



**Barton Springs  
Edwards Aquifer**  
CONSERVATION DISTRICT

August 30, 2016

*Via certified mail and email*

Wet Rock Groundwater Services, LLC  
317 Ranch Rd 620 South, Suite 203  
Austin, TX 78734

**RE: Staff review of Test Well Applications submitted by Electro Purification LLC, for authorization to conduct an aquifer test and produce groundwater from the Middle Trinity Aquifer.**

Dear Mr. Khorzad:

Thank you for submitting a revised descriptive statement and aquifer test work plan. Given the unique circumstances of this aquifer test that involving both temporary well completion and well development (acidization), the District is providing some comments and also requesting additional information and details for a revised Aquifer Test Work Plan.

**Aquifer Test Work Plan**

**3-1.20(D)(2)(c)(i) – Provide an aquifer test work plan to include the required information as specified in the District’s *Hydrogeological Report and Aquifer Test Guidelines (Appendix A)*.**

In the revised Aquifer Test Work Plan, please provide additional information regarding:

*Initiation, Duration, and Pumping Rate:*

- Provide tentative schedule sequence in which wells will be tested.
- Confirm that the discharge will be measured with a calibrated meter on each of the three test wells, and that a calibration certificate will be provided. Note that in addition to the meters, the District may try and confirm the flow rate if flow is channelized.
- Describe the frequency at which the discharge rate will be measured to ensure a constant rate.
- Describe how the discharge water will be managed from each well.

*Number and Location of Monitoring Wells:*

- Describe modification of Odell No 1 into a Lower Glen Rose Monitor well.

*Water Level and Quality Data:*

- The applicant will provide the transducer that will be strapped to column pipe below the packer.
- At least one week of data prior to pumping is needed from all the wells to determine trends.
- Provide more detailed information on the aquifer test water quality sampling schedule; information should include which wells will be sampled and when, as well as, frequency of at which field parameters will be taken.

### Well Design for Alternate Completion Design

3-1.20(D)(2)(c)(ii) – Provide a proposed well design schematic for the alternate completion design with specifications to include: a total depth, borehole diameter, casing diameter and depth, annular seal interval surface completion specifications and any other pertinent information.

The District also requests additional clarification on the test well and alternate packer designs. Provide a well design schematic for each of the three test wells and the modified Odell Test Well No 1. The schematics should reflect the temporary construction of the well and the depths at which the packer will be placed in each of the three test wells.

The District is allowing the testing of temporary wells based on the assumption that the temporary packers will isolate the final production zone. Accordingly, the performance of the packers is critical to the results of this aquifer test.

#### *Packer performance:*

- Describe how the packer design is intended to function to reliably isolate the production zone.
- Describe proposed installation procedures to ensure an adequate seal for the duration of the aquifer test.
- Describe how adequate packer performance and isolation of the Cow Creek will be determined and confirmed.

### Acidization Procedures

3-1.20(D)(1)(a) – Provide a detailed statement describing the nature and purpose of the proposed test wells and anticipated production volume.

You have indicated the intent to utilize acidization as part of the well development and provided initial information on proposed procedures prior to the aquifer test. As we discussed at our July 6, 2016 meeting, providing a clear and detailed description of these complicated development procedures on temporarily completed test wells is necessary to ensure the process will not unreasonably impact existing wells, cause waste by affecting groundwater or surface water quality, or be detrimental to human health and safety as determined by the Texas Commission on Environmental Quality (TCEQ). Accordingly, the District requests the following additional information:

1. Provide the name and contact information for the contractor or driller that will be performing the acidization work. Describe the roles and responsibilities of the involved parties and their experience with these procedures.
2. Provide information on the type of inhibitor that is to be used; indicate if it is food grade.
3. Provide rationale and/or a plan to minimize the risk of a pressure buildup that may result in the blow back of acid or CO<sub>2</sub> pressure to the surface (particularly for Odell No. 2 that only has 10 ft of annular seal) or migration into other formations.
4. Provide detailed information on the water quality testing procedures during well development/pumping to ensure all of the acid is removed from the well and formation (i.e. method to test for inhibitor and frequency of water quality testing). *The District requests that that each of the three test wells be monitored for field parameters (pH, conductivity and TDS) before, during, and after acidization. In addition, the applicant*

*should collect water quality samples from each of the three test wells before and after the acidization; samples should be analyzed by a lab for chlorides, TDS, and pH. District staff will collect water quality samples from at least two off site monitoring wells before and after the acidization for analysis at a lab.*

5. Provide information on the estimated development/pumping time to ensure all of the acid is removed from the well and formation. Provide a calculation and/or rationale for the pumping time.
6. Provide information on pump type and setting during development.
7. Provide acidization discharge plan describing measures to manage the produced water used for acidization and avoid unauthorized discharge of wastewater into or adjacent to waters of the state.
8. Provide a calculation on the estimated extent of the acid penetration into the formation (feet into the aquifer).
9. Provide calculations and/or rationale for necessitating the acid to remain in the well and formation for a least 48 hours.
10. Provide information on the source water that will be used for displacing the acid into the well (60,000 gallons) and information on any additives (e.g. dispersants or surfactants).
11. Describe the methods for transporting, containing, injecting HCL and any other chemicals onsite.

Please note that the applicant and the licensed professionals responsible for the aquifer testing and well construction/development are responsible for obtaining required permits and for compliance with all applicable statutes and rules associated with the well development procedures including the transporting and handling of hazardous materials, authorized disposal of waste (including process wastewater associated with well development), protection of surface and groundwater resources, and occupational health and safety of workers.

Please provide the above requested information by **September 9, 2016**. Once all information has been received and these information requirements have been satisfied for the purposes of technical review, the application will be determined to be administratively complete and a letter indicating such will be provided with further instructions. If you have any further questions or need clarification regarding the requested information, please feel free to contact my office by phone at 512/282-8441.

Sincerely,



John T. Dupnik, P.G.  
General Manager

cc:

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