagged drill cutting samples for review by the Engineer.
- B. Engineer shall identify zone depths for sampling. Contractor shall sequentially construct zones and develop each zone for sampling.
- C. The Contractor shall then fill and properly abandon the test well after zone sampling and testing are complete.

1.6 WORK TO BE PERFORMED BY THE CONTRACTOR

- A. All drilling and other work incidental to the test well shall be performed by the Contractor. The Contractor shall drill the test well by the reverse rotary method.
- B. The Contractor will prepare and maintain access to the work area as well as provide sufficient room for the efficient operation of his equipment within the project limits. Contractor shall provide temporary fencing to enclose the work area and all stored equipment. The Contractor will be held as having examined the drilling site and access roads in order to acquaint himself with local conditions, as no allowance will be made after the bid has been accepted for any errors or omissions made by the Contractor due to site conditions.
- C. The Contractor shall diligently pursue all work to completion. Upon completion of the well, the Contractor shall level the drill site, and remove all materials incidental to the drilling operations.
- D. The Contractor shall, at his own expense, furnish all equipment, material (including lost circulation materials), supplies, and personnel necessary to perform the work (including, but not limited to, drilling rig, water truck, a crew comprised of experienced drillers, and helpers).
- E. The Contractor shall pay any federal, local, or state taxes assessed or levied on account thereof, in accordance with the practices generally acceptable for the nature of work to be performed under this Contract.
- F. The entire cost of furnishing, transporting, unloading, hauling, handling, sorting, and caring for all equipment, materials, tools, and supplies, and of removing same from the site of the work as hereinafter specified, shall be included in prices bid in the proposal for the work for which the materials are required. The drilling shall be done with well drilling equipment of proper type and size and in good working condition so that the work can be performed without interruption arising from defective or improper

equipment. All materials that will become a part of the completed work shall be new. All equipment, materials, tools, and supplies not a part of the completed well shall remain the property of the Contractor and shall be removed from the site upon completion of the work. All materials to be stored shall be stored at the drilling site within a fenced enclosure.

1.7 SECURITY

- A. The work area shall be fenced with a temporary 6-foot-high chain link fence during drilling and all other operations. The fence shall be constructed and maintained in good condition throughout the course of the work so as to exclude unauthorized persons and animals from the well site. The fenced area shall be posted with "NO TRESPASSING" signs visible from all angles of approach.
- B. The Contractor shall provide, at all times during the duration of the Contract, suitable means of protecting the test well from the entrance of foreign objects.

1.8 NOTIFICATION

- A. The Contractor shall give notice to the Engineer of specific operations as follows:
 - 1. At least 72 hours advance notice of start of drilling operations at the test well site.
 - 2. At least twelve (12) hours advance notice of test well destruction.
- B. Upon completion of the test well, the Engineer shall have up to fourteen (14) calendar days to review the results of the geologic sampling and logs, where after the Engineer shall instruct the Contractor to proceed with destroying the test well.

1.9 BORE HOLE ABANDONMENT

- A. In the event the Contractor shall abandon a well because of loss of tools or other causes which are his responsibility, or if the well fails to conform to these Specifications and the Contractor is unable to correct the condition at his own expense or negotiate a mutually-acceptable cost reduction for deviations from the Plans and Specifications, it shall be considered an abandoned well, and the Contractor shall immediately start a test well at a nearby location designated by the Engineer. The Contractor shall destroy the old test well by filling with sand-cement grout completely from bottom to top and in conformance with regulations of the Merced County Water Well Ordinance. Contractor shall notify Merced County Health Department and arrange for Health Department inspector to witness sealing.

PART 2 PRODUCTS

2.1 CONDUCTOR CASING

- A. At the Contractor's discretion, a temporary conductor casing may be installed for stability. The conductor casing shall be manufactured in accordance with the latest edition of ASTM A252, Grade 2, and the following conditions:
 - 1. The diameter shall be 20-inches minimum (nominal), and the wall thickness shall be at least 0.25-inches
 - 2. The casing sections shall be factory assembled in not less than 20-foot lengths.

2.2 NEAT CEMENT OR SAND CEMENT GROUT

- A. Sand cement grout shall be composed of not more than two parts by weight of sand and one part of Portland Type II cement to 4.5 to 6.5 gallons of clean water per sack of cement.

2.3 DRILLING FLUID

- A. Water alone shall be employed as a drilling fluid in the test well unless prior approval is given by the engineer.
- B. The Contractor shall dispose of surplus drilling fluid in a manner acceptable to the Owner and Engineer and in compliance with local, state and federal laws and regulations. The Contractor is responsible for transporting and disposing well development and test water offsite. The Contractor's bid proposal shall include all costs associated with providing any required discharge piping to an approved discharge site.
- C. Water used for this project will be supplied by the Owner from a nearby City hydrant (likely near Ortigalita Road and Sandra Street). The Contractor shall furnish his own equipment for transporting and applying water. Such equipment shall meet the approval of the Engineer. The Contractor shall obtain a backflow prevention device with a flow meter from the City and pay the City's refundable deposit. The Contractor shall pay for water used at the completion of the project at the City's current rate.

PART 3 EXECUTION

3.1 COMMUNICATIONS WITH CONSTRUCTION SUPERVISOR

- A. A fluent English-speaking supervisor shall be on-site at all times work is occurring on the work site.

3.2 HOURS OF OPERATION

- A. Drilling operations may proceed continuously, 24 hours per day, as approved by the Engineer. When work is expected to occur between the hours of 7 pm and 7 am the

Contractor shall notify all residents within 500 feet of the impending construction activity.

3.3 *INSTALLING CONDUCTOR CASING*

- A. A 20-inch diameter (minimum) conductor casing shall be installed to a depth of at least 50 feet below natural grade. The conductor casing shall be set in a hole not less than 26 inches in diameter. It shall be securely anchored at the ground surface to prevent falling.
- B. Care shall be taken to install the conductor casing plumb. Centralizers shall be welded to the conductor casing at intervals not to exceed 20 feet to center the casing in the bore. The centralizers shall be constructed of $\frac{3}{8}$ -inch-thick by 2-inch-wide steel strips so shaped as to form a guide approximately 2.5 inches from the casing well.
- C. Each strip shall provide at least 1-foot length of bearing surface at the bore interface. A minimum of three strips shall be provided at each circumferential location for centering the casing. Centralizer strips shall be located on the same vertical alignment to minimize interference with placing the sealing material as specified.
- D. After the conductor casing has been installed, the annular space between the conductor casing and the bore hole shall be sealed with cement grout. The cement grout shall be placed by pressure grouting with the use of a tremie pipe. The cement grout shall be placed through the tremie pipe, and the pipe shall be gradually withdrawn as the cement rises in the annulus. The quantity of cement grout placed in the annulus shall not be less than the computed volume of the annulus. A quantity less than the computed value will be judged as an indication of voids, and measures shall be taken by the Contractor to eliminate the apparent voids. Upon completion of cementing, cement shall be visible above the surface of the ground outside the conductor casing. After cementing operations are completed, the cement shall be left undisturbed for a period of not less than 24 hours. Contractor shall notify Merced County Health Department prior to placing the grout seal.

3.4 *METHOD OF DRILLING*

- A. The test well shall be drilled by the reverse rotary method of drilling.

3.5 *MUD PIT DESIGN*

- A. The mud pit recirculation sump shall have a capacity no less than 3 times the expected volume of the completed hole. The compartment layout shall provide a maximum removal of cuttings by settling from the circulating fluid.
- B. The mud pit sump shall be above ground. Excavation of a mud pit will not be allowed.

3.6 *TEST WELL DRILLING*

- A. The standard reverse rotary method will be used to drill the test well to an anticipated depth of up to 320 feet. The exact depth to which the test well shall be drilled will be determined by the Engineer. The Contractor shall be responsible for keeping the hole open to the total depth of the hole. The hole will be a minimum of fifteen inches in

diameter. The purpose of the test well is to allow collection of drill cuttings and geophysical logging of the hole upon completion to the total depth. In addition, the test well will be used to obtain depth zone specific water samples for water quality testing.

- B. Samples of drill cuttings from the bottom of the conductor casing to total depth shall be collected at changes of strata or at 10-foot depth intervals, whichever is less, and placed in separate bags or containers. These samples shall be plainly marked with the depth.
- C. The Engineer shall select up to eight cutting samples for sieve analysis to allow final design of slot size and gravel pack for the eventual production well. Contractor shall be responsible for having the sieve analyses performed, at the Contractor's expense.
- D. An electric log and a deviation log will be run in the borehole, and it is estimated that two hours will be required for the logging. The Contractor will be responsible for retaining a logging subcontractor, at the Contractor's expense, to perform the geophysical logging. Contractor shall remain at the site during logging and cooperate with the logger in running the logging tools in the hole. All work shall conform to the Contract plans and specifications, the County of Merced, the State of California Standard Specifications, and local and State permits and ordinances for drilling of test holes and wells.

3.7 DISPOSAL OF SURPLUS DRILLING FLUID AND CUTTINGS

- A. The Contractor shall dispose of the surplus drilling fluid and cuttings in a manner acceptable to the Owner. Drill cuttings shall be maintained in a confined area and be disposed of at the Los Banos Municipal Airport disposal site. See Attachment 1 for disposal location map.
- B. The Contractor shall comply with the Central Valley Regional Water Quality Control Board Resolution No. R5-2008-0182, "Waiver of Reports of Waste Discharge and Waste Discharge Requirements for Specific Types of Discharge Within the Central Valley Region", for the disposal of drilling fluid and cuttings.

3.8 DEPTH ZONE SPECIFIC WATER SAMPLING

- A. After completion of test well drilling and logging, the Contractor will perform depth zone specific water sampling. Upon notification by the Engineer to perform such sampling, the Contractor will prepare a formation testing tool to sample formation water from selected depths. The tool will consist of 30 feet of approved diameter pipe that contains 20 feet of perforated section (see plans) on the lower end of the casing, with a plate welded to the bottom of the section. The tool will be connected to an approved diameter drill pipe to allow air-lifting a minimum flow of water of 200 gpm against a head of 300 feet.
- B. Engineer, upon review of drill cuttings and geophysical log, shall determine zones to be sampled and location of bentonite seals. Prior to placing the drill pipe and testing tool at the lowest desired depth, a 10-foot seal shall be placed in the hole followed by 5 feet of fine sand. Then with the drill pipe and testing tool set at the desired depth, a sufficient amount of selected gravel will be placed in the hole to fill to depth 10 feet

above the top of the perforated section. To facilitate sampling, the gravel pack material for sampling should be selected to screen out the finest formation encountered and to be compatible with the $\frac{1}{16}$ -inch sampling tool slot. Then 5 feet of fine sand will be placed atop the gravel followed by 10 feet of bentonite placed on the sand. The gravel, sand and bentonite shall be placed with a tremie pipe.

- C. The well should be air-lifted at a rate of 200 gpm, if possible, for at least 6 hours and until the turbidity substantially decreases. A submersible pump shall then be installed and pumped at a rate of at least 80 gpm for at least six hours. The time to be recorded shall commence when the equipment is installed in the well and is placed in operation and shall end when the pumping is stopped.
- D. When the sampling at that zone is completed the string of tools shall be raised to the next zone to be tested. Seals, sand, and gravel shall be placed as in the first zone tested. It is anticipated that eight (8) formation tests will be conducted in the test well, although the Engineer may modify this number.
- E. Full payment for formation testing shall be provided as specified and no additional payment will be made. The Contractor will not be paid for formation testing hours required because of negligence on his part.
- F. Engineer will be responsible for collecting water samples. Owner will be responsible for water quality testing expenses.

3.9 TEST WELL ABANDONMENT

- A. Upon completion of the test well, the Contractor shall destroy the test well by filling with sand-cement grout to top and in conformance with the specifications of the Owner, the County of Merced, the State of California Standard Specifications, and local and State permits and ordinances for destruction of test wells. Following completion of the well sealing, the Contractor shall cut off the casing five feet below ground surface and fill the excavation to the original grade.

3.10 CLEANUP

- A. At the completion of work cuttings will be removed from the drilling area and disposed of appropriately **off-site** by the Contractor per Section 3.6A of these Specifications. Site shall be restored to original grades following construction. All temporary fencing shall be removed.

END OF SECTION

WELL SITE TO DISPOSAL SITE

TOTAL DISTANCE FROM TEST WELL LOCATION TO DISPOSAL SITE AT AIRPORT IS 2.58 MILES, ONE-WAY

LEGEND

- ◇ LOS BANOS MUNICIPAL AIRPORT AND DISPOSAL SITE
- TEST WELL LOCATION

SCALE IN FEET

WELL 16 TEST WELL SERVICES
CITY OF LOS BANOS

TEST WELL TO DISPOSAL SITE

PROVOST & PRITCHARD
AN EMPLOYEE OWNED COMPANY
286 WEST CROMWELL AVENUE
FRESNO, CALIFORNIA 93711-6162
559/449-2700 FAX 559/449-2715
www.pprp.com

DESIGN ENGINEER: ####
LICENSE NO: ####
DRAFTED BY: #### CHECKED BY: ####
DATE: ####
JOB NO: 350119005
PROJECT NO: ####
PHASE: ####

ORIGINAL SCALE SHOWN IS ONE INCH. ADJUST SCALE FOR REDUCED OR ENLARGED PLANS.
SHEET #### OF ####

NO.	REVISION	BY	DATE

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