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March 1, 2007

Via Email
Ms. Amy McLaughlin
Remedial Project Manager
United States Environmental Protection Agency
Region IV, Superfund North Florida Section
61 Forsyth Street, SW
Atlanta, GA 30303

RE: Hydraulic Testing and Geophysical Logging of UTZ, LTZ and Semi-Confining Unit--Cabot Carbon/Koppers Superfund Site in Gainesville, FL

Dear Ms. McLaughlin:

On behalf of Beazer East, Inc., included with this letter is Attachment A which describes the approach to the hydraulic testing and geophysical logging of the Upper Transmissive Zone (UTZ), Lower Transmissive Zone (LTZ) and semi-confining unit, as per our discussion on February 20, 2007. Monitoring well FW-22C is the first of two wells scheduled for hydraulic testing and logging. The approximate schedule for testing in monitoring well FW-22C is as follows:

1) Sunday (March 4th)-- Rotasonic rig arrives on Site;
2) Monday (March 5th)--Rotasonic rig setups up on monitoring well FW-22C;
3) Tuesday (March 6th)--Continuous 4-inch diameter core collected from base of 3rd isolation casing (250 feet bls) to approximately 40 feet below base of Ocala Limestone and Avon Park Formation contact (380 feet bls);
4) Wednesday through Friday (March 7th to 9th)--Preliminary development of 4-inch open borehole (250 to 380 feet bls); perform step-drawdown and constant rate (specific capacity) tests; perform flow meter survey and conduct geophysical logging; and
5) Saturday (March 10th)--Resume drilling to set 4-inch well casing, as per specification.

This schedule is dependent on the successful implementation of a number of tasks, starting with the rotasonic rig arriving at the Site by Sunday (The rig is mobing from Minnesota). In addition, plans to collect continuous core from 250 feet to approximately 380 feet is dependent on a stable borehole. If borehole conditions are unstable, the schedule may be delayed. I will keep you updated of any schedule changes.

A similar series of hydraulic tests and geophysical logs will be performed in the UTZ at monitoring well FW-24B in approximately 3 weeks (Approximately March 20, 2007). The drilling and installation of the second isolation casing for this well will start on March 5th. A more specific time frame for hydraulic testing at this well will be established after the second and third isolation casing are installed in this well.

If there are any questions concerning the proposed testing and logging, please call me at (303) 665-4390.

Sincerely,

James R. Erickson
Program Manager

Attachment

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ATTACHMENT A
HYDRAULIC TESTING AND GEOPHYSICAL LOGGING APPROACH

The EPA requested that Beazer perform hydraulic tests and geophysical logging in some of the UF monitoring wells currently being installed at the Cabot Carbon/Kopper Superfund Site (Site). Specifically, short-term hydraulic tests were requested for the Upper Transmissive Zone (UTZ), Lower Transmissive Zone (LTZ) and the semi-confining unit separating the UTZ and LTZ. The hydraulic tests proposed for the UF Aquifer include: 1) Step-drawdown test; 2) Constant-rate test (specific-capacity); and 3) Pumping and static flow-meter surveys. In addition to the hydraulic tests, a suite of geophysical logs will be performed consisting of: 1) Caliper; 2) Fluid conductivity; 3) Fluid temperature; 4) Short- and long-normal resitivity; 5) Natural gamma; and 6) Downhole video.

The depth to the top of the Ocala Limestone (top of UTZ) at the Site is approximately 150 feet. The UTZ ranges in thickness from 50 to 100 feet. The LTZ straddles the contact of the Ocala Limestone and Avon Park Formation, which is at an approximate depth of 340 feet at the Site. LTZ ranges in thickness from 20 to 100 feet.

Hydraulic testing is currently planned for two wells, FW-22C and FW-24B. Well FW-22C will be the first well tested with hydraulic tests performed in the semi-confining unit and LTZ. Well FW-24B will be the second well tested with tests performed in the UTZ. Depending on the success of these tests, a third test and associated geophysical logs may be performed in well FW-23C.

The hydrologic property that controls hydraulic communication between the UTZ and the LTZ is the vertical hydraulic conductivity of the semi-confining unit. There are no definitive in-situ aquifer tests to measure this parameter. However in an attempt to examine this issue, Beazer proposes to collect semi-continuous water-level measurements with a data logger/transducer system in a UTZ/LTZ nested well pair. These data will be used to evaluate transient pressure changes across the semi-confining unit to better understand the hydraulic response of this semi-confining unit. In addition, a borehole flow-meter test will be conducted under pumping and nonpumping conditions to identify locations of water-producing zones within the semi-confining unit. It should be noted, however, that the identification of water-producing zones within the semi-confining unit does not provide data on vertical hydraulic communication with the overlying UTZ and underlying LTZ. Thus, it will only provide qualitative information on the horizontal contribution of groundwater from this unit.

Well FW-22C Hydraulic Tests and Logs

Well FW-22C is the first well to extend into the LTZ at the Site. Three isolation casings (24-, 18- and 10-inch IDs) have been installed in this well with the deepest 10-inch ID isolation casing extending from land surface to a depth of approximately 250 feet. The final well casing is a 4-inch ID casing that will extend from land surface to an approximate depth of 300 feet; however, the final depth for the 4-inch well casing will be determined after the depth and thickness of the UTZ is established from the hydraulic testing.

FW-22C Hydraulic Testing and Logging Procedure:

1) Collect 4-inch diameter core, with the rotasonic rig, from a depth of 250 feet to approximately 380 feet (50 feet below the estimated contact of the Avon Park Formation);
2) Remove rotasonic override casing from borehole;
3) Install 2-inch ID access line inside 10-inch ID casing to a depth of approximately 240 feet for flow meter logging;
4) Install submersible pump (capable of pumping from 20 to 80 gpm) inside of 10-inch ID casing to a depth of approximately 230 feet;
5) Install pressure transducer inside of 10-inch casing above submersible pump (Note pressure transducer will remain in the well until the submersible pump is pulled);
6) A water-level probe will be used as a backup; water levels will be collected with the probe at appropriate time intervals during the step-drawdown and constant-rate tests; these manual water-level measurements will be used as a backup to the water levels collected with the pressure transducer; in addition, the water-level probe will be used to verify the pressure transducer calibration;
7) Perform tests of submersible pump and associated equipment. Develop the well for approximately ½ hour at a pumping rate of 50 gpm. Drawdown will be monitored to assist with selection of pumping rates for step-drawdown test;
8) Perform step-drawdown test for approximately 2 hrs at 4 different pumping rates (approximately 20 gpm, 40 gpm, 60 gpm and 80 gpm);
9) At the completion of the step-drawdown test, stop pumping and monitor recovery of water levels with the pressure transducer and water-level probe;
10) After water levels have recovered to approximately 90 percent, perform the constant-rate test; the test shall be run for approximately 2 to 4 hours or until water level declines are stable; (Note that the pump will continue to run from the beginning of the constant-rate test until the pumping flow-meter survey is complete);
11) Remove water-level probe from 2-inch ID access line and run flow meter down access line and into the 4-inch borehole;
12) Perform a pumping flow-meter survey across the open borehole interval from a depth of 250 feet to approximately 380 feet; the flow-meter survey will be performed in both a trolling and stationary mode; the locations of the

stationary measurements will be established after the trolling surveys are complete;

13) At the completion of the pumping flow-meter survey, shut off pump and monitor water-level recovery for approximately 1 hour or until water levels stabilize;
14) Perform nonpumping stationary flow-meter measurements in open borehole at 3 to 4 locations to evaluate vertical inter-wellbore flow; these measurements will be used to establish whether significant inter-wellbore flow is occurring;
15) Remove logging equipment, transducer and pump from the well;
16) Perform suite of geophysical logs in open 4-inch borehole; and
17) Demob geophysical logging.

FW-22C Well Completion

The procedure for completing monitoring well FW-22C is based on the assumption that the LTZ is stable enough to allow for an open borehole completion. If the formation is not stable, an alternative well design, similar to the UTZ wells will be implemented. The final drilling of the open borehole beneath the 4-inch ID well casing will not be performed until all four LTZ 4-inch well casings have been installed. The following is a description of steps required to drill and install the 4-inch ID well casing in well FW-22C.

1) Establish semi-confining unit thickness and depth to top of LTZ based on the results of the flow-meter survey and associated geophysical logs;
2) Backfill 4-inch borehole with sand to the top of the LTZ to prevent drill cuttings and cement from accumulating in the borehole during the 4-inch ID casing installation; the backfill sand will also minimize the vertical exchange of groundwater within the borehole prior to installing the Westbay system;
3) The 4-inch diameter borehole will be enlarged to a minimum diameter of 8-5/8 inches from the base of the 10-inch ID isolation casing (depth of 250 feet bls) to approximately 5 feet above the top of the LTZ (depth of approximately 300 feet bls); it is anticipated that the borehole will be enlarged in steps by using progressively larger diameter override casings to ensure alignment with the 4-inch borehole;
4) After the borehole has been enlarged to 8-5/8-inch diameter, a bentonite plug of adequate thickness will be installed at the base of the open borehole to prevent cement infiltration into the sand during grouting of the 4-inch ID well casing
5) The 4-inch well casing will be installed as per specifications ensuring that the well casing is aligned with 4-inch open borehole below; and
6) Demob rotasonic rig from well.

Well FW-24B Hydraulic Tests and Logs

A series of similar tests will be performed in the UTZ zone of well FW-24B. The procedure for the tests will consist of the following:

1) Set the 3rd isolation casing into the HG Lower clay unit at a depth of approximately 120 feet; advance an 8-5/8 diameter borehole from the base of the isolation casing to a total depth of approximately 250 feet;
2) Pull the 8-5/8-inch override casing back to the top of the Ocala Limestone to expose the UTZ zone;
3) Perform hydraulic tests and perform geophysical logs similar to the steps described for well FW-22C;
4) At the completion of the testing and logging advance the 8 5/8 inch casing to a depth of 250 feet and complete multi-screened well as per specifications.