
RC RESOURCES, INC. ROCK CREEK EXPLORATION PROJECT
TRACER TEST STATUS REPORT

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Rock Creek Evaluation Adit Tracer Test Status Report

Rock Creek Resources (RCR) initiated a tracer test to evaluate the possibility of a connection between the proposed evaluation adit groundwater discharge site and private water supplies in the general area. Test pit sampling had identified an area of shallow gravel on RCR's property in the area planned as the tailings impoundment site. The tracer test trench was located in the same location as Trench 18 that was excavated for percolation testing in February of 2006. The trench was excavated to a depth of 13 feet and exposed Lake Missoula deposits overlying outwash gravel on top of Belt rocks. Lake Missoula sediments consisted of varved, silty clay from 0' to 3', overlying approximately ten feet of coarse gravel with boulders up to 2 feet in size. No water was encountered in the test pit at this depth. Gravel at the proposed infiltration site is unsaturated, but has quite high permeability (Hydrometrics, 2006).

The dye for the tracer test was deployed on October 17, 2006 in a trench approximately 100 feet northwest of the newly installed monitoring well MW06-1 (see attached figure). The fluorescein dye was shipped in a powder form in an amount determined by Ozark Underground Laboratory (five pounds) and mixed with water on site. Approximately 3,250 gallons of water was poured into the trench and allowed to pre-wet the gravel. The 3,250 gallons infiltrated into the underlying gravel in less than 10 minutes. The dye was then introduced through a hose while injecting another 3,250 gallons of water into the trench. Three more loads of water, approximately 3,250 gallons each, were poured into the trench to complete the injection phase (total 13,000 gallons). The trench was then backfilled.

Prior to introducing the tracer dye, three monitoring wells were installed topographically downgradient of the trench and baseline samples were collected from these wells, private wells and springs. A sampling array of 11 wells and 8 springs was sampled and background analyses conducted. Sample locations were selected to provide testing of all nearby private water supplies whose owners were willing to allow testing. One surface water sampling site was added after the baseline event.

Following dye injection, there were 8 tracer sampling events (see attached table). The sampling program was terminated in July 2007 (total test length = eight months). No tracer dye was detected in any of the samples.

The testing procedure was coordinated with Ozark Labs and follows procedures that they have developed for groundwater tracer testing. Two types of samples were collected in an attempt to observe the dye in groundwater: 1) charcoal packets and 2) water grab samples. The preferred protocol for sampling with charcoal packets is to put the charcoal sampler in a stream, spring, or well and leave the sampler in place for a period of time. A few of the earliest sampling events consisted of putting a charcoal sampler in a flow through container connected to an outside faucet which was then opened, passing water through the charcoal for up to 24 hours. Charcoal samplers allow a time concentration of any dye passing through the sampling site. The charcoal samplers can concentrate up to 400 times the dye concentration in the water (OUL, Personnel Communication, March 7, 2007). Estimated method detection limit of the charcoal sampling system elutant can range to as low as 0.01 ppb (OUL, 2002, p.30). Assuming a 400 times concentration, the 0.01 ppb elutant method detection limit translates into sample site detection limit of 0.000025 ppb.

Ozark Underground Laboratory personnel are of the opinion that unless a flow through test can be run for at least 24 hours, that a water grab sample is a more appropriate sampling method. The flow through technique required leaving outdoor faucets running for 24 hour periods in the winter which is impractical; therefore the flow through technique was used only in the first two sampling events (the baseline and the 2nd sampling event) and was replaced with water grab samples later in the season when freezing conditions were more common. Water grab samples were taken from outdoor or indoor faucets after the water was left to run for a minimum of five minutes to purge the well. Method detection limit of dye in water is reported to be 0.0005 ppb (OUL, 2002, p. 30).

Note that only the three wells, directly downgradient of the dye deployment site, were sampled on Event 1. One of these wells (MW06-1) has been dry during all of the sampling events. The other two wells have only a small saturated thickness near the bedrock alluvial contact.

Tracer testing conducted from October 2006 through July 2007 provides an indication that water infiltrating at the proposed groundwater discharge site either does not follow a pathway to any of the wells or springs sampled or the groundwater flow velocities are too low to have reached a sample site as of July 2007.

Reference

Hydrometrics, Inc, 2006, *Rock Creek Evaluation Adit Project – Revised Application for Exploration License*, Appendix O, March, 2006

Ozark Underground Laboratory, 2002, *Groundwater Tracing Handbook*