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GROUNDWATER AND ENVIRONMENTAL CONSULTANTS
CENTREVILLE, MARYLAND

November 29, 2013

Mr. Dane Bauer
Daft, McCune & Walker, Inc.
200 E. Pennsylvania Ave.
Towson, Maryland 21286

SUBJECT: CRHC – Monthly Post-Remedial Progress Report for September 2013

Dear Mr. Bauer:

On September 24, 2013, monitoring and recovery wells at the Chester River Hospital Center (CRHC) (see Figure 1) were gauged in accordance with the monitoring modifications detailed in MDE-Oil Control Program's letter dated September 5, 2012. Using an oil/water interface probe, Earth Data personnel gauged 48 onsite wells (see Figure 2) to determine the depth to the water-table and the presence, if any, of liquid hydrocarbons on the surface of the water-table. Using the gauging data, a water-table contour map was prepared showing the groundwater flow direction (see Figure 3).

Following the gauging, eleven wells immediately downgradient of the remediation/containment system were sampled (MW-15, MW-16, MW-19, MW-20, MW-24, MW-33, MW-34, MW-35, MW-48, MW-49 and MW-50). These wells are located in and around the lower parking lot south of Brown Street.

Prior to sampling, each well was purged of at least three well volumes of water to ensure that the sample collected was representative of the water in the surrounding formation. The purge water was filtered through granular activated carbon before being discharged onsite. Using dedicated disposable bailers for each well, groundwater samples were collected in pre-labeled sample containers and immediately placed on ice in a laboratory supplied cooler while in the field. The samples were sent via courier to an EPA-approved laboratory and analyzed for total petroleum hydrocarbons – diesel range organics (TPH-DRO) using EPA Method 8015.

The water-table contour map, prepared with the gauging data collected on September 24, 2013, shows a depression in the upper parking lot (source area) created by the groundwater recovery system which was reactivated on June 14, 2013. Based on this data, it is not clear whether there is containment in downgradient portion of the dissolved hydrocarbon plume, i.e., the south end of the lower parking lot.

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Measurable thicknesses of liquid phase hydrocarbon (fuel oil) ranging from 0.02 to 0.04 feet were measured on the water-table in three of the monitoring wells gauged during the September 2013 site visit (MW-14, MW-42 and MP-2B). Oleophylic wics were used in each of the three wells to retrieve the liquid phase hydrocarbons. Additionally, a petroleum sheen or film was observed on the water-table in 14 wells at the site. All 17 wells were all located north of Brown Street in the source area, i.e., the portion of the site impacted by liquid fuel oil. The Earth Data well gauging report and corresponding field report for the September 24, 2013 site visit may be found in Appendix A.

Of the 11 water samples collected from wells in the lower parking lot south of Brown Street, laboratory analytical results showed detectable concentrations of petroleum hydrocarbons in two wells (MW-20 and MW-33) (Table 1). The TPH-DRO concentrations in the MW-20 and MW-33 water samples were found to be 1.1 mg/L and 0.17 mg/L, respectively. No detectable concentrations of TPH-DRO were found in the samples collected from the remaining nine wells. The May 2013 sampling showed detectable TPH-DRO in four downgradient monitoring wells and the June 2013 samples showed TPH-DRO in eight downgradient wells. The July 2013 samples showed detectable TPH-DRO in ten wells. The August sampling showed detectable concentrations in only one well. Prior to May 2013, TPH-DRO was regularly found in only two monitoring wells, MW-19 and MW-20. The absence of TPH-DRO in the downgradient wells during the August and September 2013 rounds of sampling may be attributed to the rapid reduction in the water-table elevation as a result of the reactivation of pumping wells in the remediation/containment system in June 2013. A site map depicting the groundwater quality for the September 2013 sampling event may be found in Figure 4. The September 2013 laboratory analytical report may be found in Appendix B.

The absence of TPH-DRO in the downgradient monitoring wells during the August and September 2013 sampling events does not necessarily preclude the presence of dissolved DRO in the groundwater beneath the lower parking area. Dissolved TPH-DRO may be present at concentrations below the laboratory detection limit of 0.1 mg/l. The reduction in the TPH-DRO concentration over the previous sampling events may be attributed to the rapid decline in the water-table elevation, causing the dissolved petroleum hydrocarbons to become entrained in the surrounding soil matrix. The concentrations of dissolved TPH-DRO may return to previous levels or remain below detection limits.

Copies of this report should be forwarded to MDE and the Town of Chestertown. If you have any question or require additional information, please do not hesitate to call.

Sincerely,

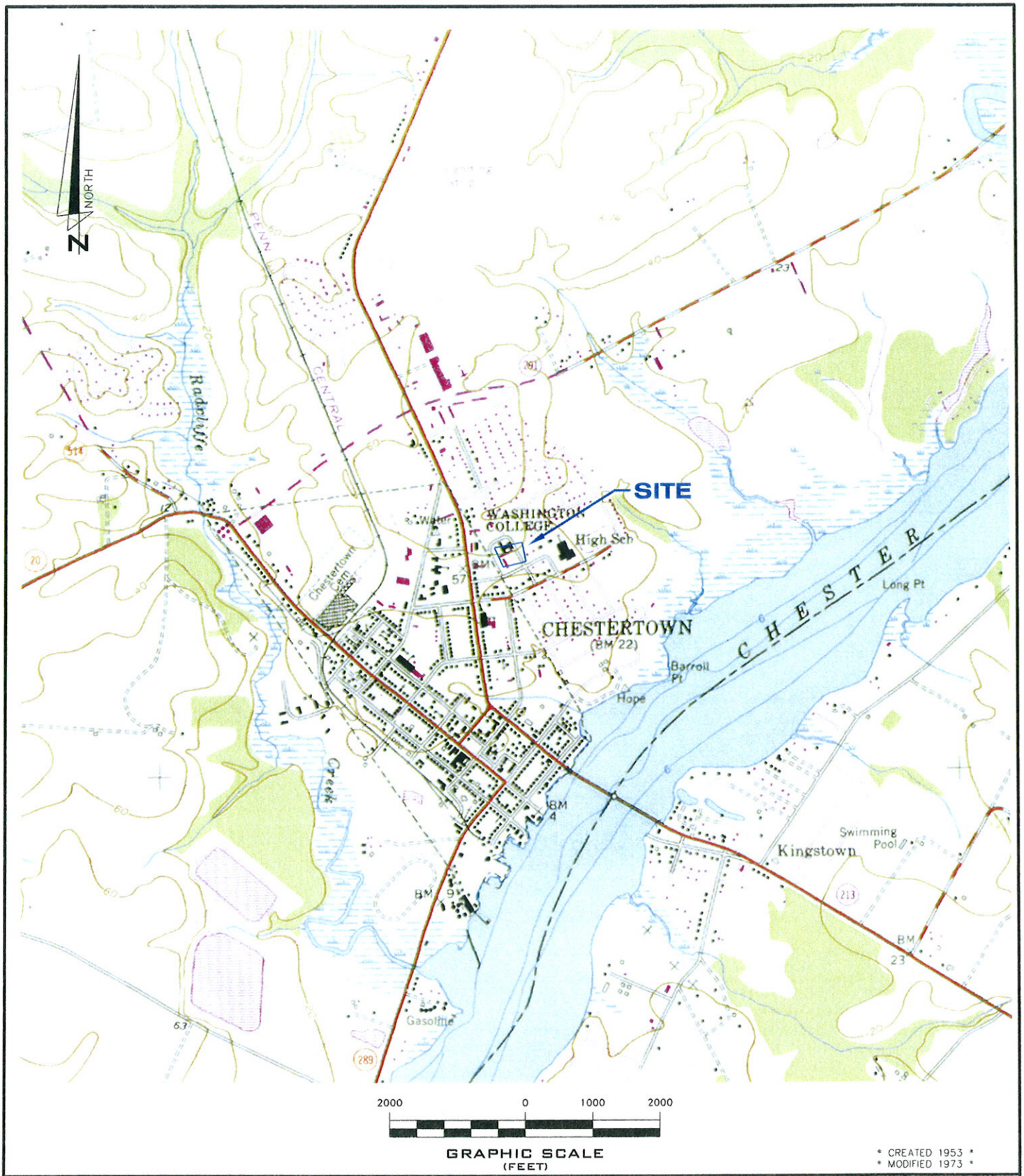
Andrew Bullen
Senior Project Manager

AJB:tjl - 2781

cc: Mr. Kunal Gangopadhyay – EBA Engineering
Mr. Tucker Moorshead – Earth Data

Attachments

FIGURES



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* MODIFIED 1973 *

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FIGURE 1

LOCATION MAP
FOR
CHESTER RIVER HOSPITAL CENTER
CHESTERTOWN, MARYLAND

PROJ MGR.	A.BULLEN
DATE	10/31/2011
SCALE	AS SHOWN
EDI #	2781
DRAWN BY	T.COCHRUN

PORTION OF USGS 7.5 MINUTE QUADRANGLE FOR CHESTERTOWN, MARYLAND

Figure 1 - Portion of USGS Quadrangle for Chestertown showing the location of Chester River Hospital Center - Chestertown, Maryland.

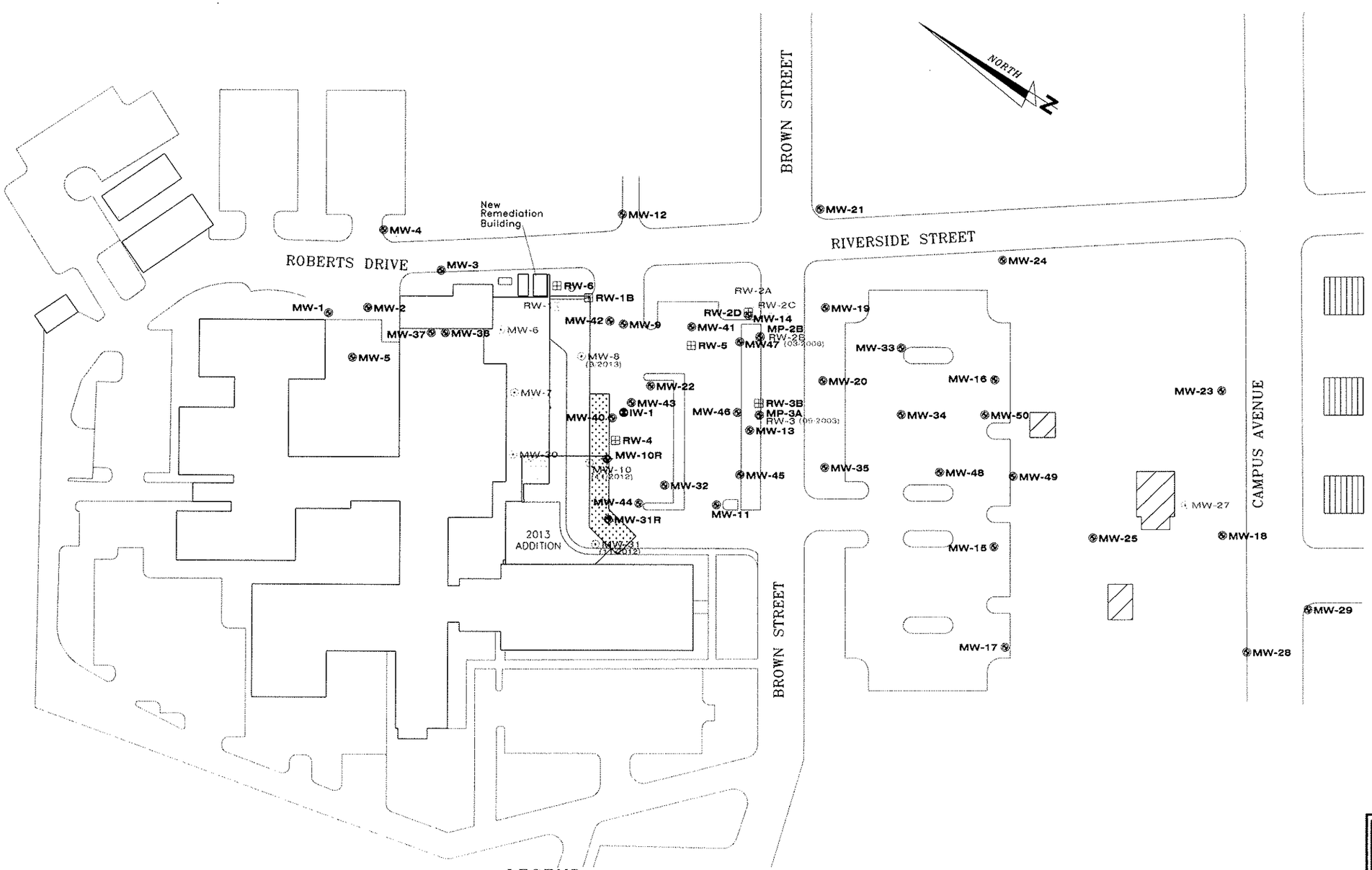

FIGURE 2

SITE MAP FOR

CHESTER RIVER HOSPITAL CENTER

CHESTERTOWN, MARYLAND

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PROJ MGR	SCALE	CADD FILE	BASE MAP
A BULLEN	AS SHOWN	2781-SEPT 13	
DRAWN BY	DATE	PROJECT	SURVEY BY
T COCHRUN	10/04/2013	2781	

J:_Job_Directories\current\2781 Hospital\CAD\2013\2781-SEPT 13.DWG

Figure 2 - Site map showing the location of monitoring wells and other pertinent features at Chester River Hospital Center, Chestertown, Maryland.

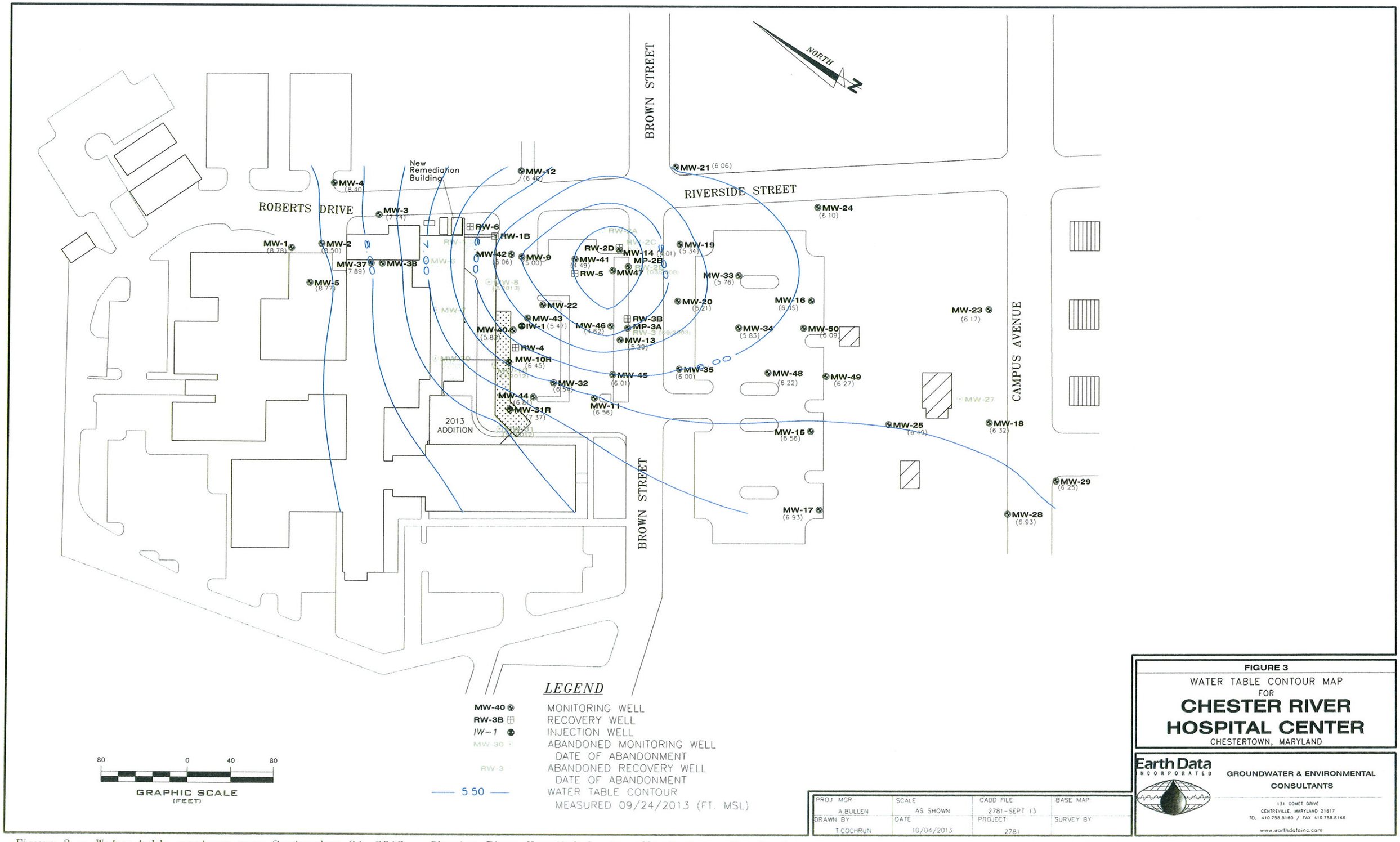

Figure 3 - Water table contour map September 24, 2013 - Chester River Hospital Center, Chestertown, Maryland.

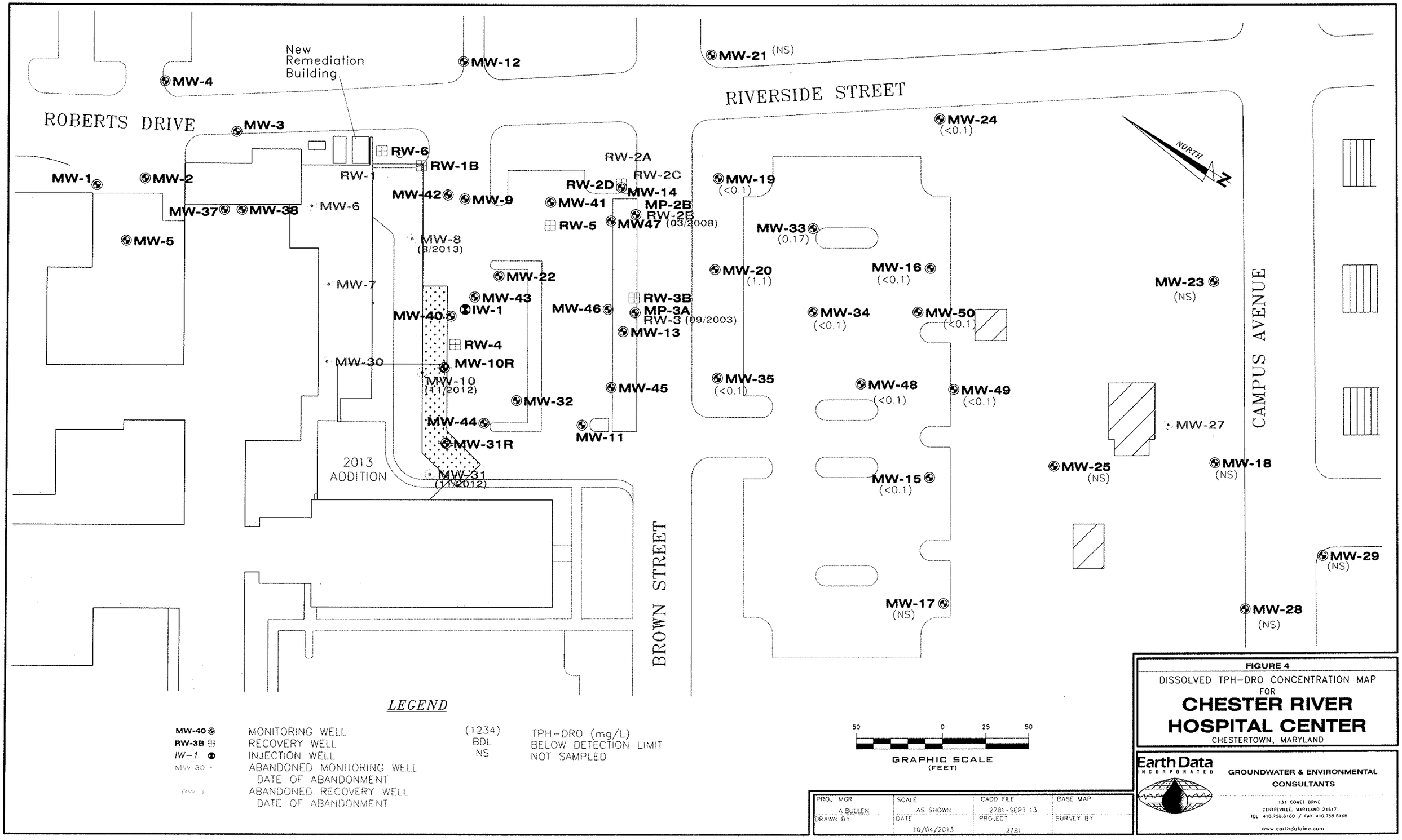

Figure 4- Water quality map showing total petroleum hydrocarbon (TPH) concentrations, September 24, 2013 Chester River Hospital Center, Chestertown, Maryland.

TABLE

MW-15

	5-Jun-12	27-Jul-12	5-Sep-12	1-Oct-12	5-Nov-12	4-Dec-12	7-Jan-13	5-Feb-13	4-Mar-13	8-Apr-13	6-May-13	4-Jun-13	24-Jul-13	21-Aug-13	24-Sep-13
Benzene (ug/L)	<1	NS	<1	<1	<1	<1	NS	NS	<1	NS	<1	<1	NS	NS	NS
Toluene (ug/L)	<1	NS	<1	<1	<1	<1	NS	NS	<1	NS	<1	<1	NS	NS	NS
Ethylbenzene (ug/L)	<1	NS	<1	<1	<1	<1	NS	NS	<1	NS	<1	<1	NS	NS	NS
Total Xylenes (ug/L)	<2	NS	<2	<2	<2	<2	NS	NS	<2	NS	<2	<2	NS	NS	NS
TOTAL BTEX (ug/L)	<2	NS	<2	<2	<2	<2	NS	NS	<2	NS	<2	<2	NS	NS	NS
Isopropylbenzene (ug/L)	<1	NS	<1	<1	<1	<1	NS	NS	<1	NS	<1	<1	NS	NS	NS
Naphthalene (ug/L)	<1	NS	<1	<1	<1	<1	NS	NS	<1	NS	<1	<1	NS	NS	NS
Acetone (ug/L)	<10	NS	<10	<10	<10	<10	NS	NS	<10	NS	<10	<10	NS	NS	NS
Chloroform (ug/L)	<1	NS	<1	<1	<1	<1	NS	NS	<1	NS	<1	<1	NS	NS	NS
Tetrachloroethene (ug/L)	<1	NS	<1	<1	<1	<1	NS	NS	<1	NS	<1	<1	NS	NS	NS
TPH-DRO (mg/L)	<0.1	NS	<0.1	<0.1	<0.1	<0.1	NS	NS	<0.1	NS	<0.1	1.5	0.11	<0.1	<0.1
TPH-GRO (mg/L)	NS	NS	NS	<0.1	<0.1	<0.1	NS	NS	<0.1	NS	<0.1	<0.1	NS	NS	NS

MW-16

	5-Jun-12	27-Jul-12	5-Sep-12	1-Oct-12	5-Nov-12	4-Dec-12	7-Jan-13	5-Feb-13	4-Mar-13	8-Apr-13	6-May-13	4-Jun-13	24-Jul-13	21-Aug-13	24-Sep-13
Benzene (ug/L)	<1	NS	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NS	NS	NS
Toluene (ug/L)	<1	NS	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NS	NS	NS
Ethylbenzene (ug/L)	<1	NS	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NS	NS	NS
Total Xylenes (ug/L)	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	NS	NS
TOTAL BTEX (ug/L)	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	NS	NS
Isopropylbenzene (ug/L)	<1	NS	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NS	NS	NS
Naphthalene (ug/L)	<1	NS	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NS	NS	NS
Acetone (ug/L)	<10	NS	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	NS	NS	NS
Chloroform (ug/L)	<1	NS	1.9	<1	<1	1.3	<1	<1	<1	<1	<1	<1	NS	NS	NS
Tetrachloroethene (ug/L)	<1	NS	1.1	<1	<1	1.1	<1	<1	<1	<1	<1	<1	NS	NS	NS
TPH-DRO (mg/L)	<0.1	NS	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.18	<0.1	<0.1	0.18	0.21	<0.1	<0.1
TPH-GRO (mg/L)	NS	NS	NS	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NS	NS	NS

MW-17

	5-Jun-12	27-Jul-12	5-Sep-12	1-Oct-12	5-Nov-12	4-Dec-12	7-Jan-13	5-Feb-13	4-Mar-13	8-Apr-13	6-May-13	4-Jun-13	24-Jul-13	21-Aug-13	24-Sep-13
Benzene (ug/L)	<1	NS	<1	NS	NS	<1	NS	NS	<1	<1	NS	<1	NS	NS	NS
Toluene (ug/L)	<1	NS	<1	NS	NS	<1	NS	NS	<1	<1	NS	<1	NS	NS	NS
Ethylbenzene (ug/L)	<1	NS	<1	NS	NS	<1	NS	NS	<1	<1	NS	<1	NS	NS	NS
Total Xylenes (ug/L)	<2	NS	<2	NS	NS	<2	NS	NS	<2	<2	NS	<2	NS	NS	NS
TOTAL BTEX (ug/L)	<2	NS	<2	NS	NS	<2	NS	NS	<2	<2	NS	<2	NS	NS	NS
Isopropylbenzene (ug/L)	<1	NS	<1	NS	NS	<1	NS	NS	<1	<1	NS	<1	NS	NS	NS
Naphthalene (ug/L)	<1	NS	<1	NS	NS	<1	NS	NS	<1	<1	NS	<1	NS	NS	NS
Acetone (ug/L)	<10	NS	<10	NS	NS	<10	NS	NS	<10	<10	NS	<10	NS	NS	NS
Chloroform (ug/L)	<1	NS	<1	NS	NS	<1	NS	NS	<1	<1	NS	<1	NS	NS	NS
Tetrachloroethene (ug/L)	<1	NS	<1	NS	NS	<1	NS	NS	<1	<1	NS	<1	NS	NS	NS
TPH-DRO (mg/L)	<0.1	NS	<0.1	NS	NS	<0.1	NS	NS	1.0	<0.1	NS	<0.1	NS	<0.1	NS
TPH-GRO (mg/L)	NS	NS	NS	NS	NS	<0.1	NS	NS	<0.1	<0.1	NS	<0.1	NS	NS	NS

MW-18

	5-Jun-12	27-Jul-12	5-Sep-12	1-Oct-12	5-Nov-12	4-Dec-12	7-Jan-13	5-Feb-13	4-Mar-13	8-Apr-13	6-May-13	4-Jun-13	24-Jul-13	21-Aug-13	24-Sep-13
Benzene (ug/L)	<1	NS	<1	NS	NS	<1	<1	NS	<1	NS	NS	<1	NS	NS	NS
Toluene (ug/L)	<1	NS	<1	NS	NS	<1	<1	NS	<1	NS	NS	<1	NS	NS	NS
Ethylbenzene (ug/L)	<1	NS	<1	NS	NS	<1	<1	NS	<1	NS	NS	<1	NS	NS	NS
Total Xylenes (ug/L)	<2	NS	<2	NS	NS	<2	<2	NS	<2	NS	NS	<2	NS	NS	NS
TOTAL BTEX (ug/L)	<2	NS	<2	NS	NS	<2	<2	NS	<2	NS	NS	<2	NS	NS	NS
Isopropylbenzene (ug/L)	<1	NS	<1	NS	NS	<1	<1	NS	<1	NS	NS	<1	NS	NS	NS
Naphthalene (ug/L)	<1	NS	<1	NS	NS	<1	<1	NS	<1	NS	NS	<1	NS	NS	NS
Acetone (ug/L)	<10	NS	<10	NS	NS	<10	<10	NS	<10	NS	NS	<10	NS	NS	NS
Chloroform (ug/L)	<1	NS	<1	NS	NS	<1	<1	NS	<1	NS	NS	<1	NS	NS	NS
Tetrachloroethene (ug/L)	<1	NS	<1	NS	NS	<1	<1	NS	<1	NS	NS	<1	NS	NS	NS
TPH-DRO (mg/L)	<0.1	NS	<0.1	NS	NS	0.23	<0.1	NS	<0.1	NS	NS	<0.1	NS	<0.1	NS
TPH-GRO (mg/L)	NS	NS	NS	NS	NS	<0.1	<0.1	NS	<0.1	NS	NS	<0.1	NS	NS	NS

MW-19

	5-Jun-12	27-Jul-12	5-Sep-12	1-Oct-12	5-Nov-12	4-Dec-12	7-Jan-13	5-Feb-13	4-Mar-13	8-Apr-13	6-May-13	4-Jun-13	24-Jul-13	21-Aug-13	24-Sep-13
Benzene (ug/L)	<1	NS	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NS	NS	NS
Toluene (ug/L)	<1	NS	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NS	NS	NS
Ethylbenzene (ug/L)	<1	NS	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NS	NS	NS
Total Xylenes (ug/L)	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	NS	NS
TOTAL BTEX (ug/L)	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	NS	NS
Isopropylbenzene (ug/L)	<1	NS	<1	<1	<1	1.1	2.0	<1	1.7	<1	<1	1.2	NS	NS	NS
Naphthalene (ug/L)	<1	NS	<1	<1	<1	<1	5.1	<1	1.0	<1	<1	<1	NS	NS	NS
Acetone (ug/L)	<10	NS	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	NS	NS	NS
Chloroform (ug/L)	<1	NS	<1	<1	2.8	1.8	<1	<1	<1	<1	<1	<1	NS	NS	NS
Tetrachloroethene (ug/L)	<1	NS	<1	1.1	<1	<1	<1	<1	<1	<1	<1	<1	NS	NS	NS
TPH-DRO (mg/L)	<0.1	NS	<0.1	<0.1	<0.1	0.86	<0.1	0.17	0.13	1.3	0.13	0.36	0.14	<0.1	<0.1
TPH-GRO (mg/L)	NS	NS	NS	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NS	NS	NS

MW-20

	5-Jun-12	27-Jul-12	5-Sep-12	1-Oct-12	5-Nov-12	4-Dec-12	7-Jan-13	5-Feb-13	4-Mar-13	8-Apr-13	6-May-13	4-Jun-13	24-Jul-13	21-Aug-13	24-Sep-13
Benzene (ug/L)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NS	NS	NS
Toluene (ug/L)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NS	NS	NS
Ethylbenzene (ug/L)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NS	NS	NS
Total Xylenes (ug/L)	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	NS	NS
TOTAL BTEX (ug/L)	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	NS	NS
Isopropylbenzene (ug/L)	<1	<1	<1	2.2	<1	<1	<1	<1	<1	<1	<1	<1	NS	NS	NS
Naphthalene (ug/L)	<1	<1	<1	<1	<1	<1	2.2	<1	<1	<1	<1	<1	NS	NS	NS
Acetone (ug/L)	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	NS	NS	NS
Chloroform (ug/L)	<1	<1	1.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	NS	NS	NS
Tetrachloroethene (ug/L)	<1	<1	1.2	<1	<1	<1	<1	<1	<1	<1	<1	<1	NS	NS	NS
TPH-DRO (mg/L)	1.3	1.9	1.8	4.0	2.6	1.9	0.68	0.95	2.2	1.0	1.8	1.6	2.2	2.0	1.1
TPH-GRO (mg/L)	NS	NS	NS	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NS	NS	NS

MW-23

	5-Jun-12	27-Jul-12	5-Sep-12	1-Oct-12	5-Nov-12	4-Dec-12	7-Jan-13	5-Feb-13	4-Mar-13	8-Apr-13	6-May-13	4-Jun-13	24-Jul-13	21-Aug-13	24-Sep-13
Benzene (ug/L)	<1	NS	<1	NS	NS	<1	<1	NS	<1	NS	NS	<1	NS	NS	NS
Toluene (ug/L)	<1	NS	<1	NS	NS	<1	<1	NS	<1	NS	NS	<1	NS	NS	NS
Ethylbenzene (ug/L)	<1	NS	<1	NS	NS	<1	<1	NS	<1	NS	NS	<1	NS	NS	NS
Total Xylenes (ug/L)	<2	NS	<2	NS	NS	<2	<2	NS	<2	NS	NS	<2	NS	NS	NS
TOTAL BTEX (ug/L)	<2	NS	<2	NS	NS	<2	<2	NS	<2	NS	NS	<2	NS	NS	NS
Isopropylbenzene (ug/L)	<1	NS	<1	NS	NS	<1	<1	NS	<1	NS	NS	<1	NS	NS	NS
Naphthalene (ug/L)	<1	NS	<1	NS	NS	<1	<1	NS	<1	NS	NS	<1	NS	NS	NS
Acetone (ug/L)	<10	NS	<10	NS	NS	<10	<10	NS	<10	NS	NS	<10	NS	NS	NS
Chloroform (ug/L)	<1	NS	<1	NS	NS	<1	<1	NS	<1	NS	NS	<1	NS	NS	NS
Tetrachloroethene (ug/L)	<1	NS	<1	NS	NS	<1	<1	NS	<1	NS	NS	<1	NS	NS	NS
TPH-DRO (mg/L)	<0.1	NS	<0.1	NS	NS	11	<0.1	NS	<0.1	NS	NS	<0.1	NS	<0.1	NS
TPH-GRO (mg/L)	NS	NS	NS	NS	NS	<0.1	<0.1	NS	<0.1	NS	NS	<0.1	NS	NS	NS

MW-24

	5-Jun-12	27-Jul-12	5-Sep-12	1-Oct-12	5-Nov-12	4-Dec-12	7-Jan-13	5-Feb-13	4-Mar-13	8-Apr-13	6-May-13	4-Jun-13	24-Jul-13	21-Aug-13	24-Sep-13
Benzene (ug/L)	<1	NS	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NS	NS	NS
Toluene (ug/L)	<1	NS	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NS	NS	NS
Ethylbenzene (ug/L)	<1	NS	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NS	NS	NS
Total Xylenes (ug/L)	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	NS	NS
TOTAL BTEX (ug/L)	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	NS	NS
Isopropylbenzene (ug/L)	<1	NS	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NS	NS	NS
Naphthalene (ug/L)	<1	NS	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NS	NS	NS
Acetone (ug/L)	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	NS	NS	NS
Chloroform (ug/L)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NS	NS	NS
Tetrachloroethene (ug/L)	<1	NS	<1	<1	<1	<1	<1	<1	1.1	<1	<1	<1	NS	NS	NS
TPH-DRO (mg/L)	<0.1	NS	<0.1	<0.1	<0.1	0.25	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.11	<0.1	<0.1
TPH-GRO (mg/L)	NS	NS	NS	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NS	NS	NS

MW-33

	5-Jun-12	27-Jul-12	5-Sep-12	1-Oct-12	5-Nov-12	4-Dec-12	7-Jan-13	5-Feb-13	4-Mar-13	8-Apr-13	6-May-13	4-Jun-13	24-Jul-13	21-Aug-13	24-Sep-13
Benzene (ug/L)	<1	NS	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NS	NS	NS
Toluene (ug/L)	<1	NS	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NS	NS	NS
Ethylbenzene (ug/L)	<1	NS	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NS	NS	NS
Total Xylenes (ug/L)	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	NS	NS
TOTAL BTEX (ug/L)	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	NS	NS
Isopropylbenzene (ug/L)	<1	NS	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NS	NS	NS
Naphthalene (ug/L)	<1	NS	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NS	NS	NS
Acetone (ug/L)	<10	NS	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	NS	NS	NS
Chloroform (ug/L)	<1	NS	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NS	NS	NS
Tetrachloroethene (ug/L)	<1	NS	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NS	NS	NS
TPH-DRO (mg/L)	<0.1	NS	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.11	<0.1	0.31	<0.1	0.17
TPH-GRO (mg/L)	NS	NS	NS	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NS	NS	NS

MW-34

	5-Jun-12	27-Jul-12	5-Sep-12	1-Oct-12	5-Nov-12	4-Dec-12	7-Jan-13	5-Feb-13	4-Mar-13	8-Apr-13	6-May-13	4-Jun-13	24-Jul-13	21-Aug-13	24-Sep-13
Benzene (ug/L)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NS	NS	NS
Toluene (ug/L)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NS	NS	NS
Ethylbenzene (ug/L)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NS	NS	NS
Total Xylenes (ug/L)	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	NS	NS
TOTAL BTEX (ug/L)	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	NS	NS
Isopropylbenzene (ug/L)	<1	<1	<1	<1	<1	<1	<1	<1	<1	1.1	1.2	1.5	NS	NS	NS
Naphthalene (ug/L)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NS	NS	NS
Acetone (ug/L)	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	NS	NS	NS
Chloroform (ug/L)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NS	NS	NS
Tetrachloroethene (ug/L)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NS	NS	NS
TPH-DRO (mg/L)	0.14	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.14	0.25	0.13	<0.1	<0.1
TPH-GRO (mg/L)	NS	NS	NS	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NS	NS	NS

MW-35

	5-Jun-12	27-Jul-12	5-Sep-12	1-Oct-12	5-Nov-12	4-Dec-12	7-Jan-13	5-Feb-13	4-Mar-13	8-Apr-13	6-May-13	4-Jun-13	24-Jul-13	21-Aug-13	24-Sep-13
Benzene (ug/L)	<1	NS	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NS	NS	NS
Toluene (ug/L)	<1	NS	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NS	NS	NS
Ethylbenzene (ug/L)	<1	NS	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NS	NS	NS
Total Xylenes (ug/L)	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	NS	NS
TOTAL BTEX (ug/L)	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	NS	NS
Isopropylbenzene (ug/L)	<1	NS	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NS	NS	NS
Naphthalene (ug/L)	<1	NS	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NS	NS	NS
Acetone (ug/L)	<10	NS	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	NS	NS	NS
Chloroform (ug/L)	<1	NS	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NS	NS	NS
Tetrachloroethene (ug/L)	<1	NS	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NS	NS	NS
TPH-DRO (mg/L)	<0.1	NS	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.16	<0.1	<0.1	<0.1	<0.1
TPH-GRO (mg/L)	NS	NS	NS	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NS	NS	NS

MW-48

	8-Apr-13	6-May-13	3-Jun-13	24-Jul-13	21-Aug-13	24-Sep-13
Benzene (ug/L)	<1	<1	<1	NS	NS	NS
Toluene (ug/L)	<1	<1	<1	NS	NS	NS
Ethylbenzene (ug/L)	<1	<1	<1	NS	NS	NS
Total Xylenes (ug/L)	<2	<2	<2	NS	NS	NS
TOTAL BTEX (ug/L)	<2	<2	<2	NS	NS	NS
Isopropylbenzene (ug/L)	<1	<1	<1	NS	NS	NS
Naphthalene (ug/L)	<1	<1	<1	NS	NS	NS
Acetone (ug/L)	<10	<10	<10	NS	NS	NS
Chloroform (ug/L)	<1	<1	<1	NS	NS	NS
Tetrachloroethene (ug/L)	<1	<1	<1	NS	NS	NS
TPH-DRO (mg/L)	<0.1	<0.1	<0.1	0.11	<0.1	<0.1
TPH-GRO (mg/L)	<0.1	<0.1	<0.1	NS	NS	NS

MW-49

	8-Apr-13	6-May-13	3-Jun-13	24-Jul-13	21-Aug-13	24-Sep-13
Benzene (ug/L)	<1	<1	<1	NS	NS	NS
Toluene (ug/L)	<1	<1	<1	NS	NS	NS
Ethylbenzene (ug/L)	<1	<1	<1	NS	NS	NS
Total Xylenes (ug/L)	<2	<2	<2	NS	NS	NS
TOTAL BTEX (ug/L)	<2	<2	<2	NS	NS	NS
Isopropylbenzene (ug/L)	<1	<1	<1	NS	NS	NS
Naphthalene (ug/L)	<1	<1	<1	NS	NS	NS
Acetone (ug/L)	<10	<10	<10	NS	NS	NS
Chloroform (ug/L)	<1	<1	<1	NS	NS	NS
Tetrachloroethene (ug/L)	<1	<1	<1	NS	NS	NS
TPH-DRO (mg/L)	<0.1	<0.1	0.32	0.11	<0.1	<0.1
TPH-GRO (mg/L)	<0.1	<0.1	<0.1	NS	NS	NS

MW-50

	8-Apr-13	6-May-13	3-Jun-13	24-Jul-13	21-Aug-13	24-Sep-13
Benzene (ug/L)	<1	<1	<1	NS	NS	NS
Toluene (ug/L)	<1	<1	<1	NS	NS	NS
Ethylbenzene (ug/L)	<1	<1	<1	NS	NS	NS
Total Xylenes (ug/L)	<2	<2	<2	NS	NS	NS
TOTAL BTEX (ug/L)	<2	<2	<2	NS	NS	NS
Isopropylbenzene (ug/L)	<1	<1	<1	NS	NS	NS
Naphthalene (ug/L)	<1	<1	<1	NS	NS	NS
Acetone (ug/L)	<10	<10	<10	NS	NS	NS
Chloroform (ug/L)	<1	<1	<1	NS	NS	NS
Tetrachloroethene (ug/L)	<1	<1	<1	NS	NS	NS
TPH-DRO (mg/L)	<0.1	<0.1	0.35	0.11	<0.1	<0.1
TPH-GRO (mg/L)	<0.1	<0.1	<0.1	NS	NS	NS

Table 1. Summary of water quality data for selected downgradient monitoring wells at Chester River Hospital Center, Chestertown, Maryland.

APPENDIX A

Well Gauging Reports

&

Field Reports

PETROLEUM PRODUCT / WATER - LEVEL DATA SHEET

W.O. #: 2781

PROJECT: Chester River Hospital Center
LOCATION: Chestertown, Maryland

DATE: 24-Sep-2013
WEATHER: 60 F
COLLECTED BY: TL, RB
ENTERED BY: TL

Type product: Fuel oil
Petro correction factor: 0.80

Well Number	Measuring Point	Depth to Product (ft)	Product Thickness (ft)	Depth to Water (ft)	Product Thickness (ft)	Corrected Water Elevation (ft)	Corrected Water Elevation (ft)	Remarks
MW-1	Lip of Casing	57.05		48.27		8.78	8.78	
MW-2	Lip of Casing	56.37		47.87		8.50	8.50	
MW-3	Lip of Casing	50.55		42.81		7.74	7.74	
MW-4	Lip of Casing	53.40		45.00		8.40	8.40	
MW-5	Lip of Casing	61.08		52.31		8.77	8.77	
MW-6	Lip of Casing	------	------	------	------	------	------	well destroyed in building expansion Nov 2000
MW-7	Lip of Casing	------	------	------	------	------	------	well destroyed in building expansion Nov 2000
MW-8	Lip of Casing	------	------	------	------	------	------	well abandoned Jul 2013
MW-9	Lip of Casing	46.10	41.10	41.10	0.00	5.00	5.00	sheen
MW-10	Lip of Casing	------	------	------	------	------	------	well abandoned Nov 2012
MW-10R	Lip of Casing	48.70		42.25		6.45	6.45	
MW-11	Lip of Casing	41.49		34.93		6.56	6.56	
MW-12	Lip of Casing	44.46		38.06		6.40	6.40	
MW-13	Lip of Casing	41.70	36.41	36.41	0.00	5.29	5.29	sheen
MW-14	Lip of Casing	41.38	37.36	37.40	0.04	4.02	4.01	installed absorbent wic
MW-15	Lip of Casing	35.01		28.45		6.56	6.56	sampled
MW-16	Lip of Casing	35.55		29.50		6.05	6.05	sampled
MW-17	Lip of Casing	35.49		28.56		6.93	6.93	
MW-18	Lip of Casing	35.82		29.50		6.32	6.32	
MW-19	Lip of Casing	38.85		33.51		5.34	5.34	sampled
MW-20	Lip of Casing	38.72		33.51		5.21	5.21	sampled
MW-21	Lip of Casing	38.55		32.49		6.06	6.06	
MW-22	Lip of Casing	47.04	45.70	45.70	0.00	1.34	1.34	film
MW-23	Lip of Casing	35.95		29.78		6.17	6.17	
MW-24	Lip of Casing	36.56		30.46		6.10	6.10	sampled
MW-25	Lip of Casing	38.10		29.61		8.49	6.49	
MW-27	Lip of Casing	------	------	------	------	------	------	well abandoned Nov 2006
MW-28	Lip of Casing	35.90		28.97		6.93	6.93	
MW-29	Lip of Casing	35.15		28.90		6.25	6.25	
MW-30	Lip of Casing	------	------	------	------	------	------	well destroyed in building expansion Nov 2000
MW-31	Lip of Casing	------	------	------	------	------	------	well abandoned Nov 2012
MW-31R	Lip of Casing	47.40		40.03		7.37	7.37	
MW-32	Lip of Casing	47.41		40.87		6.54	6.54	
MW-33	Lip of Casing	36.52		30.76		5.76	5.76	sampled
MW-34	Lip of Casing	36.64		30.81		5.83	5.83	sampled
MW-35	Lip of Casing	38.62		32.62		6.00	6.00	sampled
MW-37	Lip of Casing	50.54	42.65	42.65	0.00	7.89	7.89	film
MW-38	Lip of Casing	------	------	------	------	------	------	pump stuck in well - not able to gauge
RW-1B	Lip of Casing	46.71	47.29	47.29	0.00	-0.58	-0.58	film
RW-2D	Lip of Casing	40.54	44.53	44.53	0.00	-3.99	-3.99	sheen
RW-3B	Lip of Casing	39.45	41.60	41.60	0.00	-2.15	-2.15	film
MW-40	Lip of Casing	48.69	42.86	42.86	0.00	5.83	5.83	sheen
MW-41	Lip of Casing	42.92	38.43	38.43	0.00	4.49	4.49	sheen
RW-4	Lip of Casing	48.18	45.16	45.16	0.00	3.02	3.02	film
RW-5	Lip of Casing	43.34	42.45	42.45	0.00	0.89	0.89	sheen
RW-6	Lip of Casing	47.22	49.11	49.11	0.00	-1.89	-1.89	sheen
RW-2A	Lip of Casing	------	------	------	------	------	------	well abandoned Mar 2008
RW-2B	Lip of Casing	------	------	------	------	------	------	well abandoned Mar 2008
MP-2B	Lip of Casing	------	35.23	35.27	0.04	------	------	installed absorbent wic
RW-2C	Lip of Casing	------	------	------	------	------	------	well abandoned Sep 2003
RW-3A	Lip of Casing	------	------	------	------	------	------	well abandoned Sep 2003
MP-3A	Lip of Casing	------	35.11	35.11	0.00	------	------	sheen
MW-42	Lip of Casing	46.15	41.09	41.11	0.02	5.06	5.06	installed absorbent wic
MW-43	Lip of Casing	47.90		42.43		5.47	5.47	
MW-44	Lip of Casing	47.20		40.39		6.81	6.81	
MW-45	Lip of Casing	40.91		34.90		6.01	6.01	
MW-46	Lip of Casing	41.08	36.46	36.46	0.00	4.62	4.62	film
MW-47	Lip of Casing	40.74				------	------	under construction equipment - not gauged
MW-48	Lip of Casing	36.22		30.00		6.22	6.22	sampled
MW-49	Lip of Casing	35.49		29.22		6.27	6.27	sampled
MW-50	Lip of Casing	35.64		29.55		6.09	6.09	sampled
IW-1	Lip of Casing	------				------	------	not accessible - not gauged

Project Name:	**Chester River Hospital Center**	Date:	**24-Sep-2013**
Project #:	**2781**	Time on - site:	**8:30 AM**
Location:	**Chestertown, Maryland**	Weather:	**60 F**
Personnel present at site:	**TL, RB**	Vehicle:	**98 Ranger**

Reason for site visit:	yes	no	
Surveying	☐	☑	monthly sampling of 11 wells south of Brown St
Monitoring	☑	☐	
Sampling	☑	☐	
Other	☐	☑	
Recovery system maintenance	☑	☐	
Recovery system repair	☐	☑	

Scheduled Activities	Checklist	yes	no	n/a	Exceptions (with explanation and comments)
Routine Monitoring	Measured water & petroleum levels	☑	☐	☐	
	Pumped petroleum from wells	☐	☑	☐	
	Emptied petro trap	☐	☐	☑	
	Installed, replaced, or inspected wics	☑	☐	☐	
	Measured and recorded system data	☑	☐	☐	
	Surveyed well elevations	☐	☑	☐	
	Inspected system discharge at storm drain	☑	☐	☐	
Sampling	Groundwater sampling(note which wells were sampled on petro form)	☑	☐	☐	11 wells south of Brown Street and system discharge
	Petroleum sampling(note which wells were sampled on petro form)	☐	☑	☐	
	Soil sampling	☐	☑	☐	
	Vapor system sampling	☐	☐	☑	
	Collected sample(s) in lab bottle(s) & chilled	☑	☐	☐	
	Filled out labels and chain-of-custody	☑	☐	☐	
Other Activities	Recorded amount recovered	☐	☐	☑	
	Completed site sketch	☐	☐	☑	
	Recovery system repair	☐	☑	☐	
	Completed materials and equipment form	☑	☐	☐	

Comments Observations

Gauged all wells and checked system
Absorbent wics installed in MW-14, MW-42 and MP-2B
Replaced bag filters

Monthly sampling of 11 downgradient wells for TPH-DRO; also sampled system discharge

Construction around RW-1B beginning tomorrow; therefore, RW-1B was shut down today, the pump was pulled and the well abandoned; RW-1B ending totalizer reading was 59500955

APPENDIX B

Laboratory Analytical Reports

Analytical Report for

Earth Data, Inc

Certificate of Analysis No.: 13092507

Project Manager: Andrew Bullen
Project Name : Chester River Hospital Center
Project Location: Chestertown, MD
Project ID : 2781

October 2, 2013

Phase Separation Science, Inc.
6630 Baltimore National Pike
Baltimore, MD 21228
Phone: (410) 747-8770
Fax: (410) 788-8723

OFFICES:
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ROUTE 40 WEST
BALTIMORE, MD 21228
410-747-8770
800-932-9047
FAX 410-788-8723

PHASE SEPARATION SCIENCE, INC.

October 2, 2013

Andrew Bullen
Earth Data, Inc
131 Comet Drive
Centerville, MD 21617

Reference: PSS Work Order(s) No: **13092507**
Project Name: Chester River Hospital Center
Project Location: Chestertown, MD
Project ID.: 2781

Dear Andrew Bullen :

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Work Order(s) numbered **13092507**.

All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on October 30, 2013. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt , the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,

Dan Prucnal
Laboratory Manager

Sample Summary

Client Name: Earth Data, Inc

Project Name: Chester River Hospital Center

Work Order Number(s): **13092507**

Project ID: 2781

The following samples were received under chain of custody by Phase Separation Science (PSS) on 09/25/2013 at 11:56 am

Lab Sample Id	Sample Id	Matrix	Date/Time Collected
13092507-001	MW-15	GROUND WATER	09/24/13 14:58
13092507-002	MW-16	GROUND WATER	09/24/13 12:13
13092507-003	MW-19	GROUND WATER	09/24/13 13:10
13092507-004	MW-20	GROUND WATER	09/24/13 13:17
13092507-005	MW-24	GROUND WATER	09/24/13 11:57
13092507-006	MW-33	GROUND WATER	09/24/13 12:24
13092507-007	MW-34	GROUND WATER	09/24/13 12:40
13092507-008	MW-35	GROUND WATER	09/24/13 12:52
13092507-009	MW-48	GROUND WATER	09/24/13 13:55
13092507-010	MW-49	GROUND WATER	09/24/13 14:40
13092507-011	MW-50	GROUND WATER	09/24/13 14:26
13092507-012	System Discharge	GROUND WATER	09/24/13 15:15

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. The following analytical results are never reported on a dry weight basis: pH, flashpoint, moisture and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminates, and part 141.3, for the secondary drinking water contaminates.
5. The analyses of chlorine, pH, dissolved oxygen, temperature and sulfite for non-potable water samples tested for compliance for Virginia Pollution Discharge Elimination System (VDPES) permits and Virginia Pollutant Abatement (VPA) permits, have a maximum holding time of 15 minutes established by 40CFR136.3.

Standard Flags/Abbreviations:

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
C Results Pending Final Confirmation.
E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
Fail The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
J The target analyte was positively identified below the reporting limit but greater than the LOD.
LOD Limit of Detection. An estimate of the minimum amount of a substance that an analytical process can reliably detect. An LOD is analyte and matrix specific.
ND Not Detected at or above the reporting limit.
RL PSS Reporting Limit.
U Not detected.

Case Narrative Summary

Client Name: Earth Data, Inc

Project Name: Chester River Hospital Center

Work Order Number(s): 13092507
Project ID: 2781

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Sample Receipt:

All sample receipt conditions were acceptable.

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.

OFFICES:
6630 BALTIMORE NATIONAL PIKE
ROUTE 40 WEST
BALTIMORE, MD 21228
410-747-8770
800-932-9047
FAX 410-788-8723

PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 13092507
Earth Data, Inc, Centerville, MD
October 2, 2013

Project Name: Chester River Hospital Center
Project Location: Chestertown, MD
Project ID: 2781

Sample ID: MW-15 **Date/Time Sampled: 09/24/2013 14:58** **PSS Sample ID: 13092507-001**
Matrix: GROUND WATER **Date/Time Received: 09/25/2013 11:56**
Total Petroleum Hydrocarbons - DRO Analytical Method: SW-846 8015 C Preparation Method: 3510C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-DRO (Diesel Range Organics)	ND	mg/L	0.10		1	09/30/13	09/30/13 15:14	1040

Sample ID: MW-16 **Date/Time Sampled: 09/24/2013 12:13** **PSS Sample ID: 13092507-002**
Matrix: GROUND WATER **Date/Time Received: 09/25/2013 11:56**
Total Petroleum Hydrocarbons - DRO Analytical Method: SW-846 8015 C Preparation Method: 3510C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-DRO (Diesel Range Organics)	ND	mg/L	0.10		1	09/30/13	09/30/13 15:36	1040

Sample ID: MW-19 **Date/Time Sampled: 09/24/2013 13:10** **PSS Sample ID: 13092507-003**
Matrix: GROUND WATER **Date/Time Received: 09/25/2013 11:56**
Total Petroleum Hydrocarbons - DRO Analytical Method: SW-846 8015 C Preparation Method: 3510C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-DRO (Diesel Range Organics)	ND	mg/L	0.10		1	09/30/13	09/30/13 15:36	1040

Sample ID: MW-20 **Date/Time Sampled: 09/24/2013 13:17** **PSS Sample ID: 13092507-004**
Matrix: GROUND WATER **Date/Time Received: 09/25/2013 11:56**
Total Petroleum Hydrocarbons - DRO Analytical Method: SW-846 8015 C Preparation Method: 3510C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-DRO (Diesel Range Organics)	**1.1**	mg/L	0.10		1	09/30/13	09/30/13 15:59	1040

Sample ID: MW-24 **Date/Time Sampled: 09/24/2013 11:57** **PSS Sample ID: 13092507-005**
Matrix: GROUND WATER **Date/Time Received: 09/25/2013 11:56**
Total Petroleum Hydrocarbons - DRO Analytical Method: SW-846 8015 C Preparation Method: 3510C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-DRO (Diesel Range Organics)	ND	mg/L	0.10		1	09/30/13	09/30/13 15:59	1040

Sample ID: MW-33 **Date/Time Sampled: 09/24/2013 12:24** **PSS Sample ID: 13092507-006**
Matrix: GROUND WATER **Date/Time Received: 09/25/2013 11:56**
Total Petroleum Hydrocarbons - DRO Analytical Method: SW-846 8015 C Preparation Method: 3510C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-DRO (Diesel Range Organics)	**0.17**	mg/L	0.10		1	09/30/13	09/30/13 16:21	1040

OFFICES:
6630 BALTIMORE NATIONAL PIKE
ROUTE 40 WEST
BALTIMORE, MD 21228
410-747-8770
800-932-9047
FAX 410-788-8723

PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 13092507
Earth Data, Inc, Centerville, MD
October 2, 2013

Project Name: Chester River Hospital Center
Project Location: Chestertown, MD
Project ID: 2781

Sample ID: MW-34 **Date/Time Sampled: 09/24/2013 12:40** **PSS Sample ID: 13092507-007**
Matrix: GROUND WATER **Date/Time Received: 09/25/2013 11:56**
Total Petroleum Hydrocarbons - DRO Analytical Method: SW-846 8015 C Preparation Method: 3510C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-DRO (Diesel Range Organics)	ND	mg/L	0.10		1	09/30/13	09/30/13 16:21	1040

Sample ID: MW-35 **Date/Time Sampled: 09/24/2013 12:52** **PSS Sample ID: 13092507-008**
Matrix: GROUND WATER **Date/Time Received: 09/25/2013 11:56**
Total Petroleum Hydrocarbons - DRO Analytical Method: SW-846 8015 C Preparation Method: 3510C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-DRO (Diesel Range Organics)	ND	mg/L	0.10		1	09/30/13	09/30/13 16:43	1040

Sample ID: MW-48 **Date/Time Sampled: 09/24/2013 13:55** **PSS Sample ID: 13092507-009**
Matrix: GROUND WATER **Date/Time Received: 09/25/2013 11:56**
Total Petroleum Hydrocarbons - DRO Analytical Method: SW-846 8015 C Preparation Method: 3510C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-DRO (Diesel Range Organics)	ND	mg/L	0.10		1	09/30/13	09/30/13 16:43	1040

Sample ID: MW-49 **Date/Time Sampled: 09/24/2013 14:40** **PSS Sample ID: 13092507-010**
Matrix: GROUND WATER **Date/Time Received: 09/25/2013 11:56**
Total Petroleum Hydrocarbons - DRO Analytical Method: SW-846 8015 C Preparation Method: 3510C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-DRO (Diesel Range Organics)	ND	mg/L	0.10		1	09/30/13	09/30/13 17:27	1040

Sample ID: MW-50 **Date/Time Sampled: 09/24/2013 14:26** **PSS Sample ID: 13092507-011**
Matrix: GROUND WATER **Date/Time Received: 09/25/2013 11:56**
Total Petroleum Hydrocarbons - DRO Analytical Method: SW-846 8015 C Preparation Method: 3510C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-DRO (Diesel Range Organics)	ND	mg/L	0.10		1	09/30/13	09/30/13 17:27	1040

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ROUTE 40 WEST
BALTIMORE, MD 21228
410-747-8770
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FAX 410-788-8723

PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 13092507
Earth Data, Inc, Centerville, MD
October 2, 2013

Project Name: Chester River Hospital Center
Project Location: Chestertown, MD
Project ID: 2781

Sample ID: System Discharge **Date/Time Sampled: 09/24/2013 15:15** **PSS Sample ID: 13092507-012**
Matrix: GROUND WATER **Date/Time Received: 09/25/2013 11:56**

Total Petroleum Hydrocarbons - DRO — Analytical Method: SW-846 8015 C — Preparation Method: 3510C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-DRO (Diesel Range Organics)	**0.18**	mg/L	0.10		1	09/30/13	09/30/13 17:50	1040

BTEX MTBE TBA Naphthalene — Analytical Method: SW-846 8260 B — Preparation Method: 5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
tert-Butyl alcohol	ND	ug/L	20		1	09/30/13	09/30/13 18:54	1011
Methyl-t-butyl ether	ND	ug/L	1.0		1	09/30/13	09/30/13 18:54	1011
Benzene	ND	ug/L	1.0		1	09/30/13	09/30/13 18:54	1011
Toluene	ND	ug/L	1.0		1	09/30/13	09/30/13 18:54	1011
Ethylbenzene	ND	ug/L	1.0		1	09/30/13	09/30/13 18:54	1011
m,p-Xylenes	ND	ug/L	2.0		1	09/30/13	09/30/13 18:54	1011
o-Xylene	ND	ug/L	1.0		1	09/30/13	09/30/13 18:54	1011
Naphthalene	ND	ug/L	1.0		1	09/30/13	09/30/13 18:54	1011

SAMPLE CHAIN OF CUSTODY/AGREEMENT FORM

PHASE SEPARATION SCIENCE, INC.

www.phaseonline.com
email: info@phaseonline.com

(1)
*CLIENT: Earth Data Inc. *OFFICE LOC. Centreville, MD
*PROJECT MGR: A. Bullen *PHONE NO.: (410) 758-8160
EMAIL: abullen@earthdatainc.com FAX NO.: (410) 758-8168
*PROJECT NAME Chesk-River Hospital Center PROJECT NO.: 2781
SITE LOCATION: Chestertown, MD P.O. NO.:
SAMPLER(S): T. Lee / R. Beam DW CERT NO.:

PSS Work Order #: 13092507 PAGE 1 OF 2

Matrix Codes: SW=Surface Wtr DW=Drinking Wtr GW=Ground Wtr WW=Waste Wtr O=Oil S=Soil L=Liquid SOL=Solid A=Air WI=Wipe

(2)

LAB NO.	*SAMPLE IDENTIFICATION	*DATE (SAMPLED)	*TIME (SAMPLED)	MATRIX (See Codes)	No. CONTAINERS	SAMPLE TYPE C = COMP G = GRAB	Preservatives Used: HCl / Analysis/Method Required (3) * TPH-DRO	REMARKS
1	MW-15	9-24-13	1458	GW	1	G	X	
2	MW-16	9-24-13	1213	GW	1	G	X	
3	MW-19	9-24-13	1310	GW	1	G	X	
4	MW-20	9-24-13	1317	GW	1	G	X	
5	MW-24	9-24-13	1157	GW	1	G	X	
6	MW-33	9-24-13	1224	GW	1	G	X	
7	MW-34	9-24-13	1240	GW	1	G	X	
8	MW-35	9-24-13	1252	GW	1	G	X	
9	MW-48	9-24-13	1355	GW	1	G	X	
10	MW-49	9-24-13	1440	GW	1	G	X	

(5)

Relinquished By:	Date	Time	Received By:
(1) T. Lee	9/25/13	1025	D. Towome
(2) D. Towome	"	1150	11:56 Robert Rhody
(3)			
(4)			

(4)
*Requested TAT (One TAT per COC)
☒ 5-Day ☐ 3-Day ☐ 2-Day
☐ Next Day ☐ Emergency ☐ Other

Data Deliverables Required: COA ☐ QC SUMM ☐ CLP LIKE ☐ OTHER

# of Coolers: 1
Custody Seal: Abs
Ice Present: Pres Temp: 5°C
Shipping Carrier: TYE

Special Instructions:

DW COMPLIANCE? YES ☐
EDD FORMAT TYPE
STATE RESULTS REPORTED TO: MD ☐ DE ☐ PA ☐ VA ☐ WV ☐ OTHER

6630 Baltimore National Pike • Route 40 West • Baltimore, Maryland 21228 • (410) 747-8770 • (800) 932-9047 • Fax (410) 788-8723

The client (Client Name), by signing, or having client's agent sign, this "Sample Chain of Custody/Agreement Form", agrees to pay for the above requested services per the latest version of the Service Brochure or PSS-provided quotation including any and all attorney's or other reasonable fees if collection becomes necessary. * = REQUIRED

Phase Separation Science, Inc

Sample Receipt Checklist

Work Order #	13092507	**Received By**	Robyn Rhudy
Client Name	Earth Data, Inc	**Date Received**	09/25/2013 11:56:00 AM
Project Name	Chester River Hospital Center	**Delivered By**	Trans Time Express
Project Number	2781	**Tracking No**	Not Applicable
Disposal Date	10/30/2013	**Logged In By**	Robyn Rhudy

Shipping Container(s)

No. of Coolers	1	Ice	Present
		Temp (deg C)	5
Custody Seal(s) Intact?	N/A	Temp Blank Present	No
Seal(s) Signed / Dated?	N/A		

Documentation

		Sampler Name	Tracy Lee
		MD DW Cert. No.	N/A
COC agrees with sample labels?	Yes		
Chain of Custody	Yes		

Sample Container

		Custody Seal(s) Intact?	Not Applicable
Appropriate for Specified Analysis?	Yes	Seal(s) Signed / Dated	Not Applicable
Intact?	Yes		
Labeled and Labels Legible?	Yes		

Total No. of Samples Received 12

Total No. of Containers Received 15

Preservation

Metals	(pH<2)	N/A
Cyanides	(pH>12)	N/A
Sulfide	(pH>9)	N/A
TOC, COD, Phenols	(ph<2)	N/A
TOX, TKN, NH3, Total Phos	(pH<2)	N/A
VOC, BTEX (VOA Vials Rcvd Preserved)	(pH<2)	Yes
Do VOA vials have zero headspace?		Yes

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

Samples Inspected/Checklist Completed By: Robyn Rhudy — Date: 09/25/2013

PM Review and Approval: Lynn Moran — Date: 09/25/2013