

## Attachment 8 Quality Assurance

Each task outlined in this scope requires a different set of QA/QC procedures which are outlined below

1. Request for bids – Bid requests for drilling of wells are prepared by the MPWMD Senior Hydrogeologist and reviewed by the Water Resources Division Manager. Both of these staff members are California Registered Geologists and Certified Hydrogeologists. Methodologies and technical specifications are included in the bid request and will ultimately be part of the consultant agreement. These technical specifications are included in this application in the work plan section.
2. Permitting – While this task is mainly ministerial, MPWMD has developed a working relationship with the permitting agencies and over the years has greatly streamlined the process. Because MPWMD staff are Registered Geologists, Monterey Health Department has allowed MPWMD to certify well seal completions. This removes any standby time that may be incurred while waiting for county staff.
3. Notice to Proceed and Mobilization – MPWMD will coordinate with contractor and school district to clearly delineate staging areas. MPWMD staff will be present in the field during mobilization and direct the contractor where to stage equipment. Any change in landscape or tree trimming required will be authorized by the school district prior to occurring. Contractor will be required to communicate daily to MPWMD the status of each task and the schedule of the next. MPWMD will report to the school district daily through emails the status of the project.
4. Drill and Construct Deep Completion and Collect Geophysical Log – Technical specifications as to the construction materials, drilling fluid, and treatment of cuttings are presented in the work plan section of this application. MPWMD will be onsite at all times during the drilling and construction of this well. Cuttings will be logged by a Certified Hydrogeologist and categorized using the USCS soil classification system. Color of cuttings will be logged using the Munsell Soil Color Chart. Sieve analysis will be performed and mineralogy will be recorded. Samples of cuttings will be kept and inspected by a second staff member for validation on mineralogy. MPWMD will monitor the viscosity of the drilling mud and keep the mud as thin as possible when drilling through the strata to be screened. Screen sections will be laid out prior to installation to insure they are to design. Screened intervals will be selected using the geophysical log by a Certified Hydrogeologist. Prior to logging the hole, the contractor will pull out of the well and the bore will be stabilized with drilling mud.
5. Install Pump in Deep Completion – Contractor will be supervised by a Certified Hydrogeologist while installing the pump and sounding tube. Prior to installation all materials will be inspected for defect. Pump will be demonstrated to be function before contractor demobilizes.

6. Drill and Construct Shallow Completion – The same QA/QC procedures used for the deep completion will be used for this task.
7. Install Water Level Equipment – Data loggers will be inspected upon receipt of equipment. Silicone grease will be used to insure water tight seal between Level Logger and Rugged Cable. Data Loggers will be hung on Kellems Grips to ensure the loggers are not moved up or down when the data loggers are downloaded. When data loggers are downloaded, a manual sounding of the well will serve to identify if there is drift in the instrument.
8. Collect Water Quality Sample – Sample will be collected by a Certified Hydrogeologist. Purge volume and flow rate will be measured by a flow meter. Prior to collection of field parameters, water quality meters will be calibrated against appropriate standards. While collecting water samples, clean methodologies will be used to avoid contamination of sample. Samples will be placed on ice and delivered to laboratory within holding times. Sample is analyzed by a state certified lab and each sample has a unique identification code. Sample results will be compared against samples from nearby wells to check for possible aberrant reported values. Data is entered into a SQL database for storage and is backed up nightly.
9. Site Cleanup – MPWMD will inspect site and walk site with a representative from the school district and the City of Seaside. MPWMD will document the site status with photos.
10. Analyze Geophysical Log and Evaluate the Feasibility of Aquifer for Expansion of the ASR Program – Work will be completed and reviewed by a Certified Hydrogeologist. MPWMD will share conclusion with its ASR consultant for a third party review.
11. Final Report – The final report will be prepared and reviewed by a Certified Hydrogeologist.