memorandum

To:	Ms. Michelle Kaysen and Mr. Kevin Turner, USEPA Region 5
From:	Mr. Paul Michalski, Trihydro Corporation
cc:	Mr. James Sanders, Apex Oil Company, Inc.
Date:	June 2, 2015
Re:	Summary of Soil Vapor Extraction System Effectiveness Zone 1 Expansion, Hartford Petroleum Release Site, Hartford, Illinois

This technical memorandum provides a summary of the expansion of the Hartford Soil Vapor Extraction (SVE) system completed on West Birch and West Arbor Streets at the Hartford Petroleum Release Site (Hartford Site) located in Hartford, Illinois. Six additional extraction wells (HSVE-105S, HSVE-105D, HSVE-106S, HSVE-106D, HSVE-107S, and HSVE-107D) were installed and connected to the SVE system, in general accordance with the *Zone 1 Soil Vapor Extraction System Optimization Work Plan, Hartford Petroleum Release Site, Hartford, Illinois* (*Zone 1 SVE Optimization Work Plan*, Trihydro 2014). Routine and river stage triggered monitoring performed within several structures on West Birch Street, as well as monitoring performed in the nested vapor monitoring wells, multipurpose monitoring points, and SVE wells installed in Zone 1 indicated that the SVE system was not mitigating the vapor intrusion pathway within this portion of the Hartford Site during rapid increases in the Mississippi River stage (Trihydro 2014). Expansion of the SVE system in Zone 1 was performed to mitigate the vapor intrusion pathway during these periods of rapid rise in the river stage and also to enhance mass recovery of volatile petroleum hydrocarbons from the smear zone beneath West Birch and West Arbor Streets.

Abandonment of Existing Shallow SVE Wells

Prior to installing the six additional SVE wells in Zone 1, three existing shallow wells (HSVE-025S, HSVE-026S, and HSVE-027S) were disconnected from the system. Wells HSVE-025S and HSVE-026S were no longer effective due to the preferential recovery of atmospheric air stemming from the shallow screen interval within these two wells (referred to as short circuiting). Additionally, well HSVE-027S had reduced air flow resulting from installation of the screen within lower permeability clay and silt lenses. The co-located deep wells (HSVE-025D, HSVE-026D, and HSVE-027D) were installed with longer screen intervals that extend from the A Clay into the Rand stratum and will continue to be utilized when the water table is low. The three shallow wells were plugged and abandoned by the Hartford Working Group on March 20, 2015 and the well vaults were subsequently removed and repairs to the roadway was completed on May 15, 2015.

Installation of Additional SVE Wells

Three sets of paired extraction wells (HSVE-105S/D, HSVE-106S/D, and HSVE-107S/D) were installed between December 8 and December 12, 2014. Each location includes a shallow extraction well (designated with an S suffix) screened within the North Olive stratum and a deep well (designated with a

D suffix) screened across the smear zone within the Main Sand stratum. All drilling locations were cleared of underground utilities, as well as the lateral transmission lines for the SVE system using ground penetrating radar prior to conducting any drilling activities.

A 2-inch diameter pilot boring was installed at each location using a direct-push methodology to: (1) characterize subsurface lithology, (2) screen for total volatile petroleum hydrocarbon (TVPH) concentration using a flame ionization detector (FID), and (3) define the vertical extent of the smear zone. The total depth of each pilot boring was approximately 50 feet below ground surface (ft-bgs). Following completion, the boreholes were backfilled with bentonite and the ground surface restored with an asphalt patch (HSVE-105 and HSVE-107) or covered with topsoil (HSVE-106). The lithology log and TVPH screening results for each of the pilot borings are included in Attachment A.

After abandoning the pilot boring at each of the paired well locations, two 8-inch diameter borings (shallow and deep) were installed using a hollow stem auger drilling methodology. The deep boreholes were drilled to approximately 5 feet below the extent of the smear zone (approximately 45 to 50 ft-bgs). The shallow boreholes was installed to approximately 2 feet below the bottom of the North Olive stratum at each location (approximately 20 to 23 ft-bgs).

The deep extraction wells were constructed with a sump consisting of 5 feet of 4-inch diameter blank polyvinyl chloride (PVC) casing installed below the screen interval. The screen interval consisted of 10 feet of 4-inch diameter, continuously slotted, PVC screen with a 0.010-inch slot size. Blank 4-inch diameter PVC casing was set from the top of the screen to the ground surface. A 10/20 silica sand was placed from the bottom of the boring to approximately one foot above the top of the screen interval. Approximately 2.5 feet of granular bentonite was placed above the filter pack, and the seal was hydrated for a minimum of 30 minutes prior to filling the remaining annular space with grout consisting of 95% concrete and 5% bentonite.

As depicted on Figure 1, the shallow wells were drilled adjacent to the deep SVE wells and in general, were constructed in a similar manner. The shallow wells were constructed with a sump consisting of 5 feet of 4-inch diameter blank PVC casing and 5 feet of 0.010-inch, continuously slotted PVC screen. Blank PVC casing was set from the top of the screen to the ground surface. The annular space was completed in a similar manner as the deep SVE wells. Well construction diagrams for the shallow and deep extraction wells are included in Attachment A.

Connection to the Vapor Collection System

The existing transmission lines for the vapor collection system are used for extracting vapors and groundwater from the new wells installed in Zone 1. For each well pair, a single control vault containing a Venturi flowmeter and rotary control valve was installed to monitor and adjust vapor extraction rates. The configuration within the control vaults allows for vapor recovery from both wells simultaneously;

although the shallow or deep well can also be operated individually via shut-off valves on the well head. Detailed as-built drawings of the control vault construction and wellhead connections are provided in Attachment B.

Connection of the additional SVE wells to the collection system began on February 9, 2015 and proceeded in a similar sequence at each of the SVE well locations. Detailed construction field activity logs and photo documentation are provided in Attachment C. Construction began by cutting the asphalt (for those wells installed in the roadway including HSVE-105S/D and HSVE-107S/D), then excavating soil around the newly installed SVE wells, proposed location of the control vault, as well as the terminus of the existing transmission line. Trenching was then completed from the control vault location to the existing transmission line.

Following the completion of the excavation and trenching activities, approximately 12 inches of Illinois Department of Transportation (IDOT) Coarse Aggregate No. 6 (CA6) was placed in the bottom of the trenches and vaults. The IDOT CA6 was compacted and tested. Compaction test results are provided in Attachment D. The control vault including interior piping, flowmeter, and pre-fabricated valving was then installed.

Once the control vaults were installed, pipe bedding material was placed in the trenches extending from: (1) the control vault to the six new extraction wells and (2) from the control vault to the terminus of the existing transmission line. The bedding material was compacted after placement and 4-inch diameter high density polyethylene (HDPE) pipe was installed and connected from the control vault to the terminus of the existing transmission line at each location primarily using butt fusion joints. There were a few connections that were completed using electrofusion couplings, where limited space prevented the use of butt fusion joints.

After completion of the connections between the control vault and transmission line, pneumatic leak testing was performed. A pressure of approximately 315 inches of water was applied to the HDPE lines between the control vault and the transmission pipeline. The pressure was monitored using a magnehelic gauge. Additionally, a soap and water mixture was applied along the fused connections. There were no pressure drops or visual evidence of leaks observed during pneumatic testing (Attachment E).

Following leak testing, a geotextile (Mirafi® 600x), tracer wire, and excavation caution tape were place above the HDPE pipe as shown in the as-built drawings (Attachment B). Due to unsafe conditions associated with inclement weather, work was temporarily suspended on February 16, 2015.

On February 24, 2015, construction activities resumed with installation and connection of 4-inch HDPE lines from the control vault to each extraction well. Following successful pneumatic testing (Attachment E), a protective well vault collar was grouted in place about each of the six new SVE wells.

Grout was also applied about the pipes penetrating into the control vaults. Geotextile, tracer wire, and excavation warning tape were placed above the HDPE pipe leading from the control vault to the extraction wells as shown in the as-built drawings included in Attachment B. As low ambient temperatures would limit the ability to achieve adequate compaction of CA6 backfill, flowable fill (Class 2-FF, 150 to 250 pounds per square inch) was placed above the geotextile to a level approximately coincident with the bottom of the control vault lid. The use of flowable fill was authorized by the Village of Hartford via correspondence dated February 11, 2015.

Following placement of the flowable fill, the well vault covers and gaskets were installed on each of the control vaults. Since hot mix asphalt was not available due to the cold weather, CA6 backfill was temporarily placed and compacted above the consolidated flowable fill within all the trenches and excavations in the roadway. On April 24, 2015, the CA6 backfill was excavated and where necessary the existing asphalt surface adjacent to the trenches and excavations was cut to create symmetrical patches. An IDOT specified binder course followed by surface course hot-mix asphalt was placed and compacted in three separate 3-inch lifts using a double drum roller. A plate compactor was used in areas near the vaults to prevent damage to the concrete used to support the vault. Compaction test results exceeded 95%.

Excavated Soil Characterization

During initial excavation activities near well HSVE-105S, a petroleum hydrocarbon odor was noted and upon further soils removal, a small amount of LNAPL was observed along the outside of the well casing at approximately 3.5 feet below grade. Work was stopped, and a soil sample was collected and submitted for laboratory analyses for waste characterization purposes. In addition, soils containing LNAPL near well HSVE-105S were separated and placed into a 55-gallon drum. All other excavated soils were staged in roll-off bins with tarp covers, characterized, and disposed of in accordance with applicable rules and regulations. Results of laboratory analyses for the drummed soils (sample ID "Excavated Soils, 021115") and roll-off bins (sample ID "RB20767, 021115") are provided in Attachment F. Waste manifests and landfill receipts are provided in Attachment G.

Shallow LNAPL near Well HSVE-105S

The soil sample collected near well HSVE-105S was also submitted for laboratory analysis of volatile petroleum hydrocarbons (USEPA Method 8260), semivolatile petroleum hydrocarbons (USEPA Method 8270), total petroleum hydrocarbons (USEPA Method 8015), and carbon fraction ranges (C_6-C_{10}, C_{10}-C_{21}, and C_{21}-C_{35}). A summary of the detected constituents is provided in Table 1.

In order to compare the LNAPL encountered in the shallow soil at HSVE-105S to other LNAPL samples collected from monitoring locations and wells installed across the Hartford Site, the mass fraction of

detected volatile constituents (benzene, ethylbenzene, toluene, xylene, and naphthalene) was calculated using the following equation:

$$Mass\ Fraction_x = \frac{C_x}{C_{TPH}} * 100$$

Where:

$Mass\ Fraction_x$	=	the mass fraction of constituent x in LNAPL (%)
C_x	=	concentration of constituent x in soil (mg/kg)
C_{TPH}	=	concentration of total petroleum hydrocarbon in soil (i.e., the sum of all carbon fractions reported in mg/kg)

The mass fraction of volatile constituents measured in shallow soil collected near well HSVE-105S are presented graphically on Figure 2 and compared with the mass fraction results for LNAPL samples collected from multipurpose monitoring points MP-029C, MP-029D, MP-038C, MP-039C, MP-046C, MP-047C, MP-060C, and MP-079C. The mass fraction results for these LNAPL samples were originally presented in Appendix B of the *LNAPL Component to the Conceptual Site Model, Hartford Petroleum Release Site, Hartford, Illinois* (Trihydro 2014). In addition, the mass fraction for volatile constituents reported within the LNAPL sample collected from well HSVE-105D in March 2015 are also presented on Figure 2.

The mass fraction of detected volatile constituents in the shallow soil sample collected near HSVE-105S appears distinct from the mass fraction of benzene, ethylbenzene, toluene, xylene, and naphthalene reported in the LNAPL samples collected across the Hartford Site. Ethylbenzene and total xylenes in the soil sample are depleted while toluene appears enriched compared to the majority of the LNAPL samples. These differences in the mass fraction composition and the shallow occurrence of LNAPL in soil near well HSVE-105S suggest that there is an alternate source for petroleum hydrocarbons beneath this portion of West Birch Street. Potential alternate sources and contribution or these shallow volatile constituents with respect to the vapor intrusion pathway will be considered in the context of the multiphase remedy framework for the Hartford Site.

Post-Construction Wellhead Completion and Activation

Final wellhead completion activities, including installation of straw stingers within selected extraction wells began on March 5, 2015. A 4-inch diameter sanitary well seal with a 1-inch diameter port (Campbell Manufacturing PS4x1) was installed at the top of each of the new extraction wells. A straw stinger consisting of a 1 to 2 foot section of PVC with a beveled tip, connected to 1-inch diameter clear, flexible PVC tubing was routed from the control vault through a 1.5-inch diameter conduit and into the extraction well. Straw stingers were installed in wells HSVE-105S, HSVE-106D, HSVE-107S, and

HSVE-107D. The flexible PVC tubing was connected to a 1-inch tee and shut-off valve within the control vault. Light non-aqueous phase liquid (LNAPL) was measured in well HSVE-105D and well HSVE-106S was dry; therefore, straw stingers were not installed in these two wells. Individual stinger lengths and stinger connection details are provided on the as-built drawings (Figure B-4).

On March 5, 2015, system vacuum was applied to wells HSVE-105D and HSVE-106S (not requiring stingers) and between March 16 and March 19, 2015, the remaining SVE wells were brought online. Additional stinger depth and air flow adjustments have been made to optimize the operation of these wells since activation. The deep extraction wells were operated between March 5 and April 9, 2015, during which time total hydrocarbon concentrations (including methane as measured using an FID) ranged from 180 to 1,000,000 parts per million by volume (ppmv). Vapor recovery from the deep extraction wells was terminated following several precipitation events and an increase in the water table elevations within the Main Sand stratum in early April, while the shallow wells continue to be operated. Total hydrocarbon concentrations in shallow wells HSVE-105S, HSVE-106S, and HSVE-107S have ranged from 220 to 150,000 ppmv. Flow rates have ranged from 13 to 57 standard cubic feet per minute during operation of the additional Zone 1 wells. Although, as noted on Table 3, the flow rates from the individual extraction well cannot be distinguished when the deep and shallow wells are operated concurrently.

24S-007-001

TABLES

TABLE 1. SOIL SAMPLE ANALYTICAL RESULTS SUMMARY
HARTFORD PETROLEUM RELEASE SITE, HARTFORD, ILLINOIS

Location	Date	Benzene	Ethyl-benzene	Toluene	Xylenes, Total	Naphthalene	DRO as Diesel	GRO as Gasoline
		(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
HSVE-105S (3-4 ft)	2/11/2015	50.5	15.4	225	26.9	0.068	735	5,460

Notes:

- Only detected analytes included in summary table

ft - feet below ground surface

mg/kg - milligrams per kilogram

TABLE 2. OPERATIONAL DATA FOR ZONE 1 EXPANSION WELLS
HARTFORD PETROLEUM RELEASE SITE, HARTFORD, ILLINOIS

Location	Date	Depth to Water (ft-btoc)	Depth to LNAPL (ft-btoc)	Total Depth (ft-btoc)	Top of Screen (ft-btoc)	Bottom of Screen (ft-btoc)	Open Screen (ft)	PHC (ppmv)	CH_4 (ppmv)	THC (ppmv)	O_2 (%)	CO_2 (%)	LEL (%)	PID (ppmv)	Wellhead Vacuum (in-H_2O)	Venturi Surface Temperature (^oF)	Differential Pressure (in-H_2O)	Flow (scfm)	Header Valve Open (%)	Stinger Valve Open (%)
HSVE-105S	3/5/2015	20.77	ND	22.67	12.60	17.60	5.00	--	--	--	--	--	--	--	40	36	0.00	0	0	0
	3/16/2015	17.62	ND	22.67	12.60	17.60	5.02	--	--	--	--	--	--	--	60	49	0.00	0	0	100
	3/19/2015	17.00	ND	17.95	12.60	17.60	4.40	--	--	--	--	--	--	--	81	48	0.39	35*	0	100
	3/23/2015	17.95	ND	18.00	12.60	17.60	5.35	3700	4500	8200	13.8	4.9	--	--	75	53	0.15	22*	0	100
	4/9/2015	17.93	ND	18.02	12.60	17.60	5.00	--	--	--	--	--	--	--	--	--	--	--	--	--
	4/13/2015	Dry	ND	18.00	12.60	17.60	5.00	--	--	--	--	--	--	--	91	58	1.10	56	0	100
	4/20/2015	Dry	ND	18.02	12.60	17.60	5.00	34,275	115,725	150,000	16.8	2.7	100	134	--	--	--	--	--	--
	4/28/2015	Dry	ND	18.00	12.60	17.60	5.00	--	--	--	--	--	--	--	115	57	0.24	25	0	100
	5/5/2015	Dry	ND	17.98	12.60	17.60	5.00	--	--	--	--	--	--	--	--	--	--	--	--	--
	5/11/2015	Dry	ND	18.00	12.60	17.60	5.00	--	--	--	--	--	--	--	115	64	0.37	31	0	100
	5/18/2015	Dry	ND	18.00	12.60	17.60	5.00	3,429	7,571	11,000	16.2	2.9	14	143	--	--	--	--	--	--
HSVE-106S	3/4/2015	Dry	ND	19.00	9.16	14.16	5.00	--	--	--	--	--	--	--	105	36	0.22	25	0	100
	3/16/2015	13.30	ND	16.90	9.16	14.16	4.14	--	--	--	--	--	--	--	108	49	0.28	28*	0	100
	3/19/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	104	48	0.42	35*	0	100
	3/23/2015	13.30	ND	16.00	9.16	14.16	4.14	187	63	250	19.8	1.0	--	--	106	53	0.88	50*	0	100
	4/9/2015	13.32	ND	16.00	9.16	14.16	4.16	--	--	--	--	--	--	--	--	--	--	--	--	--
	4/13/2015	10.54	ND	13.10	9.16	14.16	1.38	--	--	--	--	--	--	--	97	51	0.22	25	0	100
	4/20/2015	12.48	ND	13.53	9.16	14.16	3.32	1,075	275	1,350	19.9	0.7	2.0	97.5	--	--	--	--	--	
	4/28/2015	12.45	ND	13.62	9.16	14.16	3.29	--	--	--	--	--	--	--	107	50	1.03	54	0	100
	5/5/2015	12.90	ND	13.56	9.16	14.16	3.74	--	--	--	--	--	--	--	--	--	--	--	--	--
	5/11/2015	13.40	ND	13.60	9.16	14.16	4.24	--	--	--	--	--	--	--	114	56	1.19	57	0	100
	5/18/2015	12.85	ND	13.58	9.16	14.16	3.69	2,364	336	2,700	20.2	0.5	3.0	300	--	--	--	--	--	--
HSVE-107S	3/5/2015	17.26		18.77	12.31	17.31	4.95	--	--	--	--	--	--	--	--	--	--	--	--	--
	3/16/2015	15.35	ND	17.88	12.31	17.31	3.04	--	--	--	--	--	--	--	46	46	0.06	13*	0	100
	3/23/2015	16.05	ND	17.75	12.31	17.31	3.74	71	149	220	20.9	0.0	--	--	89	49	0.47	37*	0	100
	4/9/2015	16.07	ND	17.73	12.31	17.31	3.76	--	--	--	--	--	--	--	--	--	--	--	--	--
	4/13/2015	16.40	ND	16.80	12.31	17.31	5.00	--	--	--	--	--	--	--	93	58	0.25	27	0	100
	4/20/2015	Dry	ND	17.50	12.31	17.31	5.00	76,217	44,783	121,000	17.5	2.2	100	300	--	--	--	--	--	--
	4/28/2015	Dry	ND	16.45	12.31	17.31	5.00	--	--	--	--	--	--	--	109	53	0.27	27	0	100
	5/5/2015	Dry	ND	16.44	12.31	17.31	5.00	--	--	--	--	--	--	--	--	--	--	--	--	--
	5/11/2015	Dry	ND	16.45	12.31	17.31	5.00	--	--	--	--	--	--	--	119	60	0.17	21	0	100
	5/18/2015	Dry	ND	16.48	12.31	17.31	5.00	6,557	2,643	9,200	17.1	2.0	4.0	235	--	--	--	--	--	--
HSVE-105D	3/4/2015	35.40	35.20	47.47	32.35	42.35	2.85	--	--	--	--	--	--	--	44	35	0.00	0	16.7	--
	3/16/2015	40.51	32.30	47.22	32.35	42.35	-0.05	--	--	--	--	--	--	--	60	49	0.00	0	16.7	--
	3/23/2015	41.30	31.30	47.10	32.35	42.35	-1.05	0	1,000,000	1,000,000	4.5	6.4	--	--	75	53	0.15	22*	16.7	--
	4/9/2015	40.82	31.52	47.06	32.35	42.35	-0.83	--	--	--	--	--	--	--	--	--	--	--	--	--
	4/13/2015	33.20	33.18	47.35	32.35	42.35	0.83	--	--	--	--	--	--	--	--	--	--	--	0	--
	4/20/2015	32.77	32.75	47.20	32.35	42.35	0.40	--	--	--	--	--	--	--	--	--	--	--	--	--

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HSVE-105D	4/23/2015	32.62	ND	47.30	32.35	42.35	0.27	--	--	--	--	--	--	--	--	--	--	--	--	--
	4/28/2015	32.70	32.40	47.10	32.35	42.35	0.05	--	--	--	--	--	--	--	--	--	--	--	--	--
	5/5/2015	33.10	32.70	47.66	32.35	42.35	0.35	--	--	--	--	--	--	--	--	--	--	--	--	--
	5/11/2015	32.40	ND	47.80	32.35	42.35	0.05	--	--	--	--	--	--	--	--	--	--	--	--	--
	5/18/2015	31.78	31.76	47.02	32.35	42.35	-0.59	--	--	--	--	--	--	--	--	--	--	--	--	--
HSVE-106D	3/5/2015	37.22	ND	44.00	29.13	39.13	8.09	--	--	--	--	--	--	--	--	--	--	--	--	--
	3/16/2015	35.80	ND	44.05	29.13	39.13	6.67	--	--	--	--	--	--	--	108	49	0.28	28*	0	100
	3/19/2015	35.92	ND	44.00	29.13	39.13	6.79	--	--	--	--	--	--	--	104	48	0.42	35*	0	100
	3/23/2015	34.68	ND	44.07	29.13	39.13	5.55	598,000	105,000	703,000	4.7	10.2	--	--	106	53	0.88	50*	0	100
	4/9/2015	34.69	ND	44.05	29.13	39.13	5.56	--	--	--	--	--	--	--	--	--	--	--	--	--
	4/13/2015	35.13	ND	44.00	29.13	39.13	6.00	--	--	--	--	--	--	--	--	--	--	--	0	0
	4/20/2015	34.47	ND	44.10	29.13	39.13	5.34	--	--	--	--	--	--	--	--	--	--	--	--	--
	4/23/2015	34.35	ND	45.50	29.13	39.13	5.22	72,700	56,300	129,000	9.9	7.1	100	218	--	--	--	--	0	0
	4/28/2015	34.21	ND	45.35	29.13	39.13	5.08	--	--	--	--	--	--	--	--	--	--	--	0	0
	5/5/2015	34.49	ND	44.00	29.13	39.13	5.36	--	--	--	--	--	--	--	--	--	--	--	--	--
	5/11/2015	34.50	ND	45.50	29.13	39.13	5.37	--	--	--	--	--	--	--	--	--	--	--	--	--
	5/18/2015	33.51	ND	43.72	29.13	39.13	4.38	136,000	78,000	214,000	10.8	4.5	100	220	--	--	--	--	--	--
	05/21/2015	NA	NA	43.72	29.13	39.13	NA	--	--	--	--	--	--	--	--	--	--	--	0	100
HSVE-107D	3/5/2015	34.40	ND	48.32	31.80	41.80	2.60	--	--	--	--	--	--	--	--	--	--	--	--	--
	3/16/2015	33.42	ND	48.30	31.80	41.80	1.62	--	--	--	--	--	--	--	--	--	--	--	0	0
	3/23/2015	32.88	ND	48.40	31.80	41.80	1.08	63	117	180	20.8	0.0	--	--	89	49	0.47	37*	0	100
	4/9/2015	32.90	ND	48.38	31.80	41.80	1.10	--	--	--	--	--	--	--	--	--	--	--	--	--
	4/13/2015	32.20	ND	48.40	31.80	41.80	0.40	--	--	--	--	--	--	--	--	--	--	--	0	0
	4/20/2015	31.61	ND	48.40	31.80	41.80	-0.19	--	--	--	--	--	--	--	--	--	--	--	--	--
	4/23/2015	--	ND	48.40	31.80	41.80	--	3,314	6,786	10,100	19.0	1.1	58	156	--	--	--	--	--	--
	4/28/2015	31.30	ND	48.45	31.80	41.80	-0.50	--	--	--	--	--	--	--	--	--	--	--	0	0
	5/5/2015	31.55	ND	50.15	31.80	41.80	-0.25	--	--	--	--	--	--	--	--	--	--	--	--	--
	5/11/2015	31.13	ND	49.80	31.80	41.80	-0.67	--	--	--	--	--	--	--	--	--	--	--	--	--
	5/18/2015	30.65	ND	48.40	31.80	41.80	-1.15	--	--	--	--	--	--	--	--	--	--	--	--	--

Notes:

* - Represents combined flowrate between shallow and deep SVE wells

°F - degrees Fahrenheit

ft - feet

ft-btoc - feet below top of casing

in-H_2O - inches of water

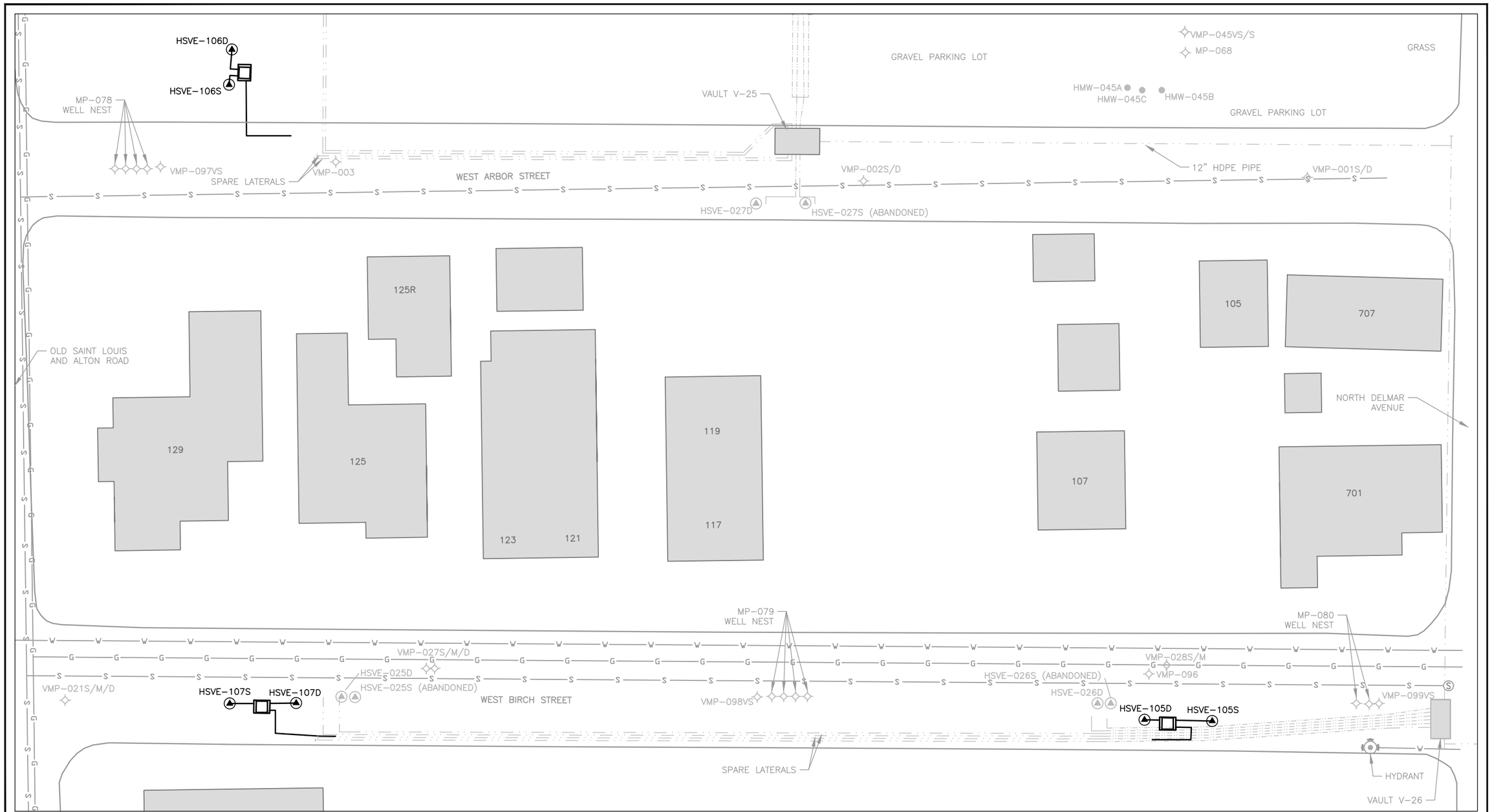
PHC - petroleum hydrocarbon concentration

ppmv - parts per million by volume

sctm - standard cubic feet per minute

THC - total hydrocarbon concentration

FIGURES



EXPLANATION

GAS LINE

WATER LINE

SEWER LINE

EXISTING SVE PIPELINE

EXPANDED SVE PIPELINE

EXISTING BUILDING OR OTHER STRUCTURE

N

0 30'

NOTE:

EXISTING SUBSURFACE SOIL VAPOR EXTRACTION INFRASTRUCTURE SHOWN IS BASED ON DRAWINGS PROVIDED BY AECOM ON BEHALF OF THE HARTFORD WORKING GROUP. THE LOCATION OF THESE ELEMENTS COULD NOT BE VERIFIED BY TRIHYDRO CORPORATION. THEREFORE, THE EXISTING SUBSURFACE SYSTEM ELEMENTS REPRESENT AN APPROXIMATE LOCATION AND MAY NOT ALIGN WITH THE SURVEYED LOCATION OF EXISTING WELLS AND EXPANDED SVE SYSTEM COMPONENTS.

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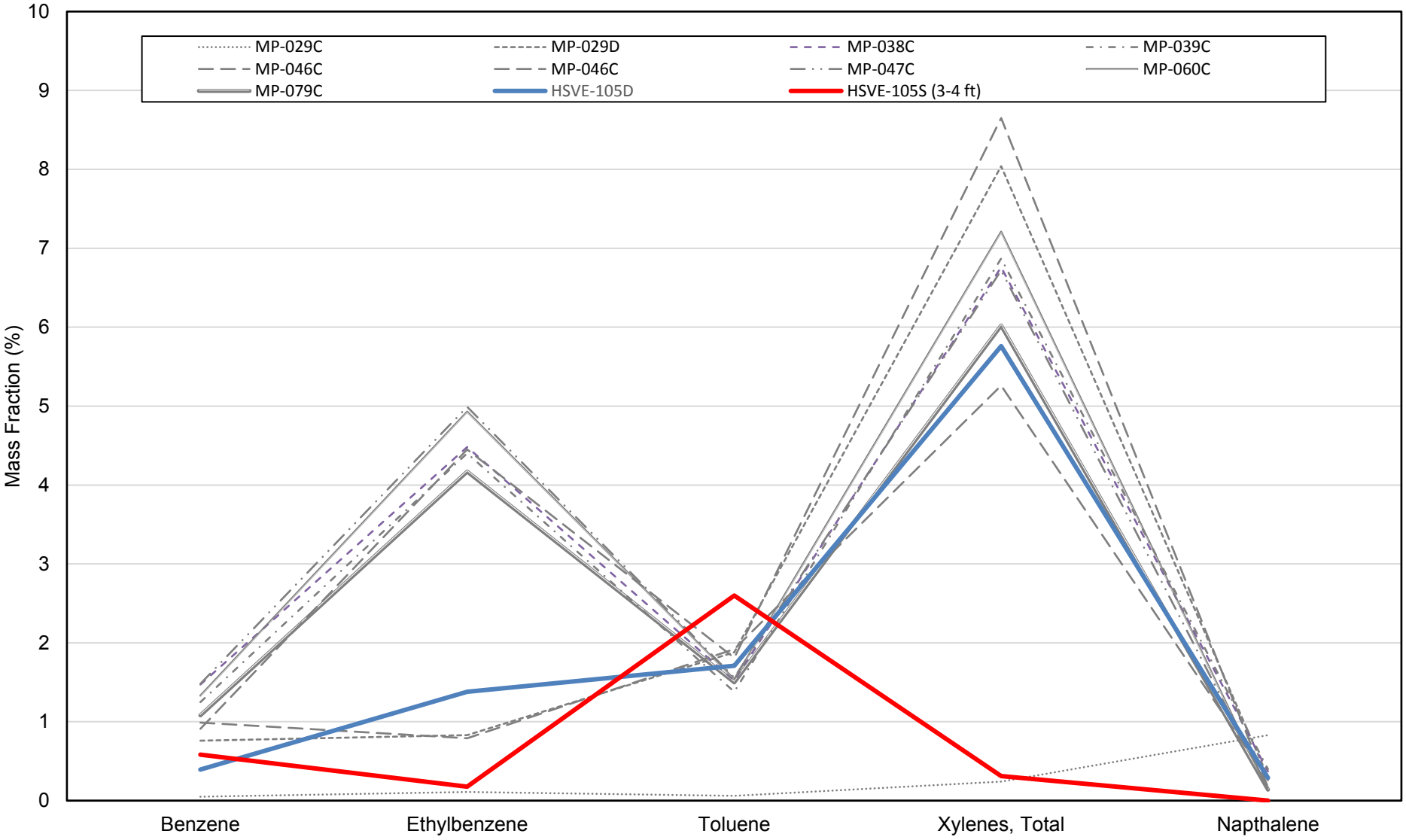
FIGURE 1

HSVE SYSTEM EXPANSION SITE LAYOUT

HARTFORD PETROLEUM RELEASE SITE
HARTFORD, ILLINOIS

Drawn By: REP	Checked By: JGP	Scale: 1" = 30'	Date: 6/2/15	File: 24S_SVEOPTRECORD201505

FIGURE 2. MASS FRACTION RESULTS FOR LNAPL COMPARED TO SHALLOW SOIL SAMPLE HSVE-105S (3-4 FEET)
HARTFORD PETROLEUM RELEASE SITE, HARTFORD, ILLINOIS



ATTACHMENTS A THROUGH G

(PLEASE SEE ATTACHED CD)

ATTACHMENT A

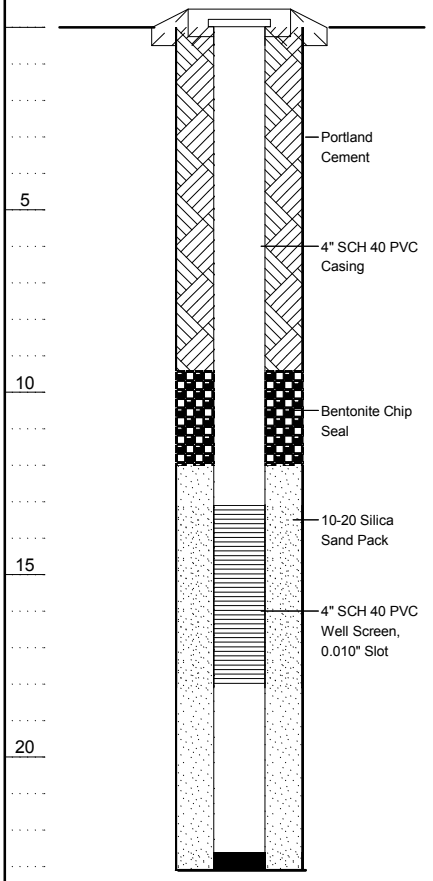
Well Log

Well:**HSVE-105S**

Client: **Apex Oil Company, Hartford, Illinois**		
Date Started: **12/11/2014**	Date Completed: **12/11/2014**	Permit Number: **NA**
Logged By: **Todd Aseltyne**	Driller: **Jimmy Dittmaier**	1/4, 1/4, S, T, R: **34, 5N, 9W**
Drilling Co.: **Bulldog Drilling**	Drilling Rig: **CME-750**	Borehole Diameter: **8"**
Method: **Hollow stem auger**	Measuring Point Elev. (ft.-msl): **429.47**	Sample Type: **Acetate Liners**
Total Depth (ft): **23.1**	Ground Surface Elev. (ft.-msl): **429.97**	Location: **Hartford, Illinois**

N

CONSTRUCTION | **SAMPLING DATA** | **LITHOLOGY**



Depth, feet	Graphic Log	TOV Values (ppmv)	Blow Count/ Recovery (inches)	Visual Description
		Hand Auger 0-5 ft-bgs		Asphalt
				Clay - Medium plasticity, dense, rollable, dark brown, 10YR 3/3
5				
				Silty Clay - Medium plasticity, dense, rollable, brown, 10YR 5/3
10				Clayey Silt - Low plasticity, less dense, yellowish brown, 10YR 5/6
				Silt - Low plasticity, light yellowish brown, 2.5YR 6/3
		0.1		Clayey Silt - Medium plasticity, dense, rollable, light olive brown, 2.5YR 5/4
15		0.2		
				Silt - Medium plasticity, less dense, olive gray, 5YR 5/2
		0.1		
20				
		0.1		Clay - Medium plasticity, dense, compact, rollable, olive, 5YR 4/4
		0.3		Clayey Silt - Low plasticity, rollable, olive, 5YR 4/4
		0.1		
		0.2		

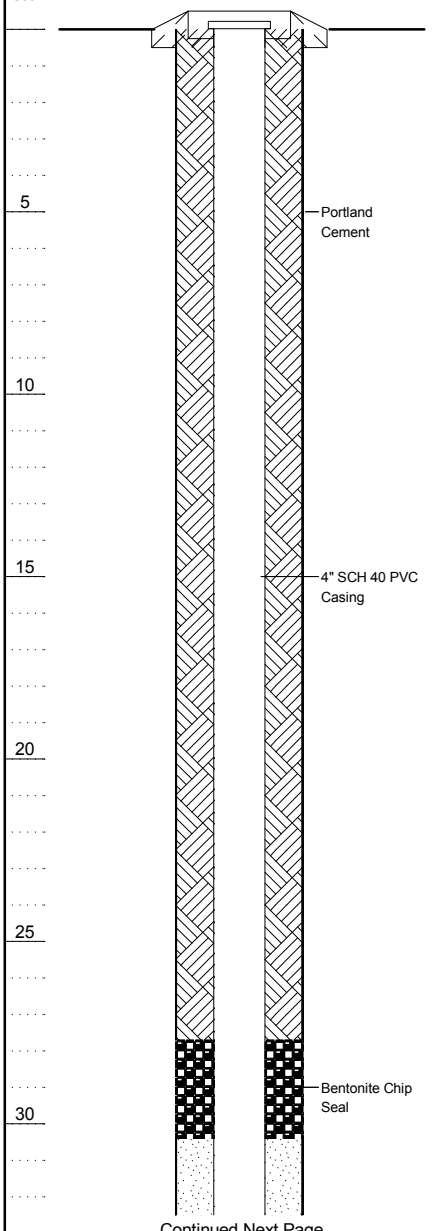
Well Log

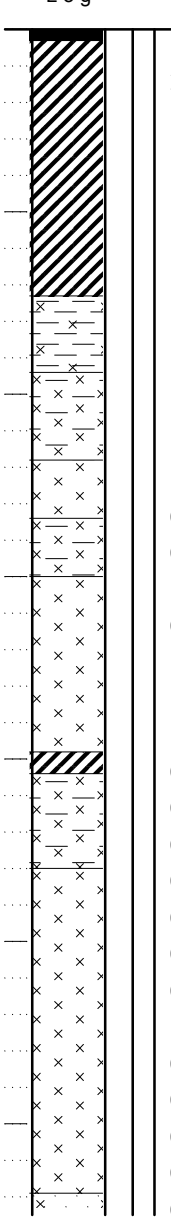
Well:**HSVE-105D**

Client: **Apex Oil Company, Hartford, Illinois**		
Date Started: **12/11/2014**	Date Completed: **12/11/2014**	Permit Number: **NA**
Logged By: **Todd Aseltyne**	Driller: **Jimmy Dittmaier**	1/4, 1/4, S, T, R: **34, 5N, 9W**
Drilling Co.: **Bulldog Drilling**	Drilling Rig: **CME-750**	Borehole Diameter: **8"**
Method: **Hollow stem auger**	Measuring Point Elev. (ft.-msl): **429.49**	Sample Type: **Acetate Liners**
Total Depth (ft): **47.8**	Ground Surface Elev. (ft.-msl): **429.94**	Location: **Hartford, Illinois**

N

CONSTRUCTION | **SAMPLING DATA** | **LITHOLOGY**





Depth, feet	TOV Values (ppmv)	Blow Count/ Recovery (inches)	Visual Description
	Hand Auger 0-5 ft-bgs		Asphalt
			Clay - Medium plasticity, dense, rollable, dark brown, 10YR 3/3
5			
			Silty Clay - Medium plasticity, dense, rollable, brown, 10YR 5/3
10			Clayey Silt - Low plasticity, less dense, yellowish brown, 10YR 5/6
			Silt - Low plasticity, light yellowish brown, 2.5YR 6/3
	0.1		
	0.2		Clayey Silt - Medium plasticity, dense, rollable, light olive brown, 2.5YR 5/4
15			Silt - Medium plasticity, less dense, olive gray, 5YR 5/2
	0.1		
20			Clay - Medium plasticity, dense, compact, rollable, olive, 5YR 4/4
	0.1		Clayey Silt - Low plasticity, rollable, olive, 5YR 4/4
	0.3		
	0.1		
	0.2		Silt - Medium plasticity, less dense, rollable, greenish gray, GLEY1 5/1
	0.1		
25	0.2		
	0.1		
	0.1		
	0.1		
30	0.1		
	0.1		
	0.1		Silty Sand - Medium-fine, well sorted, dark grayish green, GLEY1 4/1
	0.2		

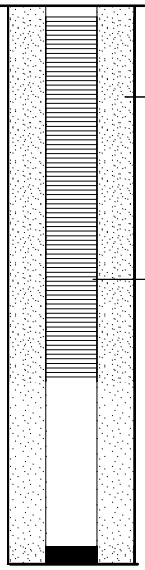
Well Log

Well:**HSVE-105D**

Client:

Apex Oil Company, Hartford, Illinois

CONSTRUCTION	SAMPLING DATA			LITHOLOGY
Depth, feet	Graphic Log	TOV Values (ppmv)	Blow Count/ Recovery (%)	Visual Description
Continued				
35		0.3		
		22		
		576		
		879		Sand - Medium-fine, well sorted, very dark greenish gray, GLEY1 3/1
		655		
		708		
40		602		Gravelly Sand - Medium coarse, Gravel: fine pebble, poorly sorted
		15.6		
		18.3		
		12		
45		2.4		
		3.3		



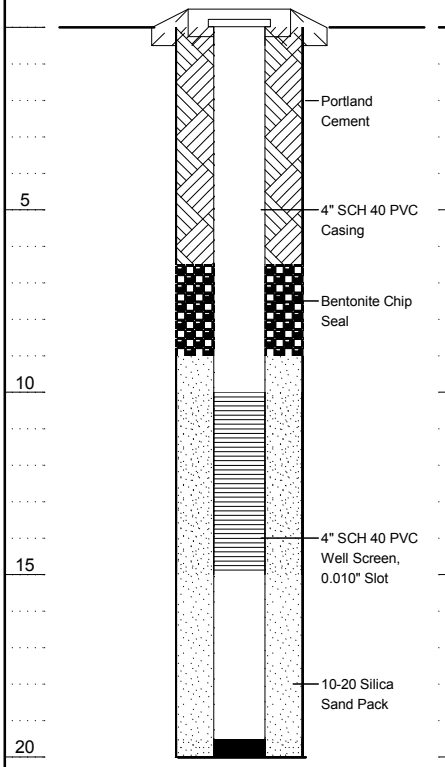
Well Log

Well:**HSVE-106S**

Client: **Apex Oil Company, Hartford, Illinois**		
Date Started: **12/9/2014**	Date Completed: **12/9/2014**	Permit Number: **NA**
Logged By: **Todd Aseltyne**	Driller: **Jimmy Dittmaier**	1/4, 1/4, S, T, R: **34, 5N, 9W**
Drilling Co.: **Bulldog Drilling**	Drilling Rig: **CME-750**	Borehole Diameter: **8"**
Method: **Hollow stem auger**	Measuring Point Elev. (ft.-msl): **430.12**	Sample Type: **Acetate Liners**
Total Depth (ft): **20**	Ground Surface Elev. (ft.-msl): **430.96**	Location: **Hartford, Illinois**

N

CONSTRUCTION | **SAMPLING DATA** | **LITHOLOGY**



Well Log

Well:**HSVE-106D**

Trihydro CORPORATION

Client: **Apex Oil Company, Hartford, Illinois**		
Date Started: **12/9/2014**	Date Completed: **12/9/2014**	Permit Number: **NA**
Logged By: **Todd Aseltyne**	Driller: **Jimmy Dittmaier**	1/4, 1/4, S, T, R: **34, 5N, 9W**
Drilling Co.: **Bulldog Drilling**	Drilling Rig: **CME-750**	Borehole Diameter: **8"**
Method: **Hollow stem auger**	Measuring Point Elev. (ft.-msl): **430.50**	Sample Type: **Acetate Liners**
Total Depth (ft): **44.8**	Ground Surface Elev. (ft.-msl): **431.17**	Location: **Hartford, Illinois**

N

CONSTRUCTION	SAMPLING DATA		LITHOLOGY
Depth, feet	TOV Values (ppmv)	Blow Count/ Recovery (inches)	Visual Description
	Hand Auger 0-5 ft-bgs		Silty Clay - Low plasticity, dense, brown, 7.5YR 4/4
			Sandy Silt - Sand: Fine, well sorted, brown, 7.5YR 5/4
5			Silty Clay - Low plasticity, dense, brown, 7.5YR 4/4
			Clayey Silt - Low plasticity, dense, yellowish brown, 10YR 5/6
10			Sandy Silt - Sand: Fine, medium plasticity, well sorted, brown, 10YR 5/3
			Silty Clay - Medium plasticity, rollable, yellowish brown, 10YR 5/6
			Clayey Silt - Medium plasticity, rollable, yellowish brown, 10YR 5/4 - trace fine sand
15			Silty Clay - Medium-low plasticity, rollable, light yellowish brown, 2.5YR 6/3
20			Clayey Silt - Medium plasticity, rollable, yellowish brown, 10YR 5/6
			Silt with Trace Clay - Low plasticity, iron staining, nodules, brown, 7.5YR 5/4
	0.1		Silt - Low plasticity, some fine sand, dark greenish gray, GLEY1 4/1
25	0.1		
	0.3	Slight odor	
	2.1		Clay with Trace Silt - Dense, compact, low plasticity, greenish gray, GLEY1 5/1
	2.6		
	1.5		
30	2.0		
	36.1	Contact identified Strong odor	Sand - Medium-fine, well sorted, gray, 2.5YR 5/1
	76		

Portland Cement

4" SCH 40 PVC Casing

Bentonite Chip Seal

10-20 Silica Sand Pack

Continued Next Page

Well Log

Well:**HSVE-106D**

Client:

Apex Oil Company, Hartford, Illinois

CONSTRUCTION		SAMPLING DATA			LITHOLOGY
Depth, feet		Graphic Log	TOV Values (ppmv)	Blow Count/ Recovery (%)	Visual Description
	Continued			Strong odor	
			210		
35			380		35
	4" SCH 40 PVC Well Screen, 0.010" Slot		540		
			59		
			360		
			540		Silt - Medium plasticity, rollable, olive brown, 2.5YR 4/3
			571		Sandy Gravel - Sand: Medium-coarse, Gravel: Fine pebbles, poorly sorted
40			16.7		40
			20		
			24		
			3.1		

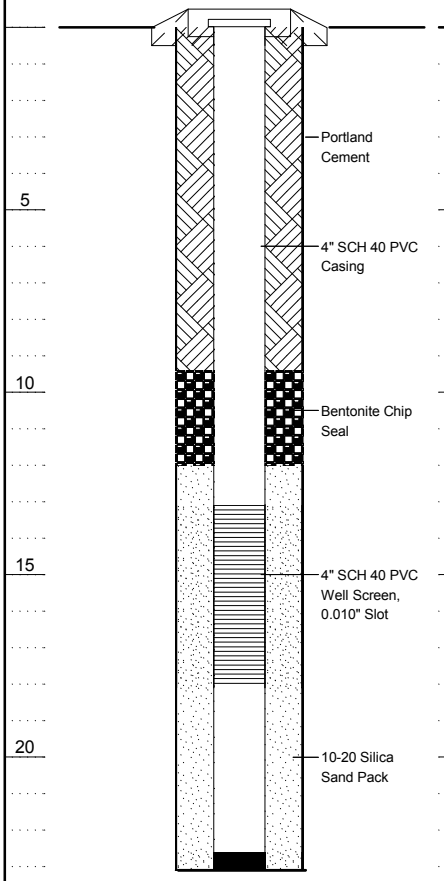
Well Log

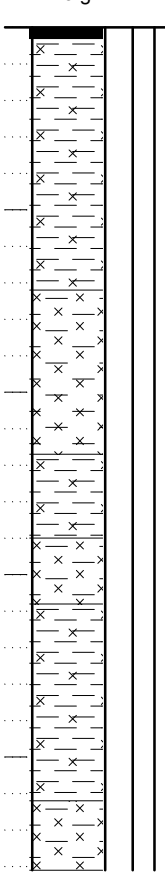
Well:**HSVE-107S**

Client: **Apex Oil Company, Hartford, Illinois**		
Date Started: **12/10/2014**	Date Completed: **12/10/2014**	Permit Number: **NA**
Logged By: **Todd Aseltyne**	Driller: **Jimmy Dittmaier**	1/4, 1/4, S, T, R: **34, 5N, 9W**
Drilling Co.: **Bulldog Drilling**	Drilling Rig: **CME-750**	Borehole Diameter: **8"**
Method: **Hollow stem auger**	Measuring Point Elev. (ft.-msl): **427.79**	Sample Type: **Acetate Liners**
Total Depth (ft): **23.1**	Ground Surface Elev. (ft.-msl): **428.58**	Location: **Hartford, Illinois**

N

CONSTRUCTION **SAMPLING DATA** **LITHOLOGY**





TOV Values (ppmv) | Blow Count/ Recovery (inches)

Hand Auger 0-5 ft-bgs

Visual Description

Asphalt

Silty Clay - Low plasticity, dense, dark yellowish brown, 10YR 4/4

Clayey Silt - Medium plasticity, rollable, yellowish brown, 10YR 5/6

Silty Clay - Medium plasticity, rollable, yellowish brown, 10YR 5/6

Clayey Silt - Low plasticity, dark yellowish brown, 10YR 3/4

Silty Clay - Low plasticity, dense, compact, dark grayish brown, 10YR 4/2

Clayey Silt - Medium plasticity, rollable, light olive brown, 2.5YR 5/4

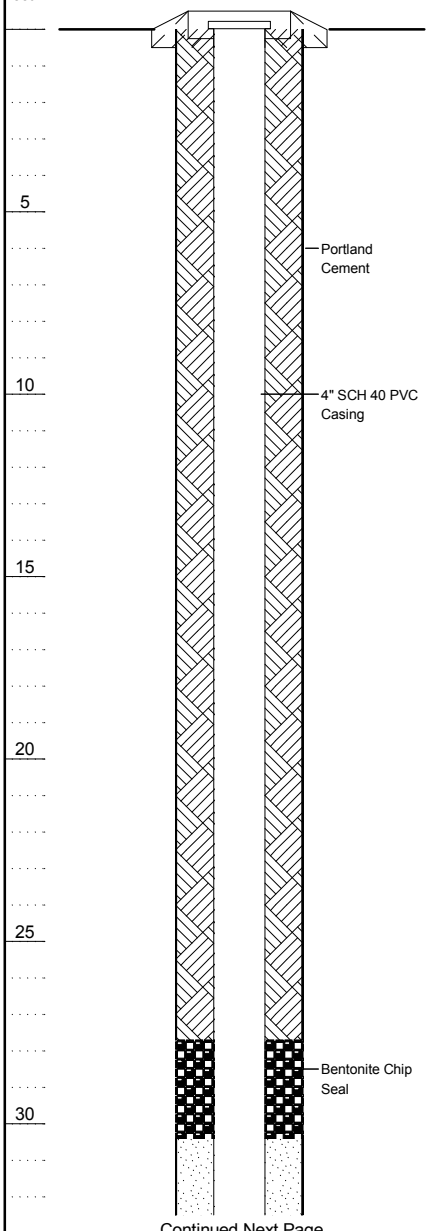
Well Log

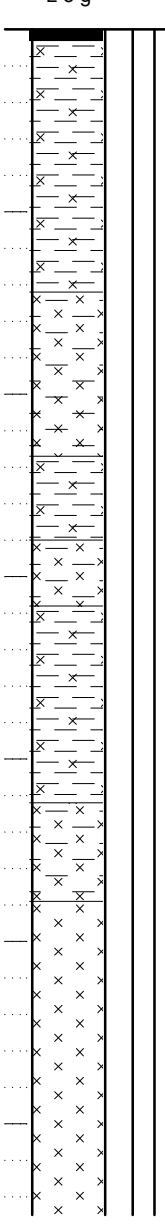
Well:**HSVE-107D**

Client: **Apex Oil Company, Hartford, Illinois**		
Date Started: **12/10/2014**	Date Completed: **12/10/2014**	Permit Number: **NA**
Logged By: **Todd Aseltyne**	Driller: **Jimmy Dittmaier**	1/4, 1/4, S, T, R: **34, 5N, 9W**
Drilling Co.: **Bulldog Drilling**	Drilling Rig: **CME-750**	Borehole Diameter: **8"**
Method: **Hollow stem auger**	Measuring Point Elev. (ft.-msl): **427.81**	Sample Type: **Acetate Liners**
Total Depth (ft): **47.8**	Ground Surface Elev. (ft.-msl): **428.81**	Location: **Hartford, Illinois**

N

CONSTRUCTION | **SAMPLING DATA** | **LITHOLOGY**





TOV Values (ppmv) | Blow Count/ Recovery (inches)

Hand Auger 0-5 ft-bgs

Slight odor

Visual Description

Asphalt

Silty Clay - Low plasticity, dense, dark yellowish brown, 10YR 4/4

Clayey Silt - Medium plasticity, rollable, yellowish brown, 10YR 5/6

Silty Clay - Medium plasticity, rollable, yellowish brown, 10YR 5/6

Clayey Silt - Low plasticity, dark yellowish brown, 10YR 3/4

Silty Clay - Low plasticity, dense, compact, dark grayish brown, 10YR 4/2

Clayey Silt - Medium plasticity, rollable, light olive brown, 2.5YR 5/4

Silt - Low plasticity, dark greenish gray, GLEY1 4/1

Continued Next Page

Well Log

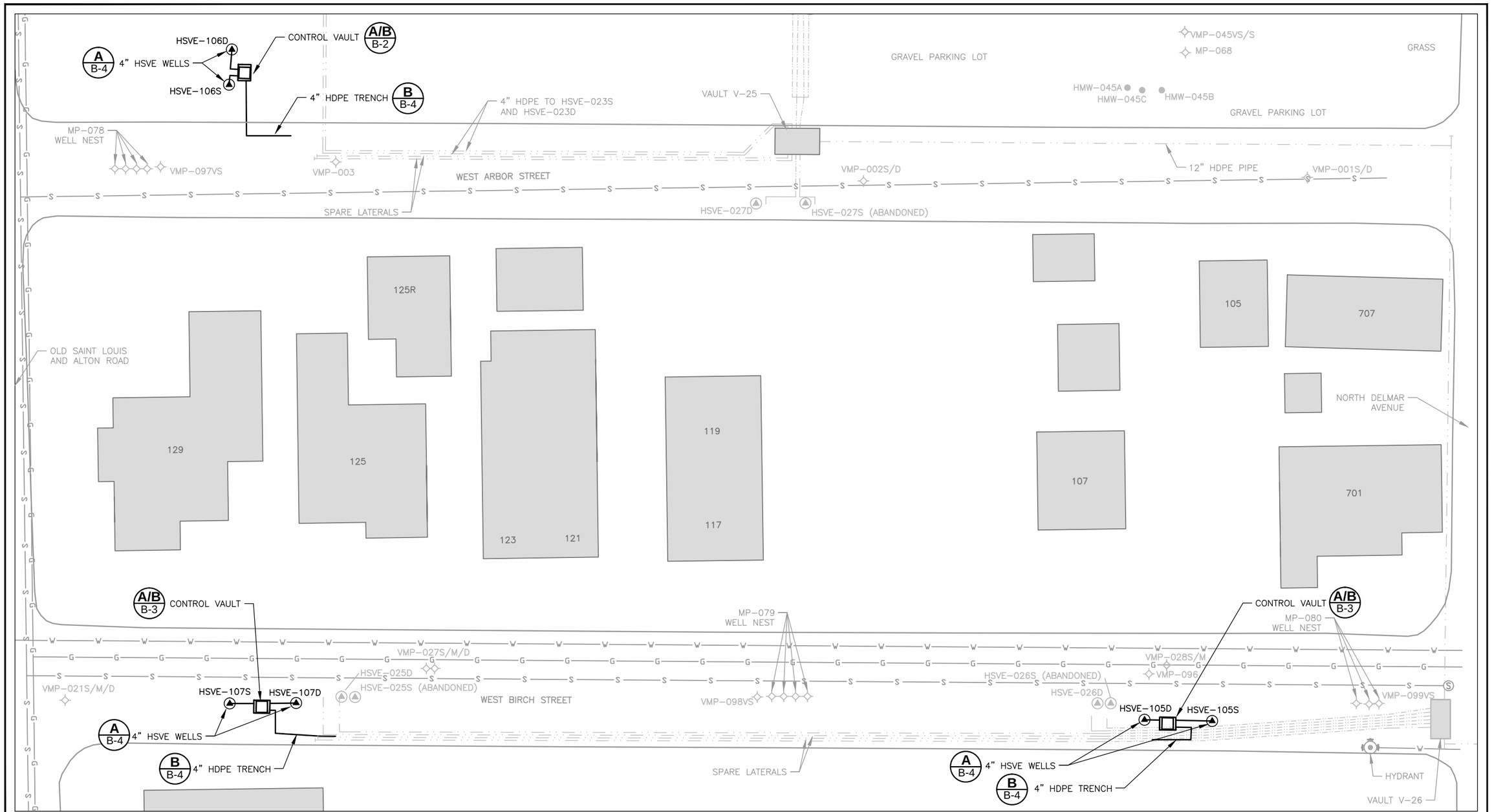
Well:**HSVE-107D**

Client:

Apex Oil Company, Hartford, Illinois

CONSTRUCTION		SAMPLING DATA		LITHOLOGY	
Depth, feet	Graphic Log	TOV Values (ppmv)	Blow Count/ Recovery (%)	Visual Description	
Continued					
35	4" SCH 40 PVC Well Screen, 0.010" Slot	0.2			35
		220			
		286	Strong odor	Sand - Medium-fine, well sorted, grayish brown, 10YR 5/2	
		364			
		562			
40	10-20 Silica Sand Pack	841		Gravelly Sand - Poorly sorted, Sand: Medium-coarse, Gravel: Fine pebble	40
		94			
		105			
45					45
		36.1			
		19.2			

ATTACHMENT B



EXPLANATION

GAS LINE

WATER LINE

SEWER LINE

EXISTING SVE PIPELINE

EXPANDED SVE PIPELINE

EXISTING BUILDING OR OTHER STRUCTURE

N

0 30'

NOTE:

EXISTING SUBSURFACE SOIL VAPOR EXTRACTION INFRASTRUCTURE SHOWN IS BASED ON DRAWINGS PROVIDED BY AECOM ON BEHALF OF THE HARTFORD WORKING GROUP. THE LOCATION OF THESE ELEMENTS COULD NOT BE VERIFIED BY TRIHYDRO CORPORATION. THEREFORE, THE EXISTING SUBSURFACE SYSTEM ELEMENTS REPRESENT AN APPROXIMATE LOCATION AND MAY NOT ALIGN WITH THE SURVEYED LOCATION OF EXISTING WELLS AND EXPANDED SVE SYSTEM COMPONENTS.

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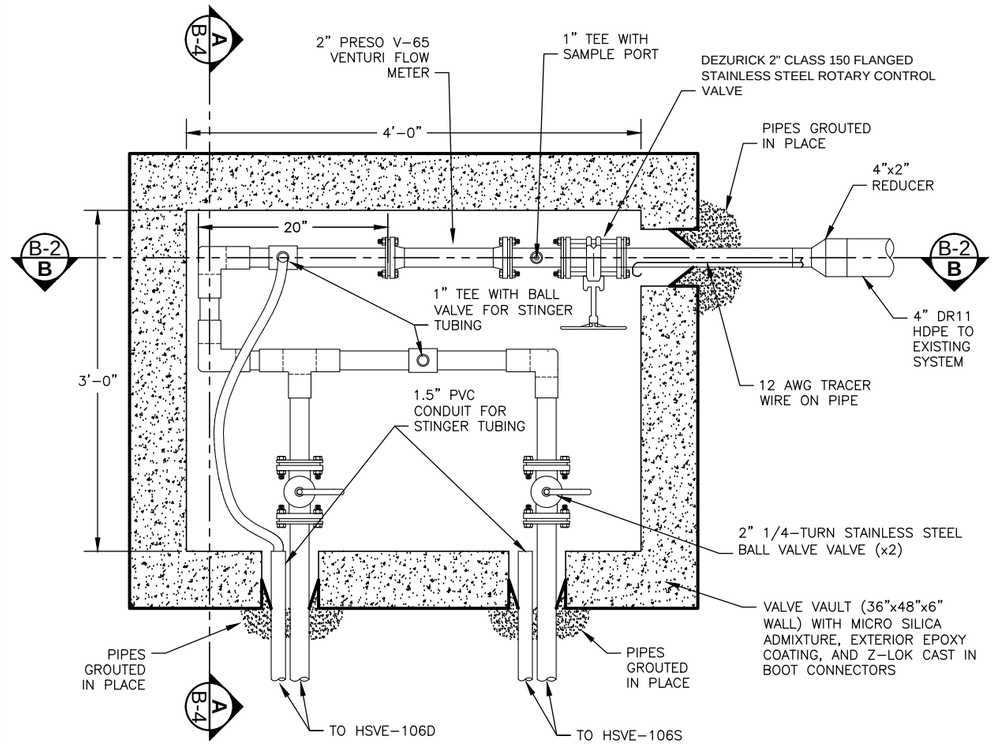
FIGURE B-1

HSVE-105, HSVE-106 AND HSVE-107 WELL CONNECTION AS-BUILT PLAN

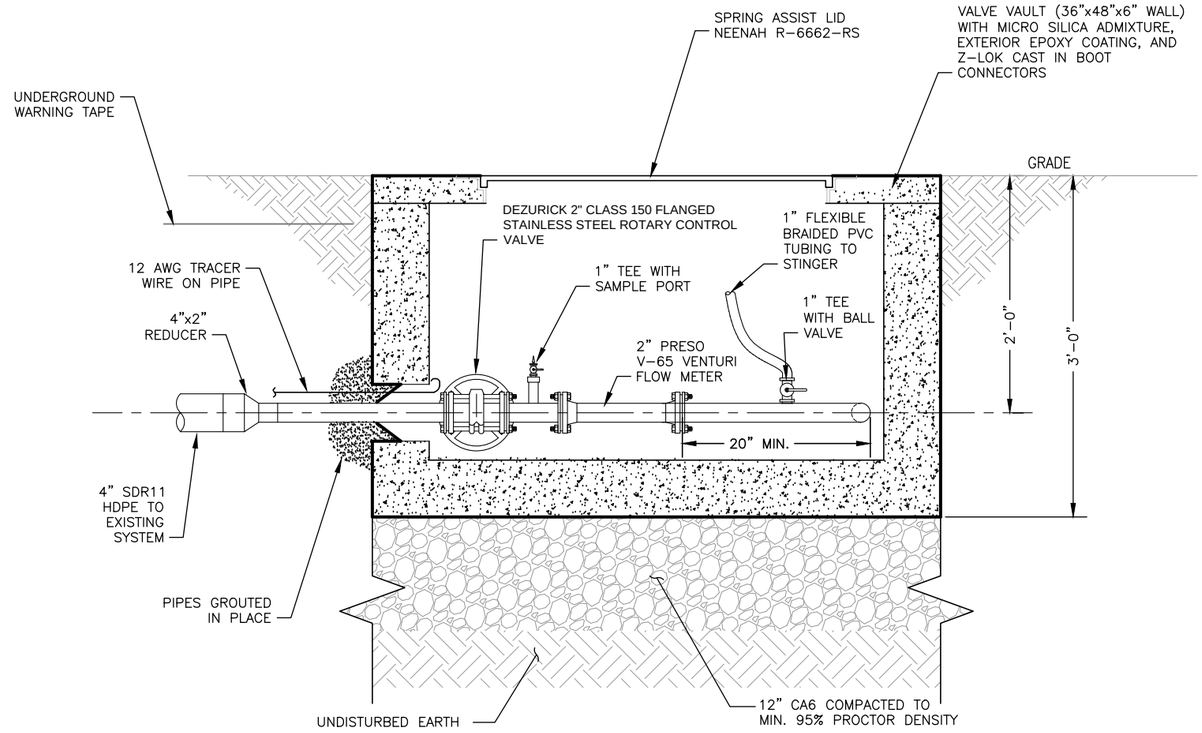
HARTFORD PETROLEUM RELEASE SITE HARTFORD, ILLINOIS

Drawn By: REP	Checked By: JGP	Scale: 1" = 30'	Date: 6/2/15	File: 24S_SVEOPTRECORD201505



A **HSVE-106 CONTROL VAULT AS-BUILT PLAN**
3/4" = 1'-0"

N



B **HSVE-106 CONTROL VAULT AS-BUILT SECTION**
3/4" = 1'-0"

SHEET NOTES

1. ALL PIPES 2" DIAMETER DR 11 HDPE UNLESS OTHERWISE NOTED.

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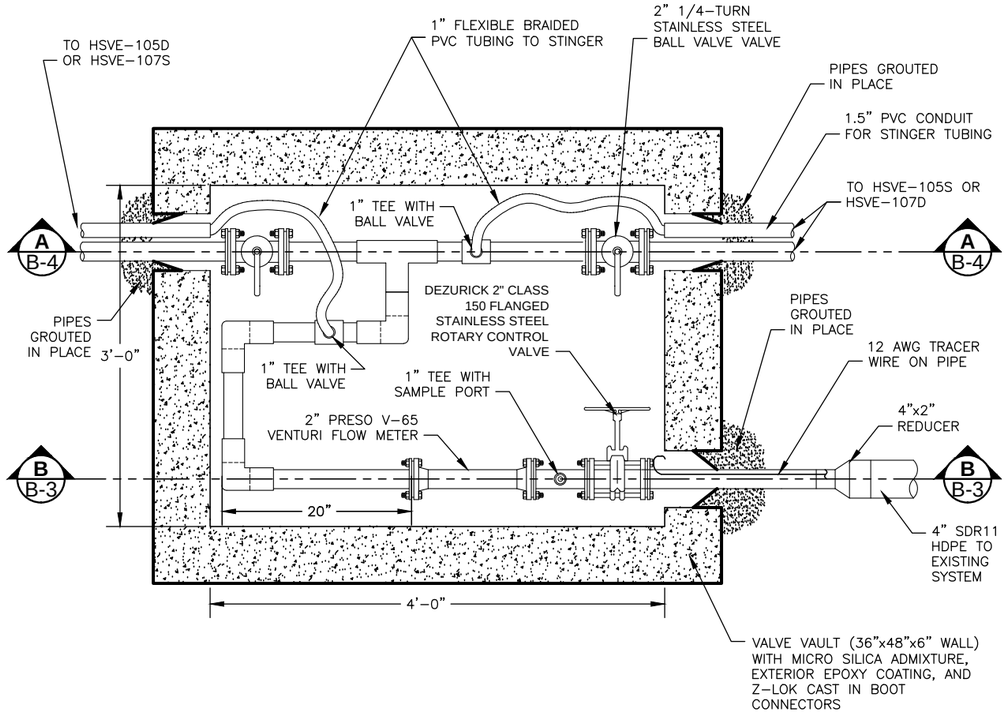
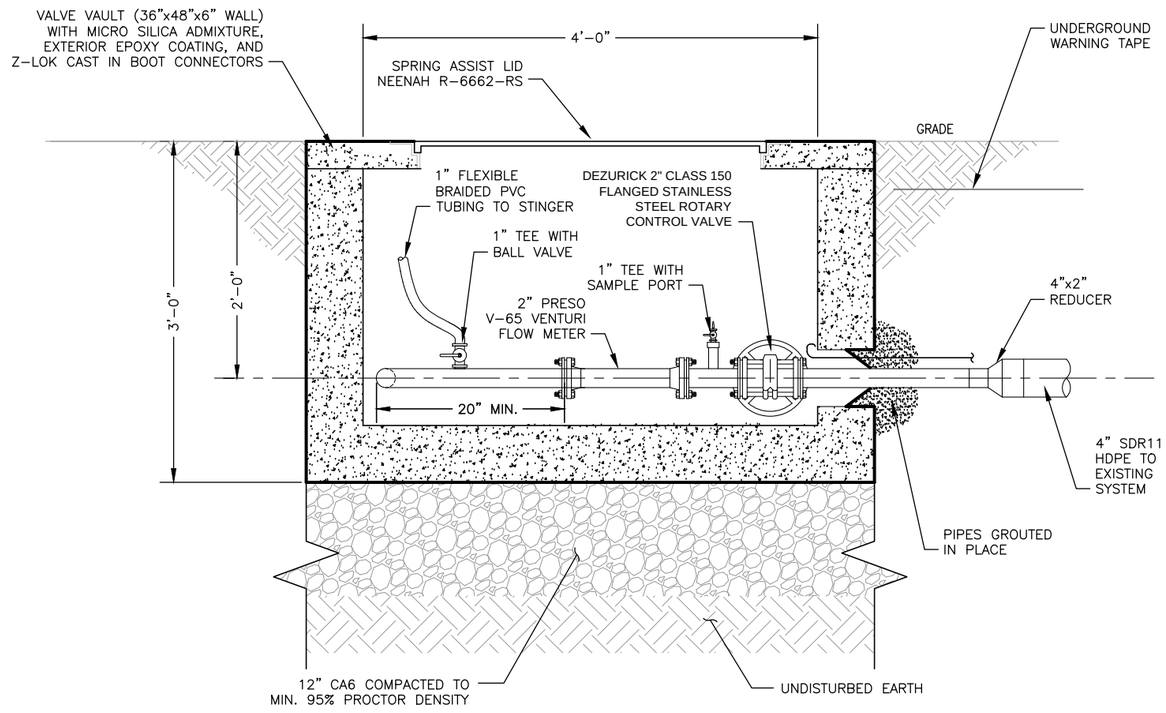
FIGURE B-2

HSVE-106 WELL CONTROL VAULT AS-BUILT DETAILS

HARTFORD PETROLEUM RELEASE SITE
HARTFORD, ILLINOIS

Drawn By: REP	Checked By: JGP	Scale: AS SHOWN	Date: 6/2/15	File: 24S_SVEOPTRECORD201505





A **HSVE-105 & HSVE-107 CONTROL VAULT AS-BUILT PLAN**
3/4" = 1'-0"

N

B **HSVE-105 & HSVE-107 CONTROL VAULT AS-BUILT SECTION**
3/4" = 1'-0"

SHEET NOTES

1. ALL PIPES 2" DIAMETER DR 11 HDPE UNLESS OTHERWISE NOTED.

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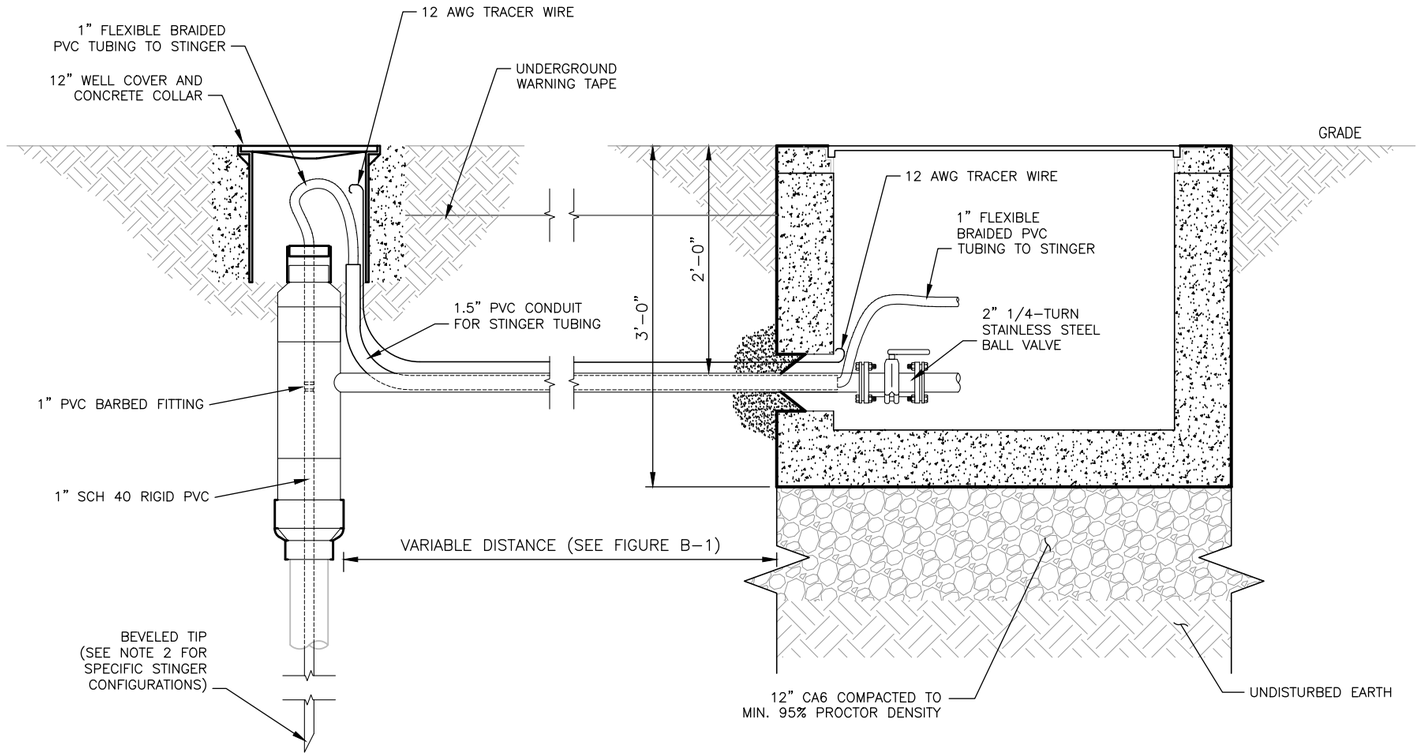
FIGURE B-3

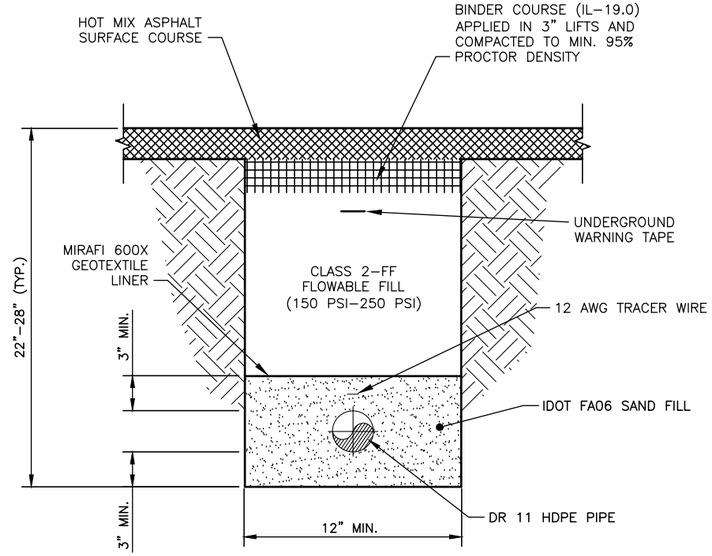
HSVE-105 & HSVE-107 WELL CONTROL VAULT AS-BUILT DETAILS

HARTFORD PETROLEUM RELEASE SITE
HARTFORD, ILLINOIS

Drawn By: REP	Checked By: JGP	Scale: AS SHOWN	Date: 6/2/15	File: 24S_SVEOPTRECORD201505



A **SVE WELL COMPLETION AND CONTROL VAULT CONNECTION AS-BUILT SECTION**
3/4" = 1'-0"



B **TYPICAL TRENCH AS-BUILT DETAIL**
1" = 1'-0"

SHEET NOTES

1. ALL PIPES 2" DIAMETER DR 11 HDPE UNLESS OTHERWISE NOTED.
2. TYPICAL SVE WELL CONNECTION THROUGH LEFT WALL OF CONTROL VAULT SHOWN. ACTUAL CONTROL VAULT PENETRATIONS OCCUR THROUGH OPPOSING WALL (HSVE-106) OR BOTH WALLS (HSVE-105 & HSVE-107) PER FIGURES B-2 AND B-3, RESPECTIVELY.
3. STINGER CONFIGURATIONS AT TIME OF INITIAL CONSTRUCTION ARE AS FOLLOWS:

Well ID	STINGER TYPE	INITIAL STINGER DEPTH (FT-BTOC)	STINGER RIGID PVC LENGTH (FT-BTOC)	STINGER DIAMETER (INCHES)
HSVE-105S	STRAW	17.9	16.9	1
HSVE-105D	NONE IN WELL	NA	NA	1
HSVE-106S	NONE IN WELL	NA	NA	1
HSVE-106D	STRAW	34.8	24.0	1
HSVE-107S	STRAW	16.3	15.7	1
HSVE-107D	STRAW	33.4	20.0	1

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FIGURE B-4

SVE WELL COMPLETION, CONTROL VAULT CONNECTION AND TRENCH AS-BUILT DETAILS

HARTFORD PETROLEUM RELEASE SITE
HARTFORD, ILLINOIS

Drawn By: REP	Checked By: JGP	Scale: AS SHOWN	Date: 6/2/15	File: 24S_SVEOPTRECORD201505

ATTACHMENT C

Observer	Walt Davis		
Date	Monday, February 09, 2015		
Sky	Cloudy	**Work Start**	700
Wind	Light (1-10 mph)	**Work Stop**	1530
Temperature	32-50 degrees	**Work Day**	8

Health and Safety

Widman Construction, France Mechanical, URS and Trihydro personnel attended the project kickoff meeting this morning. The scope of the project was reviewed and safety expectations discussed. Talked about proceeding during the project efficiently and slowly since there are numerous utilities to be worked around and that there would be occasions where hand digging will need to take place. It was emphasized that even though there have been utility locates does not mean that all utilities have been marked. Discussed being aware of the surrounding area and looking where a utility could be located even though it has not been marked. It was, also, emphasized that everyone involved has the right to stop work if necessary.

Work Observation

After the kickoff meeting all personnel proceeded to Arbor St. where the contractor will begin. Walked the work area to look at locates and to further determine if there are other utilities that may be unmarked. It was observed that there is a water line running along the curb in the grass that the contractor will cross while trenching from the well vault location to the street where the final tie in will be made.

The contractor began at approximately 0845 by excavating around HSVE wells 106D and 106S. Excavated for the control vault and trenched into Arbor St. All excavated material was placed in roll off bins. Once the roll off bins were full they were tarped and taken to a staging area at 610 N. Delmar until sampled. Spent most of the afternoon looking for the spare 4 inch HDPE lines in the street from the main control vault east of the work area. Located the lines, but they were in the north bank of the trench. Contractor shutdown excavation operations and will widen the trench tomorrow to fully expose the spare lines. Spent the remainder of the shift cleaning up the work area, fencing the well and control vault excavation and placing steel plates over the trench in the street. Barricades set up around equipment, roll off bin and sand and structural fill material stockpiles delivered today.

Remarks

Personnel	Role
Walt Davis	Trihydro

Personnel	Role
Dan Buck	Widman Supt.
1 - Operator	Widman Construction
1 - Laborer	Widman Construction
Ray Scherrer	URS
Tom Binz	Tetratech USEPA Representative

Equipment	Count
Work Truck - Widman	2
Case 580L Backhoe	1

Photo Date:	2/11/2015
Direction:	East
Taken By:	Walt Davis
X Coordinate:	0
Y Coordinate:	0
Location:	
Description:	Excavation for HSVE Wells 106D and 106S and the control vault.

Photo Date:	2/11/2015
Direction:	South
Taken By:	Walt Davis
X Coordinate:	0
Y Coordinate:	0
Location:	
Description:	View of pipe trench into Arbor St. from the well and vault excavation.

Observer	Walt Davis		
Date	Tuesday, February 10, 2015		
Sky	Sunny	**Work Start**	800
Wind	Light (1-10 mph)	**Work Stop**	1630
Temperature	32-50 degrees	**Work Day**	8

Health and Safety

Discussed watching where one walks when near the excavations, do not walk near operating equipment without making eye contact with the operator, and hand digging near marked utilities in the work areas.

Work Observation

Widman, Construction completed excavating the trench in Arbor Street this morning. Contractor set the vault for the well piping and, along with APEX determined which of the two existing 4 inch HDPE lines to tie into in Arbor St. This afternoon crew moved equipment to Birch St. to begin saw cutting asphalt and excavating around HSVE wells 107D and 107S, and excavating for the vault. Trihydro and Widman walked the Birch St. work area to look at utilities in the work area prior to excavation work. Excavated material was loaded into a roll off.

France Mechanical onsite today to fabricate and install HDPE vault piping and tie into the existing 4 inch HDPE line in Arbor Street. All pipe they could install today was completed this morning.

Tom Miller (IEPA) was onsite this morning to look at the project progress, along with Tom Binz (USEPA representative from Tetratech). Neither had any questions or comments.

Excavations on Birch St. were coverd with steel plates at the end of the day and safety devices placed around equipment and the roll off box.

Quality Testing onsite today to perform density tests on the CA6 structural fill material for the vault on Arbor St. Tests were satisfactory.

Remarks

Personnel	Role
Walt Davis	Trihydro
Dan Buck	Widman Supt.

Personnel	Role
1 - Operator	Widman Construction
1 - Laborer	Widman Construction
Ray Scherrer	URS
Tom Miller	IEPA
Tom Binz	Tetratech USEPA Representative
3 - Technicians	France Mechanical
1 - Geotech	Quality Testing

Equipment	Count
Work Truck - Widman	2
Case 580L Backhoe	1
HDPE Welder	1
Work Truck - France	2

Photo Date:	2/11/2015
Direction:	South
Taken By:	Walt Davis
X Coordinate:	0
Y Coordinate:	0
Location:	
Description:	The excavation for HSVE wells 107D and 107S and the control vault location.

Observer	Walt Davis		
Date	Wednesday, February 11, 2015		
Sky	Cloudy	**Work Start**	800
Wind	Light (1-10 mph)	**Work Stop**	1630
Temperature	32-50 degrees	**Work Day**	8

Health and Safety

Discussed working around machinery and walking close to excavations. Need to look before proceeding and make eye contact with the backhoe operator before approaching the equipment. Also, we must all watch for residents either driving or walking near the work area.

Work Observation

The contractor completed excavating for the control vault for HSVE Wells 107D and 107S and located the spare 4 inch HDPE pipe to be tied into. Placed CA6 structural fill material in the excavation and compacted in preparation for setting the control vault. Quality Testing onsite this morning to perform density test on the structural fill. Test was satisfactory. Contractor set the vault. When the spare 4 inch lines that the 107 wells will tie into it was observed that they did not have plugs in the end. They were covered with duct tape.

Contractor, also, began laying out, saw cutting pavement and excavating for the 105 wells on E. Birch St. While excavating for the vault the contractor found a 6 inch unmarked clay sewer lateral running through the excavation. The teeth of the backhoe bucket broke a sample piece of the bell of the sewer lateral. Contractor call the Town of Hartford utilities. Town of Hartford came out and looked at the damaged pipe. They left and came back with a short section of PVC and two fernco couplers and repaired the pipe. The repair took approximately 15 minutes. After the repair the contractor shifted the vault location to the west from the sewer lateral. While excavating around well 105S a strong petroleum odor was noticed. Contractor stopped work and Apex personnel were called to come with their 4 gas meter to sniff the excavation. The excavation was cleared to continue working and the cap of the well was tightened. During further cleaning out from around the well the contractor noticed a small pool of petroleum (approximately 4 inch diameter) along the outside of the well casing at approximately 3.5 feet below the street grade. Work was stopped again and, Paul Michalski (Trihydro) was contacted and it was decided to sample the soils near the well and have it analyzed. Four drums were ordered so that when work around the well continues (tomorrow) the soils can be placed in drums rather than the roll off bins. Contractor moved to the south side of the work area to uncover the spare HDPE pipe that 105S and 105D will be tied into. Piping was located (6 lines) and the spare identified. All six lines run over the top of the

was located (6 lines) and the spare identified. All six lines run over the top of the sewer service lateral. The bury depth for the lines is at approximately 2 feet.

Contractor placed steel plates over all open excavations, barricaded all equipment and ensured all tarps were in place on the roll off bins.

Remarks

Personnel	Role
Walt Davis	Trihydro
Dan Buck	Widman Supt.
1 - Operator	Widman Construction
1 - Laborer	Widman Construction
Ray Scherrer	URS
Tom Binz	Tetratech USEPA Representative
3 - Town Workers	Town of Hartford
Carl Byrd	Apex

Equipment	Count
Work Truck - Widman	2
Case 580L Backhoe	1

Photo Date:	2/11/2015
Direction:	West
Taken By:	Walt Davis
X Coordinate:	0
Y Coordinate:	0
Location:	
Description:	Existing HDPE lines on the south side of the excavation for Well 105D and 105S and the vault.

Photo Date:	2/11/2015
Direction:	East
Taken By:	Walt Davis
X Coordinate:	0
Y Coordinate:	0
Location:	
Description:	Petroleum pool on the outside of Well 105S.

Photo Date:	2/11/2015
Direction:	East
Taken By:	Walt Davis
X Coordinate:	0
Y Coordinate:	0
Location:	
Description:	Control Vault for Wells 107D and 107S.

Photo Date:	2/11/2015
Direction:	NorthEast
Taken By:	Walt Davis
X Coordinate:	0
Y Coordinate:	0
Location:	
Description:	Spare 4 inch HDPE pipe for Wells 107D and 107S.

Observer	Walt Davis		
Date	Thursday, February 12, 2015		
Sky	Overcast	**Work Start**	800
Wind	Moderate (11-25 mph)	**Work Stop**	1600
Temperature	<32 degrees	**Work Day**	

Health and Safety

Discussed watching for public either driving or walking near the work area, working around open excavations, communication between all involved parties and weather conditions. It is predicted to be cold today, so take extra breaks if necessary.

Work Observation

Contractor placed CA6 material and compacted the material for the 105 wells vault. Set the vault today. Removed visually impacted material from around HSVE Well 105S and placed in a drum. Three quarters of a drum filled with the material. Drum was removed from the work area and placed in the garage at 610 N. Delmar until soil samples results are known. Contractor placed bedding material in the pipe trenches for the 107 wells and compacted.

France Mechanical fabricated and installed vault piping for the 107 wells, and installed pipe to the tie in point. Air and leak tested the HDPE piping from the wells to the tie in point this afternoon. Pipe tested to 11.5 PSI. No air loss or leaks at the welds. France made the tie in at the existing spare for the 107 wells.

Quality Testing onsite today to perform density test on the structural fill material for the 105 wells vault. Test was satisfactory.

Remarks

Personnel	Role
Walt Davis	Trihydro
Dan Buck	Widman Supt.
1 - Operator	Widman Construction
1 - Laborer	Widman Construction
Ray Scherrer	URS
2 - Technicians	France Mechanical
1 - Geotech	Quality Testing

Equipment	Count
Work Truck - Widman	2
Case 580L Backhoe	1
HDPE Welder	1

Photo Date:	2/13/2015
Direction:	West
Taken By:	Walt Davis
X Coordinate:	0
Y Coordinate:	0
Location:	
Description:	Compacting structural fill prior to setting the vault for the 105 wells.

Photo Date:	2/13/2015
Direction:	East
Taken By:	Walt Davis
X Coordinate:	0
Y Coordinate:	0
Location:	
Description:	105 wells vault after being set.

Photo Date:	2/13/2015
Direction:	South
Taken By:	Walt Davis
X Coordinate:	0
Y Coordinate:	0
Location:	
Description:	Electrofusion coupling at the tie in of new HDPE and existing spare at the 107 wells on W. Birch St.

Observer			
Date	Friday, February 13, 2015		
Sky	Sunny	**Work Start**	800
Wind	Moderate (11-25 mph)	**Work Stop**	1540
Temperature	32-50 degrees	**Work Day**	

Health and Safety	Discussed staying focused on the tasks at hand as it is the end of the week. Reiterated that we all need to watch for non-project personnel near the work areas. Good communication between equipment operator and personnel on the ground.
Work Observation	Contractor placed and compacted bedding material in the pipe trench for the 106 wells on Arbor St. between the tie in in the street to the vault. Placed Mirafi on the bedding material over the HDPE pipe and placed warning tape. in the trench. Contractor spent the remainder of the day in support of France Mechanical. France Mechanical fabricated, installed and tested HDPE pipe for the 105 wells on E. Birch St. New pipe was air and leak tested before the tie in to the existing spare 4 inch line. Pipe tested at 11.5 psi. There was no pressure drop or leaks at the welds. Made tie in to the existing spare. France air and leak tested the new HDPE pipe for the 106 wells on Arbor St. Pipe was tested at 11.5 psi. No pressure drop or leaks at the welds. New piping was tied into the existing spare with an electrofusion coupling. Tom Miller (IEPA) onsite this morning to observe work in the 105 well area. He had no apparent concerns.
Remarks	

Personnel	Role
Walt Davis	Trihydro
Dan Buck	Widman Supt.
1 - Operator	Widman Construction
1 - Laborer	Widman Construction
Ray Scherrer	URS
2 - Technicians	France Mechanical
Tom Miller	IEPA

Equipment	Count
Work Truck - Widman	2
Case 580L Backhoe	1
HDPE Welder	1
Work Truck - France Mehanical	2

Photo Date:	2/13/2015
Direction:	East
Taken By:	Walt Davis
X Coordinate:	0
Y Coordinate:	0
Location:	
Description:	Photo showing the full roll off containers (6) staged in the vacant lot at 610 N. Delmar.

Photo Date:	2/13/2015
Direction:	South
Taken By:	Walt Davis
X Coordinate:	0
Y Coordinate:	0
Location:	
Description:	France Mechanical spraying soap on the welds during the air and leak test at the 105 wells.

Photo Date:	2/13/2015
Direction:	West
Taken By:	Walt Davis
X Coordinate:	0
Y Coordinate:	0
Location:	
Description:	Pressure gauge at 11.5 psi during the air test of the 106 wells pipe.

Photo Date:	2/13/2015
Direction:	West
Taken By:	Walt Davis
X Coordinate:	0
Y Coordinate:	0
Location:	
Description:	Marifi installed above the pipe and bedding on Arbor St.

Observer	Walt Davis		
Date	Monday, February 16, 2015		
Sky	Snow	**Work Start**	
Wind	Light (1-10 mph)	**Work Stop**	
Temperature	<32 degrees	**Work Day**	

Health and Safety

Work Observation	Contractor did not work today due to snow. It was determined that it would not be safe to work around the excavations, plus there is the chance the welds for the well hook ups could be compromised.

Remarks

Photo Date:	2/16/2015
Direction:	North
Taken By:	Walt Davis
X Coordinate:	0
Y Coordinate:	0
Location:	
Description:	Excavation for Wells 106D and 106S on Arbor St.

Photo Date:	2/16/2015
Direction:	West
Taken By:	Walt Davis
X Coordinate:	0
Y Coordinate:	0
Location:	
Description:	Photo of Birch St. looking from east to west.

Observer	Carl Byrd		
Date	Tuesday, February 24, 2015		
Sky	Sunny	**Work Start**	800
Wind	Light (1-10 mph)	**Work Stop**	1630
Temperature	<32 degrees	**Work Day**	

Health and Safety

Discussed slip trip and fall with icy conditions and then with it warming up and melting.

Work Observation

France Mechanical glued on the wellheads on all 6 wells and then electrofused all couplings. They also laid down conduit from each well to the inside of each vault a long with tracer wire.

Contractor placed sand over the HDPE piping and laid down Mirafi 600x and then place warning tape at 107 wells. They also poured flowable fill on top of the mirafi 600x.

Contractor also grouted the outside of the vault box where the pipes enter the box at 107 and 105 wells.

Remarks

Personnel	Role
Carl Byrd	Apex
Dan Buck	Widman Supt.
1 - Operator	Widman Construction
1 - Laborer	Widman Construction
Ray Scherrer	URS
2 - Technicians	France Mechanical

Equipment	Count
Work Truck - Widman	2
Work Truck - France Mehanical	2
Case 580L Backhoe	1

Equipment	Count
Electro-fusion Machine	1

Photo Date:	2/24/2015
Direction:	West
Taken By:	Carl Byrd
X Coordinate:	0
Y Coordinate:	0
Location:	
Description:	Well head installed and connected inside vault 107

Photo Date:	2/24/2015
Direction:	East
Taken By:	Carl Byrd
X Coordinate:	0
Y Coordinate:	0
Location:	
Description:	Well head installed and electro coupling fused

Photo Date:	2/24/2015
Direction:	East
Taken By:	Carl Byrd
X Coordinate:	0
Y Coordinate:	0
Location:	
Description:	Sonotube and Mirafi 600X at well 107

Photo Date: 2/24/2015
Direction: East
Taken By: Carl Byrd
X Coordinate: 0
Y Coordinate: 0
Location:
Description: Pouring flowable fill at 107

Photo Date: 2/24/2015
Direction: East
Taken By: Carl Byrd
X Coordinate: 0
Y Coordinate: 0
Location:
Description: Pouring flowable fill at well 107

Photo Date: 2/24/2015
Direction: East
Taken By: Carl Byrd
X Coordinate: 0
Y Coordinate: 0
Location:
Description: Electrofusion at well head on well 107

Photo Date:	2/24/2015
Direction:	West
Taken By:	Carl Byrd
X Coordinate:	0
Y Coordinate:	0
Location:	
Description:	Laid conduit on well 107

Photo Date:	2/24/2015
Direction:	East
Taken By:	Carl Byrd
X Coordinate:	0
Y Coordinate:	0
Location:	
Description:	Conduit laid at well 107

Observer	Carl Byrd		
Date	Wednesday, February 25, 2015		
Sky	Sunny	**Work Start**	800
Wind	Light (1-10 mph)	**Work Stop**	1600
Temperature	32-50 degrees	**Work Day**	

Health and Safety	Talked about melting conditions. watch your step for slippery conditions.
Work Observation	Contractor placed sand and compacted it at well 105. Placed CA6 rock at well 107 and compacted it. Poured flowable fill at well 105. Also poured flowable fill in the street for well 106. Installed well covers and grouted them in at wells 105 and 106. Laid down mirafi 600X at wells 105 and 106 along with warning tape. Contractor temporarily set vault lids on wells 105 and 107. Grouted the outside of vault 106 where pipes enter. 2 loads of CA6 was delivered.

Remarks

Personnel	Role
Carl Byrd	Apex
Dan Buck	Widman Supt.
1 - Operator	Widman Construction
1 - Laborer	Widman Construction
Ray Scherrer	URS

Equipment	Count
Work Truck - Widman	2
Case 580L Backhoe	1

Photo Date:	2/25/2015
Direction:	Unknown
Taken By:	Carl Byrd
X Coordinate:	0
Y Coordinate:	0
Location:	
Description:	Well protector grouted in place at well 107.

Photo Date:	2/25/2015
Direction:	West
Taken By:	Carl Byrd
X Coordinate:	0
Y Coordinate:	0
Location:	
Description:	Placing the vault lid at well 107.

Photo Date:	2/25/2015
Direction:	East
Taken By:	Carl Byrd
X Coordinate:	0
Y Coordinate:	0
Location:	
Description:	Place vault lid at well 105.

Photo Date: 2/25/2015
Direction: West
Taken By: Carl Byrd
X Coordinate: 0
Y Coordinate: 0
Location:
Description: Compacting the sand at well 106.

Photo Date: 2/2/2015
Direction: Unknown
Taken By: Carl Byrd
X Coordinate: 0
Y Coordinate: 0
Location:
Description: Compacting the CA6 rock in the street at well 105.

Photo Date: 2/25/2015
Direction: Unknown
Taken By: Carl Byrd
X Coordinate: 0
Y Coordinate: 0
Location:
Description: Setting well protector at well 107.

Photo Date: 2/25/2015
Direction: East
Taken By: Carl Byrd
X Coordinate: 0
Y Coordinate: 0
Location:
Description: Pouring flowable fill at well 105.

Photo Date: 2/25/2015
Direction: West
Taken By: Carl Byrd
X Coordinate: 0
Y Coordinate: 0
Location:
Description: Pouring flowable fill in the street for well 106.

Photo Date: 2/25/2015
Direction: West
Taken By: Carl Byrd
X Coordinate: 0
Y Coordinate: 0
Location:
Description: Done pouring flowable fill in the street at well 106.

Photo Date: 2/25/2015
Direction: East
Taken By: Carl Byrd
X Coordinate: 0
Y Coordinate: 0
Location:
Description: Done pouring flowable fill at well 105.

Photo Date: 2/25/2015
Direction: West
Taken By: Carl Byrd
X Coordinate: 0
Y Coordinate: 0
Location:
Description: Laying CA6 rock on top of cured flowable fill at well 107.

Photo Date: 2/25/2015
Direction: North
Taken By: Carl Byrd
X Coordinate: 0
Y Coordinate: 0
Location:
Description: Pipes connected goinginto vault 106 and laying sand on top of pipes and the compacting the sand.

Photo Date:	2/25/2015
Direction:	Unknown
Taken By:	Carl Byrd
X Coordinate:	0
Y Coordinate:	0
Location:	
Description:	Compacting the sand at well 105.

Observer	Carl Byrd		
Date	Thursday, February 26, 2015		
Sky	Snow	**Work Start**	800
Wind	Moderate (11-25 mph)	**Work Stop**	1600
Temperature	<32 degrees	**Work Day**	

Health and Safety	Talked about cold weather with snowy and icy conditions. Take your time at doing things and be safe and stay warm to keep from getting frostbite.
Work Observation	Contractor picked up all road plates and loaded onto a trailer to be hauled away. Contactors installed gaskets under all 3 vaults lids and permanently installed the lids and put CA6 rock around vault 105 and vault 107 and compacted the rock. Contactor laid CA6 rock in street at well 106 and compacted it. Contractor also loaded all equipment that did not need to stay. Contractor still needs to asphalt the roads at all 3 wells. They still have to install well protectors at well 106 and fill in with soil. France Mechanical is still waiting on the venturi's to arrive so they came come back and install.
Remarks	

Personnel	Role
Carl Byrd	Apex
Dan Buck	Widman Supt.
1 - Operator	Widman Construction
1 - Laborer	Widman Construction

Equipment	Count
Work Truck - Widman	2
Case 580L Backhoe	1

Photo Date:	2/26/2015
Direction:	West
Taken By:	Carl Byrd
X Coordinate:	0
Y Coordinate:	0
Location:	
Description:	Finished compacting CA6 rock in the street at well 106.

Photo Date:	2/26/2015
Direction:	West
Taken By:	Carl Byrd
X Coordinate:	0
Y Coordinate:	0
Location:	
Description:	Compacting CA6 rock around well 107.

Photo Date:	2/26/2015
Direction:	West
Taken By:	Carl Byrd
X Coordinate:	0
Y Coordinate:	0
Location:	
Description:	Compacting CA6 rock in street at well 106.

Photo Date:	2/26/2015
Direction:	West
Taken By:	Carl Byrd
X Coordinate:	0
Y Coordinate:	0
Location:	
Description:	Laid gasket down and setting vault lid at well 106.

Photo Date:	2/26/2015
Direction:	NorthEast
Taken By:	Carl Byrd
X Coordinate:	0
Y Coordinate:	0
Location:	
Description:	Loading the road plates on trailer to be hauled away.

Photo Date:	2/26/2015
Direction:	West
Taken By:	Carl Byrd
X Coordinate:	0
Y Coordinate:	0
Location:	
Description:	Vault lid in place at well 106.

Photo Date:	2/26/2015
Direction:	North
Taken By:	Carl Byrd
X Coordinate:	0
Y Coordinate:	0
Location:	
Description:	Pouring CA6 rock around well 105 after installing the gasket and vault lid.

Photo Date:	2/26/2015
Direction:	West
Taken By:	Carl Byrd
X Coordinate:	0
Y Coordinate:	0
Location:	
Description:	Pouring CA6 rock in street at well 106.

Photo Date:	2/26/2015
Direction:	East
Taken By:	Carl Byrd
X Coordinate:	0
Y Coordinate:	0
Location:	
Description:	All done compacting the CA6 rock at well 105.

ATTACHMENT D

QUALITY TESTING AND ENGINEERING, INC.

FIELD SERVICES REPORT

Project Name: Tri Hydro QTE № 15-0093-C Date: 2-10-15

Client Name: Woodman Contractor: Woodman

Work Requested by: ______ Message Taken: ______

QTE Personnel: Jeffery Ross Project Engineer: MAN

SERVICES REQUESTED:

☐ Soil/Rock Fill ☐ Soil Subgrade ☐ Rock Base ☐ Footing Insp. ☐ Asphalt ☐ Concrete

SPECIFICATION

Compaction 95 % for CA6 Compaction ______ % for asphalt surface, ______ in. thick.

Compaction ______ % for ______ Compaction ______ % for asphalt binder, ______ in. thick.

Moisture within ______ % of optimum Slump ______ in. Air ______ % Strength ______ psi (at 28 days)

☑ Std (ASTM D 698) or ☐ Mod (ASTM D 1557) Asphalt/Concrete Supplier ______

Footings ______ psf Boring Log Y / N If Yes, Soil Type Reported ______

TEST RESULT SUMMARY

Test Method: ☐ Drive Tubes ☐ Sand Cone ☑ Nuclear/Gauge No. 5291

Fill from: ☐ On-site ______ ☑ Off-site Bluff City (CA6) (Proc Curve 141.0)

Test Area(s) Vault rock base

No. tests: 2 Range: Comp%: 95.5 - 96.2 moist%: 5.9 - 6.4

Comments: QTE personnel arrived on-site and took two nuclear density tests, one for each lift of rock being placed and compacted with a walk behind plate compactor. Both tests passed the 95% comp. spec and QTE will return when more testing is needed.

Future Concerns: ______

______ Site Representative

______ QTE Personnel

803 West State Street • O'Fallon, Illinois 62269
phone: 618-632-9900 • fax: 618-632-9922 • email: qte@qteinc.com

QUALITY TESTING AND ENGINEERING, INC.

FIELD SERVICES REPORT

Project Name: TRI HYDRO QTE № 15-0093-C Date: 2-11-15

Client Name: WIDMAN Contractor: WIDMAN

Work Requested by: _____ Message Taken: _____

QTE Personnel: JEFFREY PRESS Project Engineer: _____

SERVICES REQUESTED:

☐ Soil/Rock Fill ☐ Soil Subgrade ☒ Rock Base ☐ Footing Insp. ☐ Asphalt ☐ Concrete

SPECIFICATION

Compaction _____ % for _____ Compaction _____ % for asphalt surface, _____ in. thick.

Compaction _____ % for _____ Compaction _____ % for asphalt binder, _____ in. thick.

Moisture within _____ % of optimum Slump _____ in. Air _____ % Strength _____ psi (at 28 days)

☐ Std (ASTM D 698) or ☐ Mod (ASTM D 1557) Asphalt/Concrete Supplier _____

Footings _____ psf Boring Log Y / N If Yes, Soil Type Reported _____

TEST RESULT SUMMARY

Test Method: ☐ Drive Tubes ☐ Sand Cone ☐ Nuclear/Gauge No. _____

Fill from: ☐ On-site _____ ☒ Off-site CA-06 BLUFF CITY (IDOT CURVE)

Test Area(s) VAULT SOUTH END OF BENCH

No. tests: 1 Range: Comp.: 95.8

Comments: QTE TOOK ONE PENDING SHOT ON ROCK BASE FOR THE VAULT AT THE WEST END OF BIRCH ST. RESULT IS LISTED ABOVE AND QTE WAITED TO TAKE A SHOT ON THE EAST END OF BENCH, BUT WAS NOT NEED AFTER PROBLEMS WERE ENCOUNTERED.

Future Concerns: _____

Site Representative

QTE Personnel

NOTICE: The professional engineer is represented on site solely to observe operations of the contractor identified, form opinions about the adequacy of those operations, and report those opinions to the client. The presence and activities of the engineer's field representatives do not relieve the contractor's obligation to meet contractual requirements. The contractor retains sole responsibility for site safety and the methods and sequences of construction. This preliminary report is provided solely as evidence that field observation was performed. Observations and/or conclusions and/or recommendations conveyed in the final report may vary from and shall take precedence over those indicated in this preliminary report.

803 West State Street • O'Fallon, Illinois 62269
phone: 618.632.9000 • fax: 618.632.9022 • email: qte@qteinc.com

QUALITY TESTING AND ENGINEERING, INC.

FIELD SERVICES REPORT

Project Name: TRI HYDRO   QTE № 15-0093-C   Date: 2-12-15

Client Name: WIDMAN   Contractor: WIDMAN

Work Requested by: ______   Message Taken: ______

QTE Personnel: Jeffrey Prosse   Project Engineer: [illegible]

SERVICES REQUESTED:

☐ Soil/Rock Fill ☐ Soil Subgrade ☒ Rock Base ☐ Footing Insp. ☐ Asphalt ☐ Concrete

SPECIFICATION

Compaction ______ % for ______

Compaction ______ % for ______

Moisture within ______ % of optimum

☐ Std (ASTM D 698) or ☐ Mod (ASTM D 1557)

Footings ______ psf   Boring Log Y / N If Yes, Soil Type Reported ______

Compaction ______ % for asphalt surface, ______ in. thick.

Compaction ______ % for asphalt binder, ______ in. thick.

Slump ______ in.   Air ______ % Strength ______ psi (at 28 days)

Asphalt/Concrete Supplier ______

TEST RESULT SUMMARY

Test Method: ☐ Drive Tubes ☐ Sand Cone ☐ Nuclear/Gauge No. ______

Fill from: ☐ On-site ______ ☐ Off-site ______

Test Area(s) ______

No. tests: 1   Range: Comp%: 95.7

Comments: QTE TOOK ONE SHOT ON ROCK BASE FOR A POINT IN THE EAST END OF BLDG. RESULTS IS LISTED ABOVE AND WIDMAN WAS TOLD THE RESULT BEFORE LEAVING.

Future Concerns: ______

______ Site Representative

[signature] QTE Personnel

NOTICE: The professional engineer is represented on site solely to observe operations of the contractor identified, form opinions about the adequacy of those operations, and report those opinions to the client. The presence and activities of the engineer's field representatives do not relieve the contractor's obligation to meet contractual requirements. The contractor retains sole responsibility for site safety and the methods and sequences of construction. This preliminary report is provided solely as evidence that field observation was performed. Observations and/or conclusions and/or recommendations conveyed in the final report may vary from and shall take precedence over those indicated in this preliminary report.

803 West State Street • O'Fallon, Illinois 62269
phone: 618-632-9900 • fax: 618-632-9922 • email: qte@qteinc.com

ATTACHMENT E

FRANCE MECHANICAL CORPORATION
PHONE: (618) 656 - 3202
FAX: (618) 656 - 2418
MAILING ADDRESS: POST OFFICE BOX 646 - EDWARDSVILLE, IL 62025
SHIPPING ADDRESS: 25 KETTLE RIVER DRIVE - GLEN CARBON, IL 62034

Widman Construction, Inc.
Attn: Travis Widman
27199 Illinois RT 3
Godfrey, Il 62035

March 6th, 2014

Re: Soil Vapor Extraction

Travis:

On February the 6th the 2" HDPE pipe manifolds fabricated for the three vaults were pneumatically air tested at a test pressure of 11.5#'s and held for 15 minutes each. During the 15 minutes the fusion joints were leak tested with leak detection solution. No bubbles were found and the pressure did not drop below 11.5#'s.

David Munsterman
David Munsterman

France Mechanical Corporation
618-410-7855

FRANCE MECHANICAL CORPORATION
PHONE: (618) 656 - 3202
FAX: (618) 656 - 2418
MAILING ADDRESS: POST OFFICE BOX 646 - EDWARDSVILLE, IL 62025
SHIPPING ADDRESS: 25 KETTLE RIVER DRIVE - GLEN CARBON, IL 62034

Widman Construction, Inc.
Attn: Travis Widman
27199 Illinois RT 3
Godfrey, Il 62035

February 13th, 2014

Re: Soil Vapor Extraction

Travis:

On February 13th at vault HSVE-105 the 2" HDPE pipe outside of the manhole that is routed to the well heads and the 4" HDPE routed to the existing tie-in location was pneumatically air tested at a test pressure of 11.5#'s and held for 15 minutes each. During the 15 minutes the fusion joints were leak tested with leak detection solution. No bubbles were found and the pressure did not drop below 11.5#'s.

David Munsterman
David Munsterman

France Mechanical Corporation
618-410-7855

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PHONE: (618) 656 - 3202
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MAILING ADDRESS: POST OFFICE BOX 646 - EDWARDSVILLE, IL 62025
SHIPPING ADDRESS: 25 KETTLE RIVER DRIVE - GLEN CARBON, IL 62034

Widman Construction, Inc.
Attn: Travis Widman
27199 Illinois RT 3
Godfrey, Il 62035

February 12th, 2014

Re: Soil Vapor Extraction

Travis:

On February 11th at vault HSVE-106 the 2" HDPE pipe outside of the manhole that is routed to the well heads and the 4" HDPE routed to the existing tie-in location was pneumatically air tested at a test pressure of 11.5#'s and held for 15 minutes each. During the 15 minutes the fusion joints were leak tested with leak detection solution. No bubbles were found and the pressure did not drop below 11.5#'s.

David Munsterman
David Munsterman

France Mechanical Corporation
618-410-7855

FRANCE MECHANICAL CORPORATION
PHONE: (618) 656 - 3202
FAX: (618) 656 - 2418
MAILING ADDRESS: POST OFFICE BOX 646 - EDWARDSVILLE, IL 62025
SHIPPING ADDRESS: 25 KETTLE RIVER DRIVE - GLEN CARBON, IL 62034

Widman Construction, Inc.
Attn: Travis Widman
27199 Illinois RT 3
Godfrey, Il 62035

February 16th, 2014

Re: Soil Vapor Extraction

Travis:

On February 16th at vault HSVE-105 the 2" HDPE pipe outside of the manhole that is routed to the well heads and the 4" HDPE routed to the existing tie-in location was pneumatically air tested at a test pressure of 11.5#'s and held for 15 minutes each. During the 15 minutes the fusion joints were leak tested with leak detection solution. No bubbles were found and the pressure did not drop below 11.5#'s.

David Munsterman
David Munsterman

France Mechanical Corporation
618-410-7855

ATTACHMENT F

February 19, 2015

Paul Michalski
Trihydro Corporation
1252 Commerce Drive
Laramie, WY 82070
TEL: (513) 429-7452
FAX:

RE: Hartford Petroleum Release Site, Hartford, IL **WorkOrder:** 15020602

Dear Paul Michalski:

TEKLAB, INC received 3 samples on 2/11/2015 3:23:00 PM for the analysis presented in the following report.

Samples are analyzed on an as received basis unless otherwise requested and documented. The sample results contained in this report relate only to the requested analytes of interest as directed on the chain of custody. NELAP accredited fields of testing are indicated by the letters NELAP under the Certification column. Unless otherwise documented within this report, Teklab Inc. analyzes samples utilizing the most current methods in compliance with 40CFR. All tests are performed in the Collinsville, IL laboratory unless otherwise noted in the Case Narrative.

All quality control criteria applicable to the test methods employed for this project have been satisfactorily met and are in accordance with NELAP except where noted. The following report shall not be reproduced, except in full, without the written approval of Teklab, Inc.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

Marvin L. Darling II

Marvin L. Darling
Project Manager
(618)344-1004 ex 41
mdarling@teklabinc.com

Report Contents

Client: Trihydro Corporation
Work Order: 15020602
Client Project: Hartford Petroleum Release Site, Hartford, IL
Report Date: 19-Feb-15

This reporting package includes the following:

Client: Trihydro Corporation **Work Order:** 15020602

Client Project: Hartford Petroleum Release Site, Hartford, IL **Report Date:** 19-Feb-15

Abbr Definition

CCV	Continuing calibration verification is a check of a standard to determine the state of calibration of an instrument between recalibration.
DF	Dilution factor is the dilution performed during analysis only and does not take into account any dilutions made during sample preparation. The reported result is final and includes all dilutions factors.
DNI	Did not ignite
DUP	Laboratory duplicate is an aliquot of a sample taken from the same container under laboratory conditions for independent processing and analysis independently of the original aliquot.
ICV	Initial calibration verification is a check of a standard to determine the state of calibration of an instrument before sample analysis is initiated.
IDPH	IL Dept. of Public Health
LCS	Laboratory control sample, spiked with verified known amounts of analytes, is analyzed exactly like a sample to establish intra-laboratory or analyst specific precision and bias or to assess the performance of all or a portion of the measurement system. The acceptable recovery range is in the QC Package (provided upon request).
LCSD	Laboratory control sample duplicate is a replicate laboratory control sample that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
MB	Method blank is a sample of a matrix similar to the batch of associated sample (when available) that is free from the analytes of interest and is processed simultaneously with and under the same conditions as samples through all steps of the analytical procedures, and in which no target analytes or interferences should present at concentrations that impact the analytical results for sample analyses.
MDL	Method detection limit means the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero.
MS	Matrix spike is an aliquot of matrix fortified (spiked) with known quantities of specific analytes that is subjected to the entire analytical procedures in order to determine the effect of the matrix on an approved test method's recovery system. The acceptable recovery range is listed in the QC Package (provided upon request).
MSD	Matrix spike duplicate means a replicate matrix spike that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
MW	Molecular weight
ND	Not Detected at the Reporting Limit
NELAP	NELAP Accredited
PQL	Practical quantitation limit means the lowest level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operation conditions. The acceptable recovery range is listed in the QC Package (provided upon request).
RL	The reporting limit the lowest level that the data is displayed in the final report. The reporting limit may vary according to customer request or sample dilution. The reporting limit may not be less than the MDL.
RPD	Relative percent difference is a calculated difference between two recoveries (ie. MS/MSD). The acceptable recovery limit is listed in the QC Package (provided upon request).
SPK	The spike is a known mass of target analyte added to a blank sample or sub-sample; used to determine recovery deficiency or for other quality control purposes.
Surr	Surrogates are compounds which are similar to the analytes of interest in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples.
TNTC	Too numerous to count (> 200 CFU)

Qualifiers

# -	Unknown hydrocarbon	B -	Analyte detected in associated Method Blank
E -	Value above quantitation range	H -	Holding times exceeded
J -	Analyte detected below quantitation limits	M -	Manual Integration used to determine area response
ND -	Not Detected at the Reporting Limit	R -	RPD outside accepted recovery limits
S -	Spike Recovery outside recovery limits	X -	Value exceeds Maximum Contaminant Level

Case Narrative

http://www.teklabinc.com/

Client: Trihydro Corporation
Work Order: 15020602
Client Project: Hartford Petroleum Release Site, Hartford, IL
Report Date: 19-Feb-15

Cooler Receipt Temp: 8.22 °C

Locations and Accreditations

	Collinsville	Springfield	Kansas City	Collinsville Air
Address	5445 Horseshoe Lake Road	3920 Pintail Dr	8421 Nieman Road	5445 Horseshoe Lake Road
	Collinsville, IL 62234-7425	Springfield, IL 62711-9415	Lenexa, KS 66214	Collinsville, IL 62234-7425
Phone	(618) 344-1004	(217) 698-1004	(913) 541-1998	(618) 344-1004
Fax	(618) 344-1005	(217) 698-1005	(913) 541-1998	(618) 344-1005
Email	jhriley@teklabinc.com	KKlostermann@teklabinc.com	dthompson@teklabinc.com	EHurley@teklabinc.com

State	Dept	Cert #	NELAP	Exp Date	Lab
Illinois	IEPA	100226	NELAP	1/31/2016	Collinsville
Kansas	KDHE	E-10374	NELAP	4/30/2015	Collinsville
Louisiana	LDEQ	166493	NELAP	6/30/2015	Collinsville
Louisiana	LDEQ	166578	NELAP	6/30/2015	Collinsville
Texas	TCEQ	T104704515-12-1	NELAP	7/31/2015	Collinsville
Arkansas	ADEQ	88-0966		3/14/2015	Collinsville
Illinois	IDPH	17584		5/31/2015	Collinsville
Kentucky	KDEP	98006		12/31/2015	Collinsville
Kentucky	UST	0073		1/31/2016	Collinsville
Missouri	MDNR	00930		5/31/2015	Collinsville
Oklahoma	ODEQ	9978		8/31/2015	Collinsville

Client: Trihydro Corporation **Work Order:** 15020602

Client Project: Hartford Petroleum Release Site, Hartford, IL **Report Date:** 19-Feb-15

Lab ID: 15020602-001 **Client Sample ID:** HSVE-105S (3-4), 021115

Matrix: SOLID **Collection Date:** 02/11/2015 14:00

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**17.7**	%	1	02/11/2015 20:56	R200913
SW-846 3550B, 8015B, TOTAL PETROLEUM HYDROCARBONS (OA-2) BY GC/FID								
Diesel	NELAP	121	S	**735**	mg/Kg-dry	10	02/17/2015 19:01	106352
Surr: n-Tetracontane		30.6-141		**107.0**	%REC	10	02/17/2015 19:01	106352
MS and MSD did not recover within control limits due to sample composition.								
SW-846 3550B, 8270C SIMS, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
Acenaphthene	NELAP	0.041		**ND**	mg/Kg-dry	10	02/12/2015 23:03	106224
Acenaphthylene	NELAP	0.041		**ND**	mg/Kg-dry	10	02/12/2015 23:03	106224
Anthracene	NELAP	0.041		**ND**	mg/Kg-dry	10	02/12/2015 23:03	106224
Benzo(a)anthracene	NELAP	0.041		**ND**	mg/Kg-dry	10	02/12/2015 23:03	106224
Benzo(a)pyrene	NELAP	0.041		**ND**	mg/Kg-dry	10	02/12/2015 23:03	106224
Benzo(b)fluoranthene	NELAP	0.041		**ND**	mg/Kg-dry	10	02/12/2015 23:03	106224
Benzo(g,h,i)perylene	NELAP	0.041		**ND**	mg/Kg-dry	10	02/12/2015 23:03	106224
Benzo(k)fluoranthene	NELAP	0.041		**ND**	mg/Kg-dry	10	02/12/2015 23:03	106224
Chrysene	NELAP	0.041		**ND**	mg/Kg-dry	10	02/12/2015 23:03	106224
Dibenzo(a,h)anthracene	NELAP	0.041		**ND**	mg/Kg-dry	10	02/12/2015 23:03	106224
Fluoranthene	NELAP	0.041		**ND**	mg/Kg-dry	10	02/12/2015 23:03	106224
Fluorene	NELAP	0.041		**ND**	mg/Kg-dry	10	02/12/2015 23:03	106224
Indeno(1,2,3-cd)pyrene	NELAP	0.041		**ND**	mg/Kg-dry	10	02/12/2015 23:03	106224
Naphthalene	NELAP	0.041		**0.068**	mg/Kg-dry	10	02/12/2015 23:03	106224
Phenanthrene	NELAP	0.041		**ND**	mg/Kg-dry	10	02/12/2015 23:03	106224
Pyrene	NELAP	0.041		**ND**	mg/Kg-dry	10	02/12/2015 23:03	106224
Surr: 2-Fluorobiphenyl		10-170		**41.9**	%REC	10	02/12/2015 23:03	106224
Surr: Nitrobenzene-d5		10-163		**34.9**	%REC	10	02/12/2015 23:03	106224
Surr: p-Terphenyl-d14		10-154		**49.9**	%REC	10	02/12/2015 23:03	106224
Elevated reporting limit due to sample extract composition.								
SW-846 5030, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
Benzene		1130		**50500**	µg/Kg-dry	500	02/12/2015 15:52	106249
Ethylbenzene		5640		**15400**	µg/Kg-dry	500	02/12/2015 15:52	106249
Toluene		5640		**225000**	µg/Kg-dry	500	02/12/2015 15:52	106249
Xylenes, Total		5640		**26900**	µg/Kg-dry	500	02/12/2015 15:52	106249
Gasoline Range Organics (OA-1)		1130000		**5460000**	µg/Kg-dry	500	02/12/2015 15:52	106249
Surr: 1,2-Dichloroethane-d4		72.2-131		**98.0**	%REC	500	02/12/2015 15:52	106249
Surr: 4-Bromofluorobenzene		82.1-116		**99.2**	%REC	500	02/12/2015 15:52	106249
Surr: Toluene-d8		86-116		**99.9**	%REC	500	02/12/2015 15:52	106249

Client: Trihydro Corporation **Work Order:** 15020602

Client Project: Hartford Petroleum Release Site, Hartford, IL **Report Date:** 19-Feb-15

Lab ID: 15020602-002 **Client Sample ID:** Excavated Soils, 021115

Matrix: SOLID **Collection Date:** 02/11/2015 14:30

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
ASTM D92								
Ignitability, Open Cup		60		**>200**	°F	1	02/13/2015 8:42	R200951
SW-846 9012A (TOTAL)								
Cyanide	NELAP	0.25		**< 0.25**	mg/Kg	1	02/12/2015 15:27	106268
SW-846 9034 (REACTIVE)								
Sulfide, Reactive	NELAP	10.0		**< 10.0**	mg/Kg	1	02/17/2015 11:33	106342
SW-846 9045C								
pH (1:1)	NELAP	1.00		**6.67**		1	02/12/2015 14:35	R200928
SW-846 9065								
Phenols	NELAP	2.75		**< 2.75**	mg/Kg	1	02/17/2015 9:49	106340
SW-846 9095								
Paint Filter	NELAP	0		**Pass**	Pass/Fail	1	02/12/2015 15:46	R200956
SW-846 1311, 3010A, 6010B, METALS IN TCLP EXTRACT BY ICP								
Arsenic	NELAP	0.250		**< 0.250**	mg/L	1	02/12/2015 18:05	106232
Barium	NELAP	0.0500		**0.700**	mg/L	1	02/12/2015 18:05	106232
Cadmium	NELAP	0.0200		**< 0.0200**	mg/L	1	02/12/2015 18:05	106232
Chromium	NELAP	0.100		**< 0.100**	mg/L	1	02/12/2015 18:05	106232
Lead	NELAP	0.400		**< 0.400**	mg/L	1	02/12/2015 18:05	106232
Selenium	NELAP	0.500		**< 0.500**	mg/L	1	02/12/2015 18:05	106232
Silver	NELAP	0.100		**< 0.100**	mg/L	1	02/12/2015 18:05	106232
SW-846 1311, 7470A IN TCLP EXTRACT								
Mercury	NELAP	0.00020		**< 0.00020**	mg/L	1	02/12/2015 16:17	106237
SW-846 1311, 3510C, 8270C, SEMI-VOLATILES IN TCLP EXTRACT BY GC/MS								
2,4,5-Trichlorophenol	NELAP	0.100		**ND**	mg/L	1	02/12/2015 18:09	106209
2,4,6-Trichlorophenol	NELAP	0.100		**ND**	mg/L	1	02/12/2015 18:09	106209
2,4-Dinitrotoluene	NELAP	0.100		**ND**	mg/L	1	02/12/2015 18:09	106209
Cresols, Total	NELAP	0.100		**ND**	mg/L	1	02/12/2015 18:09	106209
Hexachlorobenzene	NELAP	0.100		**ND**	mg/L	1	02/12/2015 18:09	106209
Hexachlorobutadiene	NELAP	0.100		**ND**	mg/L	1	02/12/2015 18:09	106209
Hexachloroethane	NELAP	0.100		**ND**	mg/L	1	02/12/2015 18:09	106209
m,p-Cresol	NELAP	0.100		**ND**	mg/L	1	02/12/2015 18:09	106209
Nitrobenzene	NELAP	0.100		**ND**	mg/L	1	02/12/2015 18:09	106209
o-Cresol	NELAP	0.100		**ND**	mg/L	1	02/12/2015 18:09	106209
Pentachlorophenol	NELAP	0.200		**ND**	mg/L	1	02/12/2015 18:09	106209
Pyridine	NELAP	0.200		**ND**	mg/L	1	02/12/2015 18:09	106209
Surr: 2,4,6-Tribromophenol		26.4-130		**82.3**	%REC	1	02/12/2015 18:09	106209
Surr: 2-Fluorobiphenyl		38.3-115		**64.2**	%REC	1	02/12/2015 18:09	106209
Surr: 2-Fluorophenol		16.5-65		**40.7**	%REC	1	02/12/2015 18:09	106209
Surr: Nitrobenzene-d5		47.6-107	S	**59.2**	%REC	1	02/12/2015 18:09	106209
Surr: Phenol-d5		9.94-41.7		**25.3**	%REC	1	02/12/2015 18:09	106209
Surr: p-Terphenyl-d14		65.6-127		**73.0**	%REC	1	02/12/2015 18:09	106209
Surrogate recovery is outside QC limits due to matrix interference.								
SW-846 3550B, 8082, POLYCHLORINATED BIPHENYLS (PCBS) BY GC/ECD								
Aroclor 1016	NELAP	37.2		**ND**	µg/Kg	1	02/12/2015 17:20	106196
Aroclor 1221	NELAP	37.2		**ND**	µg/Kg	1	02/12/2015 17:20	106196
Aroclor 1232	NELAP	37.2		**ND**	µg/Kg	1	02/12/2015 17:20	106196
Aroclor 1242	NELAP	37.2		**ND**	µg/Kg	1	02/12/2015 17:20	106196

Client: Trihydro Corporation **Work Order:** 15020602

Client Project: Hartford Petroleum Release Site, Hartford, IL **Report Date:** 19-Feb-15

Lab ID: 15020602-002 **Client Sample ID:** Excavated Soils, 021115

Matrix: SOLID **Collection Date:** 02/11/2015 14:30

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 3550B, 8082, POLYCHLORINATED BIPHENYLS (PCBS) BY GC/ECD								
Aroclor 1248	NELAP	37.2		**ND**	µg/Kg	1	02/12/2015 17:20	106196
Aroclor 1254	NELAP	37.2		**ND**	µg/Kg	1	02/12/2015 17:20	106196
Aroclor 1260	NELAP	37.2		**ND**	µg/Kg	1	02/12/2015 17:20	106196
Surr: Decachlorobiphenyl		5-156		**121.7**	%REC	1	02/12/2015 17:20	106196
Surr: Tetrachloro-meta-xylene		7.35-123		**84.8**	%REC	1	02/12/2015 17:20	106196
SW-846 9023								
Extractable Organic Halogens (EOX)	NELAP	48.5	SR	**74.6**	mg/Kg	1	02/19/2015 9:04	106389
RPD, MS and MSD recovery did not recover within control limits due to sample composition. Confirmed by re-extraction.								
SW-846 1311, 5030, 8260B, VOLATILE ORGANIC COMPOUNDS IN TCLP EXTRACT BY GC/MS								
1,1-Dichloroethene	NELAP	0.500		**ND**	mg/L	100	02/17/2015 10:29	106373
1,2-Dichloroethane	NELAP	0.500		**ND**	mg/L	100	02/17/2015 10:29	106373
1,4-Dichlorobenzene	NELAP	0.500		**ND**	mg/L	100	02/17/2015 10:29	106373
2-Butanone	NELAP	5.00		**ND**	mg/L	100	02/17/2015 10:29	106373
Benzene	NELAP	0.200		**ND**	mg/L	100	02/17/2015 10:29	106373
Carbon tetrachloride	NELAP	0.500		**ND**	mg/L	100	02/17/2015 10:29	106373
Chlorobenzene	NELAP	0.500		**ND**	mg/L	100	02/17/2015 10:29	106373
Chloroform	NELAP	0.500		**ND**	mg/L	100	02/17/2015 10:29	106373
Tetrachloroethene	NELAP	0.500		**ND**	mg/L	100	02/17/2015 10:29	106373
Trichloroethene	NELAP	0.500		**ND**	mg/L	100	02/17/2015 10:29	106373
Vinyl chloride	NELAP	0.200		**ND**	mg/L	100	02/17/2015 10:29	106373
Surr: 1,2-Dichloroethane-d4		74.7-129		**100.0**	%REC	100	02/17/2015 10:29	106373
Surr: 4-Bromofluorobenzene		86-119		**98.0**	%REC	100	02/17/2015 10:29	106373
Surr: Dibromofluoromethane		81.7-123		**99.8**	%REC	100	02/17/2015 10:29	106373
Surr: Toluene-d8		84.3-114		**97.6**	%REC	100	02/17/2015 10:29	106373

Client: Trihydro Corporation **Work Order:** 15020602

Client Project: Hartford Petroleum Release Site, Hartford, IL **Report Date:** 19-Feb-15

Lab ID: 15020602-003 **Client Sample ID:** RB20767, 021115

Matrix: SOLID **Collection Date:** 02/11/2015 14:10

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
ASTM D92								
Ignitability, Open Cup		60		**>200**	°F	1	02/13/2015 12:56	R200951
SW-846 9012A (TOTAL)								
Cyanide	NELAP	0.25		**< 0.25**	mg/Kg	1	02/12/2015 15:32	106268
SW-846 9034 (REACTIVE)								
Sulfide, Reactive	NELAP	9.9		**< 9.9**	mg/Kg	1	02/17/2015 11:34	106342
SW-846 9045C								
pH (1:1)	NELAP	1.00		**7.40**		1	02/12/2015 14:41	R200928
SW-846 9065								
Phenols	NELAP	2.67		**< 2.67**	mg/Kg	1	02/17/2015 9:49	106340
SW-846 9095								
Paint Filter	NELAP	0		**Pass**	Pass/Fail	1	02/13/2015 8:59	R200956
SW-846 1311, 3010A, 6010B, METALS IN TCLP EXTRACT BY ICP								
Arsenic	NELAP	0.250		**< 0.250**	mg/L	1	02/12/2015 18:12	106232
Barium	NELAP	0.0500		**0.786**	mg/L	1	02/12/2015 18:12	106232
Cadmium	NELAP	0.0200		**< 0.0200**	mg/L	1	02/12/2015 18:12	106232
Chromium	NELAP	0.100		**< 0.100**	mg/L	1	02/12/2015 18:12	106232
Lead	NELAP	0.400		**< 0.400**	mg/L	1	02/12/2015 18:12	106232
Selenium	NELAP	0.500		**< 0.500**	mg/L	1	02/12/2015 18:12	106232
Silver	NELAP	0.100		**< 0.100**	mg/L	1	02/12/2015 18:12	106232
SW-846 1311, 7470A IN TCLP EXTRACT								
Mercury	NELAP	0.00020		**< 0.00020**	mg/L	1	02/12/2015 16:22	106237
SW-846 1311, 3510C, 8270C, SEMI-VOLATILES IN TCLP EXTRACT BY GC/MS								
2,4,5-Trichlorophenol	NELAP	0.100		**ND**	mg/L	1	02/12/2015 19:14	106209
2,4,6-Trichlorophenol	NELAP	0.100		**ND**	mg/L	1	02/12/2015 19:14	106209
2,4-Dinitrotoluene	NELAP	0.100		**ND**	mg/L	1	02/12/2015 19:14	106209
Cresols, Total	NELAP	0.100		**ND**	mg/L	1	02/12/2015 19:14	106209
Hexachlorobenzene	NELAP	0.100		**ND**	mg/L	1	02/12/2015 19:14	106209
Hexachlorobutadiene	NELAP	0.100		**ND**	mg/L	1	02/12/2015 19:14	106209
Hexachloroethane	NELAP	0.100		**ND**	mg/L	1	02/12/2015 19:14	106209
m,p-Cresol	NELAP	0.100		**ND**	mg/L	1	02/12/2015 19:14	106209
Nitrobenzene	NELAP	0.100		**ND**	mg/L	1	02/12/2015 19:14	106209
o-Cresol	NELAP	0.100		**ND**	mg/L	1	02/12/2015 19:14	106209
Pentachlorophenol	NELAP	0.200		**ND**	mg/L	1	02/12/2015 19:14	106209
Pyridine	NELAP	0.200		**ND**	mg/L	1	02/12/2015 19:14	106209
Surr: 2,4,6-Tribromophenol		26.4-130		**76.0**	%REC	1	02/12/2015 19:14	106209
Surr: 2-Fluorobiphenyl		38.3-115		**69.1**	%REC	1	02/12/2015 19:14	106209
Surr: 2-Fluorophenol		16.5-65		**38.3**	%REC	1	02/12/2015 19:14	106209
Surr: Nitrobenzene-d5		47.6-107		**58.1**	%REC	1	02/12/2015 19:14	106209
Surr: Phenol-d5		9.94-41.7		**25.9**	%REC	1	02/12/2015 19:14	106209
Surr: p-Terphenyl-d14		65.6-127		**72.7**	%REC	1	02/12/2015 19:14	106209
SW-846 3550B, 8082, POLYCHLORINATED BIPHENYLS (PCBS) BY GC/ECD								
Aroclor 1016	NELAP	37.0		**ND**	µg/Kg	1	02/12/2015 17:37	106196
Aroclor 1221	NELAP	37.0		**ND**	µg/Kg	1	02/12/2015 17:37	106196
Aroclor 1232	NELAP	37.0		**ND**	µg/Kg	1	02/12/2015 17:37	106196
Aroclor 1242	NELAP	37.0		**ND**	µg/Kg	1	02/12/2015 17:37	106196
Aroclor 1248	NELAP	37.0		**ND**	µg/Kg	1	02/12/2015 17:37	106196

Client: Trihydro Corporation **Work Order:** 15020602

Client Project: Hartford Petroleum Release Site, Hartford, IL **Report Date:** 19-Feb-15

Lab ID: 15020602-003 **Client Sample ID:** RB20767, 021115

Matrix: SOLID **Collection Date:** 02/11/2015 14:10

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 3550B, 8082, POLYCHLORINATED BIPHENYLS (PCBS) BY GC/ECD								
Aroclor 1254	NELAP	37.0		**ND**	µg/Kg	1	02/12/2015 17:37	106196
Aroclor 1260	NELAP	37.0		**ND**	µg/Kg	1	02/12/2015 17:37	106196
Surr: Decachlorobiphenyl		5-156		**114.7**	%REC	1	02/12/2015 17:37	106196
Surr: Tetrachloro-meta-xylene		7.35-123		**85.5**	%REC	1	02/12/2015 17:37	106196
SW-846 9023								
Extractable Organic Halogens (EOX)	NELAP	49.0		**< 49.0**	mg/Kg	1	02/19/2015 8:08	106389
SW-846 1311, 5030, 8260B, VOLATILE ORGANIC COMPOUNDS IN TCLP EXTRACT BY GC/MS								
1,1-Dichloroethene	NELAP	0.500		**ND**	mg/L	100	02/17/2015 10:58	106373
1,2-Dichloroethane	NELAP	0.500		**ND**	mg/L	100	02/17/2015 10:58	106373
1,4-Dichlorobenzene	NELAP	0.500		**ND**	mg/L	100	02/17/2015 10:58	106373
2-Butanone	NELAP	5.00		**ND**	mg/L	100	02/17/2015 10:58	106373
Benzene	NELAP	0.200		**ND**	mg/L	100	02/17/2015 10:58	106373
Carbon tetrachloride	NELAP	0.500		**ND**	mg/L	100	02/17/2015 10:58	106373
Chlorobenzene	NELAP	0.500		**ND**	mg/L	100	02/17/2015 10:58	106373
Chloroform	NELAP	0.500		**ND**	mg/L	100	02/17/2015 10:58	106373
Tetrachloroethene	NELAP	0.500		**ND**	mg/L	100	02/17/2015 10:58	106373
Trichloroethene	NELAP	0.500		**ND**	mg/L	100	02/17/2015 10:58	106373
Vinyl chloride	NELAP	0.200		**ND**	mg/L	100	02/17/2015 10:58	106373
Surr: 1,2-Dichloroethane-d4		74.7-129		**101.5**	%REC	100	02/17/2015 10:58	106373
Surr: 4-Bromofluorobenzene		86-119		**95.9**	%REC	100	02/17/2015 10:58	106373
Surr: Dibromofluoromethane		81.7-123		**99.3**	%REC	100	02/17/2015 10:58	106373
Surr: Toluene-d8		84.3-114		**94.5**	%REC	100	02/17/2015 10:58	106373

Client: Trihydro Corporation **Work Order:** 15020602

Client Project: Hartford Petroleum Release Site, Hartford, IL **Report Date:** 19-Feb-15

ASTM D92

Batch R200951 **SampType:** DUP Units °F RPD Limit 5

SampID: 15020410-023ADUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Ignitability, Open Cup	60		**141**				141.0	0.00	02/12/2015

EPA SW846 3550C, 5035A, ASTM D2974

Batch R200913 **SampType:** LCS Units %

SampID: LCS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Percent Moisture	0.1		**99.0**	99.00	0	100.0	90	110	02/11/2015

Batch R200913 **SampType:** LCSQC Units %

SampID: LCSQC

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Percent Moisture	0.1		**99.0**	99.00	0	100.0	90	110	02/11/2015

Batch R200913 **SampType:** DUP Units % RPD Limit 15

SampID: 15020528-005B DUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Percent Moisture	0.1		**15.3**				14.40	6.13	02/11/2015

Batch R200913 **SampType:** DUP Units % RPD Limit 15

SampID: 15020528-006B DUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Percent Moisture	0.1		**21.5**				21.39	0.61	02/11/2015

Batch R200913 **SampType:** DUP Units % RPD Limit 15

SampID: 15020606-011A DUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Percent Moisture	0.1		**22.9**				22.25	2.88	02/11/2015

SW-846 9012A (TOTAL)

Batch 106268 **SampType:** MBLK Units mg/Kg

SampID: MBLK 150211 TCN2

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Cyanide	0.25		**< 0.25**						02/12/2015

Batch 106268 **SampType:** LCS Units mg/Kg

SampID: LCS 150211 TCN2

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Cyanide	0.25		**1.26**	1.250	0	101.2	85	115	02/12/2015

Client: Trihydro Corporation **Work Order:** 15020602

Client Project: Hartford Petroleum Release Site, Hartford, IL **Report Date:** 19-Feb-15

SW-846 9012A (TOTAL)

Batch 106268 **SampType:** MS Units **mg/Kg-dry**

SampID: 15020388-007BMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Cyanide	1.46	S	**5.90**	7.281	4.321	21.7	75	125	02/12/2015

Batch 106268 **SampType:** MSD Units **mg/Kg-dry** RPD Limit **15**

SampID: 15020388-007BMSD

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Cyanide	1.46	SR	**4.40**	7.281	4.321	1.0	5.902	29.24	02/12/2015

Batch 106268 **SampType:** MS Units **mg/Kg-dry**

SampID: 15020388-008BMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Cyanide	5.84	S	**44.4**	29.19	33.53	37.3	75	125	02/12/2015

Batch 106268 **SampType:** MSD Units **mg/Kg-dry** RPD Limit **15**

SampID: 15020388-008BMSD

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Cyanide	5.84	S	**39.3**	29.19	33.53	19.7	44.42	12.27	02/12/2015

SW-846 9034 (REACTIVE)

Batch 106342 **SampType:** MBLK Units **mg/Kg**

SampID: MBLK 150217 RSUL

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Sulfide, Reactive	10.0		**< 10.0**						02/17/2015

Batch 106342 **SampType:** LCS Units **mg/Kg**

SampID: LCS 150217 RSUL

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Sulfide, Reactive	10.0		**80.8**	95.20	0	84.9	47.3	109	02/17/2015

Batch 106342 **SampType:** DUP Units **mg/Kg** RPD Limit **10**

SampID: 15020602-003ADUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Sulfide, Reactive	9.5		**< 9.5**				0	0.00	02/17/2015

SW-846 9045C

Batch R200928 **SampType:** LCS Units

SampID: LCS-R200928

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
pH (1:1)	1.00		**7.02**	7.000	0	100.3	99.1	100.8	02/12/2015

Client: Trihydro Corporation **Work Order:** 15020602

Client Project: Hartford Petroleum Release Site, Hartford, IL **Report Date:** 19-Feb-15

SW-846 9045C

Batch R200928 **SampType:** DUP Units RPD Limit **10**

SampID: 15020602-002ADUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
pH (1:1)	1.00		**6.93**				6.670	3.82	02/12/2015

Batch R200928 **SampType:** DUP Units RPD Limit **10**

SampID: 15020602-003ADUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
pH (1:1)	1.00		**7.36**				7.400	0.54	02/12/2015

Batch R200928 **SampType:** DUP Units RPD Limit **10**

SampID: 15020558-001ADUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
pH (1:1)	1.00		**5.56**				5.530	0.54	02/12/2015

Batch R200928 **SampType:** DUP Units RPD Limit **10**

SampID: 15020559-001ADUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
pH (1:1)	1.00		**3.88**				3.880	0.00	02/12/2015

Batch R200928 **SampType:** DUP Units RPD Limit **10**

SampID: 15020594-001ADUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
pH (1:1)	1.00		**6.39**				6.110	4.48	02/12/2015

SW-846 9065

Batch 106340 **SampType:** MBLK Units **mg/Kg**

SampID: MBLK 150216 OOH

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Phenols	2.57		**< 2.57**	0.05000	0	0	0	0	02/17/2015

Batch 106340 **SampType:** LCS Units **mg/Kg**

SampID: LCS 150216 OOH

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Phenols	2.60		**9.94**	10.00	0	99.4	90	110	02/17/2015

Batch 106340 **SampType:** MS Units **mg/Kg**

SampID: 15020602-003AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Phenols	2.57		**9.84**	10.03	0	98.1	85	115	02/17/2015

Client: Trihydro Corporation **Work Order:** 15020602

Client Project: Hartford Petroleum Release Site, Hartford, IL **Report Date:** 19-Feb-15

SW-846 9065

Batch 106340 **SampType:** MSD Units **mg/Kg** RPD Limit **15**

SampID: 15020602-003AMSD

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Phenols	2.69		**9.90**	9.778	0	101.2	9.841	0.55	02/17/2015

SW-846 9095

Batch R200956 **SampType:** DUP Units **Pass/Fail** RPD Limit **0**

SampID: 15020602-002ADUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Paint Filter	0		**Pass**				0	0.00	02/12/2015

Batch R200956 **SampType:** DUP Units **Pass/Fail** RPD Limit **0**

SampID: 15020602-003ADUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Paint Filter	0		**Pass**				0	0.00	02/13/2015

Batch R200956 **SampType:** DUP Units **Pass/Fail** RPD Limit **0**

SampID: 15020708-001ADUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Paint Filter	0		**Fail**				0	0.00	02/13/2015

Batch R200956 **SampType:** DUP Units **Pass/Fail** RPD Limit **0**

SampID: 15020715-001ADUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Paint Filter	0		**Pass**				0	0.00	02/13/2015

SW-846 1311, 3010A, 6010B, METALS IN TCLP EXTRACT BY ICP

Batch 106232 **SampType:** MBLK Units **mg/L**

SampID: MBLK-106232

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Arsenic	0.250		**< 0.250**	0.2500	0	0	-100	100	02/12/2015
Barium	0.500		**< 0.500**	0.5000	0	0	-100	100	02/12/2015
Cadmium	0.0200		**< 0.0200**	0.02000	0	0	-100	100	02/12/2015
Chromium	0.100		**< 0.100**	0.1000	0	0	-100	100	02/12/2015
Lead	0.400		**< 0.400**	0.4000	0	0	-100	100	02/12/2015
Selenium	0.500		**< 0.500**	0.5000	0	0	-100	100	02/12/2015
Silver	0.100		**< 0.100**	0.1000	0	0	-100	100	02/12/2015

Client: Trihydro Corporation **Work Order:** 15020602

Client Project: Hartford Petroleum Release Site, Hartford, IL **Report Date:** 19-Feb-15

SW-846 1311, 3010A, 6010B, METALS IN TCLP EXTRACT BY ICP

Batch 106232 **SampType:** LCS Units **mg/L**

SampID: LCS-106232

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Arsenic	0.250		**20.1**	20.00	0	100.7	85	115	02/12/2015
Barium	0.500		**19.9**	20.00	0	99.7	85	115	02/12/2015
Cadmium	0.0200		**0.497**	0.5000	0	99.4	85	115	02/12/2015
Chromium	0.100		**2.01**	2.000	0	100.6	85	115	02/12/2015
Lead	0.400		**4.83**	5.000	0	96.7	85	115	02/12/2015
Selenium	0.500		**19.8**	20.00	0	99.0	85	115	02/12/2015
Silver	0.100		**0.472**	0.5000	0	94.4	85	115	02/12/2015

Batch 106232 **SampType:** MS Units **mg/L**

SampID: 15020555-001AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Arsenic	0.250		**20.5**	20.00	0	102.4	75	125	02/12/2015
Barium	0.500		**21.0**	20.00	0.4370	102.6	75	125	02/12/2015
Cadmium	0.0200		**0.504**	0.5000	0	100.8	75	125	02/12/2015
Chromium	0.100		**2.06**	2.000	0	103.2	75	125	02/12/2015
Lead	0.400		**4.91**	5.000	0	98.3	75	125	02/12/2015
Selenium	0.500		**20.0**	20.00	0	99.8	75	125	02/12/2015
Silver	0.100		**0.482**	0.5000	0	96.4	75	125	02/12/2015

Batch 106232 **SampType:** MS Units **mg/L**

SampID: 15020555-002AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Lead	0.400		**4.84**	5.000	0	96.7	75	125	02/12/2015

Batch 106232 **SampType:** MS Units **mg/L**

SampID: 15020562-001AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Arsenic	0.250		**20.5**	20.00	0	102.4	75	125	02/12/2015
Barium	0.500		**21.4**	20.00	1.016	101.9	75	125	02/12/2015
Cadmium	0.0200		**0.505**	0.5000	0	101.0	75	125	02/12/2015
Chromium	0.100		**2.05**	2.000	0	102.4	75	125	02/12/2015
Lead	0.400		**4.91**	5.000	0	98.3	75	125	02/12/2015
Selenium	0.500		**20.1**	20.00	0	100.5	75	125	02/12/2015
Silver	0.100		**0.485**	0.5000	0	97.0	75	125	02/12/2015

Client: Trihydro Corporation **Work Order:** 15020602

Client Project: Hartford Petroleum Release Site, Hartford, IL **Report Date:** 19-Feb-15

SW-846 1311, 3010A, 6010B, METALS IN TCLP EXTRACT BY ICP

Batch 106232 **SampType:** MS Units **mg/L**

SampID: 15020563-001AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Arsenic	0.250		**20.2**	20.00	0	100.8	75	125	02/12/2015
Barium	0.500		**20.2**	20.00	0.2770	99.7	75	125	02/12/2015
Cadmium	0.0200		**0.498**	0.5000	0.009000	97.8	75	125	02/12/2015
Chromium	0.100		**2.01**	2.000	0	100.4	75	125	02/12/2015
Lead	0.400		**4.80**	5.000	0	96.0	75	125	02/12/2015
Selenium	0.500		**19.8**	20.00	0	98.8	75	125	02/12/2015
Silver	0.100		**0.475**	0.5000	0	95.0	75	125	02/12/2015

Batch 106232 **SampType:** MS Units **mg/L**

SampID: 15020564-001AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Arsenic	0.250		**20.5**	20.00	0	102.4	75	125	02/12/2015
Barium	0.500		**21.4**	20.00	0.9680	102.1	75	125	02/12/2015
Cadmium	0.0200		**0.526**	0.5000	0.02600	100.0	75	125	02/12/2015
Chromium	0.100		**2.05**	2.000	0	102.5	75	125	02/12/2015
Lead	0.400		**5.03**	5.000	0.1240	98.1	75	125	02/12/2015
Selenium	0.500		**20.0**	20.00	0	100.0	75	125	02/12/2015
Silver	0.100		**0.485**	0.5000	0	97.0	75	125	02/12/2015

Batch 106232 **SampType:** MS Units **mg/L**

SampID: 15020565-001AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Arsenic	0.250		**20.5**	20.00	0	102.3	75	125	02/12/2015
Barium	0.500		**21.2**	20.00	0.6810	102.6	75	125	02/12/2015
Cadmium	0.0200		**0.530**	0.5000	0.02700	100.6	75	125	02/12/2015
Chromium	0.100		**2.06**	2.000	0	102.8	75	125	02/12/2015
Lead	0.400		**5.11**	5.000	0.1840	98.5	75	125	02/12/2015
Selenium	0.500		**20.1**	20.00	0	100.3	75	125	02/12/2015
Silver	0.100		**0.486**	0.5000	0	97.2	75	125	02/12/2015

Batch 106232 **SampType:** MS Units **mg/L**

SampID: 15020565-002AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Arsenic	0.250		**20.3**	20.00	0	101.7	75	125	02/12/2015
Barium	0.500		**20.7**	20.00	0.4940	100.8	75	125	02/12/2015
Cadmium	0.0200		**0.528**	0.5000	0.03100	99.4	75	125	02/12/2015
Chromium	0.100		**2.03**	2.000	0	101.7	75	125	02/12/2015
Lead	0.400		**4.87**	5.000	0	97.4	75	125	02/12/2015
Selenium	0.500		**19.9**	20.00	0	99.5	75	125	02/12/2015
Silver	0.100		**0.478**	0.5000	0	95.6	75	125	02/12/2015

Client: Trihydro Corporation **Work Order:** 15020602

Client Project: Hartford Petroleum Release Site, Hartford, IL **Report Date:** 19-Feb-15

SW-846 1311, 3010A, 6010B, METALS IN TCLP EXTRACT BY ICP

Batch 106232 **SampType:** MS Units **mg/L**

SampID: 15020588-001AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Arsenic	0.250		**20.5**	20.00	0	102.4	75	125	02/12/2015
Barium	0.500		**21.2**	20.00	0.7280	102.6	75	125	02/12/2015
Cadmium	0.0200		**0.505**	0.5000	0	101.0	75	125	02/12/2015
Chromium	0.100		**2.08**	2.000	0	103.9	75	125	02/12/2015
Lead	0.400		**4.93**	5.000	0	98.6	75	125	02/12/2015
Selenium	0.500		**20.1**	20.00	0	100.5	75	125	02/12/2015
Silver	0.100		**0.486**	0.5000	0	97.2	75	125	02/12/2015

Batch 106232 **SampType:** MSD Units **mg/L** RPD Limit **20**

SampID: 15020588-001AMSD

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Arsenic	0.250		**20.6**	20.00	0	103.2	20.47	0.83	02/12/2015
Barium	0.500		**21.2**	20.00	0.7280	102.6	21.25	0.05	02/12/2015
Cadmium	0.0200		**0.505**	0.5000	0	101.0	0.5050	0.00	02/12/2015
Chromium	0.100		**2.07**	2.000	0	103.6	2.078	0.24	02/12/2015
Lead	0.400		**4.94**	5.000	0	98.8	4.929	0.18	02/12/2015
Selenium	0.500		**20.2**	20.00	0	101.2	20.09	0.69	02/12/2015
Silver	0.100		**0.486**	0.5000	0	97.2	0.4860	0.00	02/12/2015

Batch 106232 **SampType:** MS Units **mg/L**

SampID: 15020602-002AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Arsenic	0.250		**20.5**	20.00	0	102.4	75	125	02/12/2015
Barium	0.500		**21.2**	20.00	0.7000	102.4	75	125	02/12/2015
Cadmium	0.0200		**0.502**	0.5000	0	100.4	75	125	02/12/2015
Chromium	0.100		**2.07**	2.000	0	103.6	75	125	02/12/2015
Lead	0.400		**4.93**	5.000	0	98.5	75	125	02/12/2015
Selenium	0.500		**20.0**	20.00	0	99.9	75	125	02/12/2015
Silver	0.100		**0.485**	0.5000	0	97.0	75	125	02/12/2015

SW-846 1311, 7470A IN TCLP EXTRACT

Batch 106237 **SampType:** MBLK Units **mg/L**

SampID: MBLK-106237

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury	0.00020		**< 0.00020**	.000200	0	0	-100	100	02/12/2015

Batch 106237 **SampType:** LCS Units **mg/L**

SampID: LCS-106237

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury	0.00020		**0.00537**	0.00500	0	107.3	85	115	02/12/2015

Client: Trihydro Corporation **Work Order:** 15020602

Client Project: Hartford Petroleum Release Site, Hartford, IL **Report Date:** 19-Feb-15

SW-846 1311, 7470A IN TCLP EXTRACT

Batch 106237 **SampType:** MS Units **mg/L**
SampID: 15020555-001AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury	0.00020		**0.00530**	0.00500	0	105.9	75	125	02/12/2015

Batch 106237 **SampType:** MSD Units **mg/L** RPD Limit **15**
SampID: 15020555-001AMSD

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Mercury	0.00020		**0.00513**	0.00500	0	102.5	0.005297	3.26	02/12/2015

Batch 106237 **SampType:** MS Units **mg/L**
SampID: 15020562-001AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury	0.00020		**0.00533**	0.00500	0	106.6	75	125	02/12/2015

Batch 106237 **SampType:** MS Units **mg/L**
SampID: 15020563-002AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury	0.00020		**0.00470**	0.00500	0.0001020	92.0	75	125	02/12/2015

Batch 106237 **SampType:** MS Units **mg/L**
SampID: 15020564-002AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury	0.00020		**0.00494**	0.00500	0	98.8	75	125	02/12/2015

Batch 106237 **SampType:** MS Units **mg/L**
SampID: 15020565-002AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury	0.00020		**0.00503**	0.00500	0	100.6	75	125	02/12/2015

Batch 106237 **SampType:** MS Units **mg/L**
SampID: 15020565-003AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury	0.00020		**0.00489**	0.00500	0	97.7	75	125	02/12/2015

Batch 106237 **SampType:** MS Units **mg/L**
SampID: 15020586-001AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury	0.00020		**0.00486**	0.00500	0	97.2	75	125	02/12/2015

Batch 106237 **SampType:** MS Units **mg/L**
SampID: 15020588-002AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury	0.00020		**0.00486**	0.00500	0	97.3	75	125	02/12/2015

Client: Trihydro Corporation **Work Order:** 15020602

Client Project: Hartford Petroleum Release Site, Hartford, IL **Report Date:** 19-Feb-15

SW-846 1311, 7470A IN TCLP EXTRACT

Batch 106237 **SampType:** MSD Units **mg/L** RPD Limit **15**

SampID: 15020588-002AMSD

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Mercury	0.00020		**0.00485**	0.00500	0	97.0	0.004865	0.26	02/12/2015

Batch 106237 **SampType:** MS Units **mg/L**

SampID: 15020602-002AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury	0.00020		**0.00469**	0.00500	0	93.8	75	125	02/12/2015

Batch 106237 **SampType:** MS Units **mg/L**

SampID: 15020603-001AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury	0.00020		**0.00477**	0.00500	0	95.5	75	125	02/12/2015

SW-846 1311, 3510C, 8270C, SEMI-VOLATILES IN TCLP EXTRACT BY GC/MS

Batch 106209 **SampType:** MBLK Units **mg/L**

SampID: MBLK-106209

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
2,4,5-Trichlorophenol	0.010		**ND**						02/12/2015
2,4,6-Trichlorophenol	0.010		**ND**						02/12/2015
2,4-Dinitrotoluene	0.010		**ND**						02/12/2015
Hexachlorobenzene	0.010		**ND**						02/12/2015
Hexachlorobutadiene	0.010		**ND**						02/12/2015
Hexachloroethane	0.010		**ND**						02/12/2015
m,p-Cresol	0.010		**ND**						02/12/2015
Nitrobenzene	0.010		**ND**						02/12/2015
o-Cresol	0.010		**ND**						02/12/2015
Pentachlorophenol	0.020		**ND**						02/12/2015
Pyridine	0.020		**ND**						02/12/2015
Surr: 2,4,6-Tribromophenol			**0.042**	0.05000		84.8	36.9	125	02/12/2015
Surr: 2-Fluorobiphenyl			**0.021**	0.02500		82.4	36.7	114	02/12/2015
Surr: 2-Fluorophenol			**0.028**	0.05000		56.8	23.9	78.3	02/12/2015
Surr: Nitrobenzene-d5			**0.018**	0.02500		71.3	36.6	119	02/12/2015
Surr: Phenol-d5			**0.021**	0.05000		41.0	14.1	51.6	02/12/2015
Surr: p-Terphenyl-d14			**0.023**	0.02500		91.3	41.6	133	02/12/2015

Client: Trihydro Corporation **Work Order:** 15020602

Client Project: Hartford Petroleum Release Site, Hartford, IL **Report Date:** 19-Feb-15

SW-846 1311, 3510C, 8270C, SEMI-VOLATILES IN TCLP EXTRACT BY GC/MS

Batch 106209 **SampType:** LCS Units **mg/L**

SampID: LCS-106209

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
2,4,5-Trichlorophenol	0.010		**0.080**	0.1000	0	79.9	59.8	109	02/12/2015
2,4,6-Trichlorophenol	0.010		**0.073**	0.1000	0	72.8	55.3	112	02/12/2015
2,4-Dinitrotoluene	0.010		**0.042**	0.05000	0	83.5	64.5	113	02/12/2015
Hexachlorobenzene	0.010		**0.078**	0.1000	0	78.2	55.2	121	02/12/2015
Hexachlorobutadiene	0.010		**0.078**	0.1000	0	77.8	45.1	103	02/12/2015
Hexachloroethane	0.010		**0.071**	0.1000	0	70.7	47.2	90.2	02/12/2015
m,p-Cresol	0.010		**0.033**	0.05000	0	66.4	43.3	84.8	02/12/2015
Nitrobenzene	0.010		**0.074**	0.1000	0	73.8	52.7	98.4	02/12/2015
o-Cresol	0.010		**0.039**	0.05000	0	77.9	45.3	92.7	02/12/2015
Pentachlorophenol	0.020		**0.073**	0.1000	0	73.2	42.6	104	02/12/2015
Pyridine	0.020		**0.047**	0.1000	0	47.1	20.7	70.6	02/12/2015
Surr: 2,4,6-Tribromophenol			**0.044**	0.05000		88.2	57.5	119	02/12/2015
Surr: 2-Fluorobiphenyl			**0.020**	0.02500		80.5	55.3	87.9	02/12/2015
Surr: 2-Fluorophenol			**0.027**	0.05000		54.6	31.7	65	02/12/2015
Surr: Nitrobenzene-d5			**0.021**	0.02500		84.9	39.1	132	02/12/2015
Surr: Phenol-d5			**0.018**	0.05000		36.9	21	43.5	02/12/2015
Surr: p-Terphenyl-d14			**0.021**	0.02500		86.0	64.7	105	02/12/2015

Batch 106209 **SampType:** LCSD Units **mg/L** RPD Limit **40**

SampID: LCSD-106209

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
2,4,5-Trichlorophenol	0.010		**0.078**	0.1000	0	77.5	0.07987	2.97	02/12/2015
2,4,6-Trichlorophenol	0.010		**0.082**	0.1000	0	81.8	0.07279	11.66	02/12/2015
2,4-Dinitrotoluene	0.010		**0.044**	0.05000	0	87.1	0.04176	4.21	02/12/2015
Hexachlorobenzene	0.010		**0.081**	0.1000	0	80.9	0.07815	3.47	02/12/2015
Hexachlorobutadiene	0.010		**0.079**	0.1000	0	78.6	0.07779	1.07	02/12/2015
Hexachloroethane	0.010		**0.070**	0.1000	0	70.1	0.07065	0.76	02/12/2015
m,p-Cresol	0.010		**0.034**	0.05000	0	68.0	0.03322	2.30	02/12/2015
Nitrobenzene	0.010		**0.076**	0.1000	0	76.2	0.07379	3.19	02/12/2015
o-Cresol	0.010		**0.039**	0.05000	0	78.5	0.03894	0.76	02/12/2015
Pentachlorophenol	0.020		**0.076**	0.1000	0	76.1	0.07319	3.90	02/12/2015
Pyridine	0.020		**0.046**	0.1000	0	45.5	0.04706	3.27	02/12/2015
Surr: 2,4,6-Tribromophenol			**0.043**	0.05000		86.8			02/12/2015
Surr: 2-Fluorobiphenyl			**0.020**	0.02500		79.2			02/12/2015
Surr: 2-Fluorophenol			**0.026**	0.05000		51.0			02/12/2015
Surr: Nitrobenzene-d5			**0.021**	0.02500		85.1			02/12/2015
Surr: Phenol-d5			**0.018**	0.05000		35.6			02/12/2015
Surr: p-Terphenyl-d14			**0.022**	0.02500		86.7			02/12/2015

Client: Trihydro Corporation **Work Order:** 15020602

Client Project: Hartford Petroleum Release Site, Hartford, IL **Report Date:** 19-Feb-15

SW-846 1311, 3510C, 8270C, SEMI-VOLATILES IN TCLP EXTRACT BY GC/MS

Batch 106209 **SampType:** MS Units **mg/L**

SampID: 15020564-003AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
2,4,5-Trichlorophenol	0.100		**0.827**	1.000	0	82.7	38.6	123	02/12/2015
2,4,6-Trichlorophenol	0.100		**0.854**	1.000	0	85.4	35.9	123	02/12/2015
2,4-Dinitrotoluene	0.100		**0.825**	1.000	0	82.5	60	108	02/12/2015
Hexachlorobenzene	0.100		**0.802**	1.000	0	80.2	55.9	106	02/12/2015
Hexachlorobutadiene	0.100		**0.721**	1.000	0	72.1	35.7	100	02/12/2015
Hexachloroethane	0.100		**0.722**	1.000	0	72.2	38.9	89.9	02/12/2015
m,p-Cresol	0.100		**1.38**	2.000	0	69.0	37.6	93.7	02/12/2015
Nitrobenzene	0.100		**0.734**	1.000	0	73.4	51.8	104	02/12/2015
o-Cresol	0.100		**0.730**	1.000	0	73.0	43	101	02/12/2015
Pentachlorophenol	0.200		**0.617**	1.000	0	61.7	26.8	134	02/12/2015
Pyridine	0.200		**0.508**	1.000	0	50.8	3.61	74.3	02/12/2015
Cresols, Total	0.100		**2.11**	3.000	0	70.3	43	101	02/12/2015
Surr: 2,4,6-Tribromophenol			**0.391**	0.5000		78.3	26.4	130	02/12/2015
Surr: 2-Fluorobiphenyl			**0.168**	0.2500		67.0	38.3	115	02/12/2015
Surr: 2-Fluorophenol			**0.291**	0.5000		58.2	16.5	65	02/12/2015
Surr: Nitrobenzene-d5			**0.246**	0.2500		98.3	47.6	107	02/12/2015
Surr: Phenol-d5			**0.209**	0.5000		41.7	9.94	41.7	02/12/2015
Surr: p-Terphenyl-d14			**0.171**	0.2500		68.4	63.4	122	02/12/2015

Batch 106209 **SampType:** MS Units **mg/L**

SampID: 15020588-001AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
2,4,5-Trichlorophenol	0.100		**0.796**	1.000	0	79.6	38.6	123	02/12/2015
2,4,6-Trichlorophenol	0.100		**0.784**	1.000	0	78.4	35.9	123	02/12/2015
2,4-Dinitrotoluene	0.100		**0.763**	1.000	0	76.3	60	108	02/12/2015
Hexachlorobenzene	0.100		**0.801**	1.000	0	80.1	55.9	106	02/12/2015
Hexachlorobutadiene	0.100		**0.628**	1.000	0	62.8	35.7	100	02/12/2015
Hexachloroethane	0.100		**0.589**	1.000	0	58.9	38.9	89.9	02/12/2015
m,p-Cresol	0.100		**0.945**	2.000	0	47.3	37.6	93.7	02/12/2015
Nitrobenzene	0.100		**0.612**	1.000	0	61.2	51.8	104	02/12/2015
o-Cresol	0.100		**0.532**	1.000	0	53.2	43	101	02/12/2015
Pentachlorophenol	0.200		**0.626**	1.000	0	62.6	26.8	134	02/12/2015
Pyridine	0.200		**0.413**	1.000	0	41.3	3.61	74.3	02/12/2015
Cresols, Total	0.100		**1.48**	3.000	0	49.3	43	101	02/12/2015
Surr: 2,4,6-Tribromophenol			**0.371**	0.5000		74.1	26.4	130	02/12/2015
Surr: 2-Fluorobiphenyl			**0.153**	0.2500		61.1	38.3	115	02/12/2015
Surr: 2-Fluorophenol			**0.167**	0.5000		33.4	16.5	65	02/12/2015
Surr: Nitrobenzene-d5			**0.120**	0.2500		48.0	47.6	107	02/12/2015
Surr: Phenol-d5			**0.109**	0.5000		21.7	9.94	41.7	02/12/2015
Surr: p-Terphenyl-d14			**0.217**	0.2500		87.0	63.4	122	02/12/2015

Client: Trihydro Corporation **Work Order:** 15020602

Client Project: Hartford Petroleum Release Site, Hartford, IL **Report Date:** 19-Feb-15

SW-846 1311, 3510C, 8270C, SEMI-VOLATILES IN TCLP EXTRACT BY GC/MS

Batch 106209 **SampType:** MS Units **mg/L**

SampID: 15020602-002AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
2,4,5-Trichlorophenol	0.100		**0.787**	1.000	0	78.7	38.6	123	02/12/2015
2,4,6-Trichlorophenol	0.100		**0.777**	1.000	0	77.7	35.9	123	02/12/2015
2,4-Dinitrotoluene	0.100		**0.783**	1.000	0	78.3	60	108	02/12/2015
Hexachlorobenzene	0.100		**0.842**	1.000	0	84.2	55.9	106	02/12/2015
Hexachlorobutadiene	0.100		**0.673**	1.000	0	67.3	35.7	100	02/12/2015
Hexachloroethane	0.100		**0.689**	1.000	0	68.9	38.9	89.9	02/12/2015
m,p-Cresol	0.100		**0.999**	2.000	0	49.9	37.6	93.7	02/12/2015
Nitrobenzene	0.100		**0.620**	1.000	0	62.0	51.8	104	02/12/2015
o-Cresol	0.100		**0.622**	1.000	0	62.2	43	101	02/12/2015
Pentachlorophenol	0.200		**0.651**	1.000	0	65.1	26.8	134	02/12/2015
Pyridine	0.200		**0.507**	1.000	0	50.7	3.61	74.3	02/12/2015
Cresols, Total	0.100		**1.62**	3.000	0	54.0	43	101	02/12/2015
Surr: 2,4,6-Tribromophenol			**0.377**	0.5000		75.4	26.4	130	02/12/2015
Surr: 2-Fluorobiphenyl			**0.157**	0.2500		62.6	38.3	115	02/12/2015
Surr: 2-Fluorophenol			**0.179**	0.5000		35.9	16.5	65	02/12/2015
Surr: Nitrobenzene-d5		S	**0.117**	0.2500		46.9	47.6	107	02/12/2015
Surr: Phenol-d5			**0.121**	0.5000		24.3	9.94	41.7	02/12/2015
Surr: p-Terphenyl-d14			**0.186**	0.2500		74.4	63.4	122	02/12/2015

SW-846 3550B, 8015B, TOTAL PETROLEUM HYDROCARBONS (OA-2) BY GC/FID

Batch 106257 **SampType:** MBLK Units **mg/Kg**

SampID: MBLK-106257

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Diesel	5.00		**ND**						02/13/2015
Surr: n-Tetracontane			**0.62**	0.6700		92.6	33.4	140	02/13/2015

Batch 106257 **SampType:** LCS Units **mg/Kg**

SampID: LCS-106257

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Diesel	5.00		**16.2**	16.70	0	96.9	35.2	131	02/13/2015
Surr: n-Tetracontane			**0.67**	0.6700		100.2	33.4	140	02/13/2015

Batch 106352 **SampType:** MBLK Units **mg/Kg**

SampID: MBLK-106352

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Diesel	5.00		**ND**						02/17/2015
Surr: n-Tetracontane			**0.68**	0.6700		101.8	33.4	140	02/17/2015

Batch 106352 **SampType:** LCS Units **mg/Kg**

SampID: LCS-106352

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Diesel	5.00		**15.7**	16.70	0	93.8	35.2	131	02/17/2015
Surr: n-Tetracontane			**0.65**	0.6700		97.3	33.4	140	02/17/2015

Client: Trihydro Corporation **Work Order:** 15020602

Client Project: Hartford Petroleum Release Site, Hartford, IL **Report Date:** 19-Feb-15

SW-846 3550B, 8015B, TOTAL PETROLEUM HYDROCARBONS (OA-2) BY GC/FID

Batch 106352 **SampType:** MS Units **mg/Kg-dry**

SampID: 15020602-001AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Diesel	120	S	**701**	40.09	735.3	-84.2	20.3	167	02/17/2015
Surr: n-Tetracontane			**1.54**	1.608		95.8	53.9	153	02/17/2015

Batch 106352 **SampType:** MSD Units **mg/Kg-dry** RPD Limit **34**

SampID: 15020602-001AMSD

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Diesel	120	S	**576**	40.04	735.3	-398.8	701.5	19.72	02/17/2015
Surr: n-Tetracontane			**1.62**	1.606		101.1			02/17/2015

SW-846 3550B, 8082, POLYCHLORINATED BIPHENYLS (PCBS) BY GC/ECD

Batch 106196 **SampType:** MBLK Units **µg/Kg**

SampID: MBLK-106196

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Aroclor 1016	37.5		**ND**						02/11/2015
Aroclor 1221	37.5		**ND**						02/11/2015
Aroclor 1232	37.5		**ND**						02/11/2015
Aroclor 1242	37.5		**ND**						02/11/2015
Aroclor 1248	37.5		**ND**						02/11/2015
Aroclor 1254	37.5		**ND**						02/11/2015
Aroclor 1260	37.5		**ND**						02/11/2015
Surr: Decachlorobiphenyl			**10.7**	8.300		129.3	59	160	02/11/2015
Surr: Tetrachloro-meta-xylene			**6.5**	8.300		78.8	31.6	114	02/11/2015

Batch 106196 **SampType:** LCS Units **µg/Kg**

SampID: LCSPCB-106196

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Aroclor 1016	37.5		**150**	166.7	0	90.0	45.6	127	02/11/2015
Aroclor 1260	37.5		**181**	166.7	0	108.9	68.4	126	02/11/2015
Surr: Decachlorobiphenyl			**10.5**	8.300		127.0	72.9	149	02/11/2015
Surr: Tetrachloro-meta-xylene			**6.8**	8.300		82.3	15.2	141	02/11/2015

Batch 106196 **SampType:** MS Units **µg/Kg-dry**

SampID: 15020528-005AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Aroclor 1016	43.8		**151**	194.7	0	77.4	35.8	143	02/11/2015
Aroclor 1260	43.8		**167**	194.7	0	85.7	22.3	152	02/11/2015
Surr: Decachlorobiphenyl			**11.8**	9.696		121.6	5	156	02/11/2015
Surr: Tetrachloro-meta-xylene			**8.4**	9.696		86.1	7.35	123	02/11/2015

Client: Trihydro Corporation **Work Order:** 15020602

Client Project: Hartford Petroleum Release Site, Hartford, IL **Report Date:** 19-Feb-15

SW-846 3550B, 8082, POLYCHLORINATED BIPHENYLS (PCBS) BY GC/ECD

Batch 106196 **SampType: MSD** Units **µg/Kg-dry** RPD Limit **40**

SampID: 15020528-005AMSD

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Aroclor 1016	43.7		**150**	194.1	0	77.2	150.8	0.61	02/11/2015
Aroclor 1260	43.7		**170**	194.1	0	87.5	166.9	1.76	02/11/2015
Surr: Decachlorobiphenyl			**11.0**	9.664		113.5			02/11/2015
Surr: Tetrachloro-meta-xylene			**7.7**	9.664		79.8			02/11/2015

SW-846 3550B, 8270C SIMS, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 106224 **SampType: MBLK** Units **mg/Kg**

SampID: MBLK-106224

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Acenaphthene	0.003		**ND**						02/12/2015
Acenaphthylene	0.003		**ND**						02/12/2015
Anthracene	0.003		**ND**						02/12/2015
Benzo(a)anthracene	0.003		**ND**						02/12/2015
Benzo(a)pyrene	0.003		**ND**						02/12/2015
Benzo(b)fluoranthene	0.003		**ND**						02/12/2015
Benzo(g,h,i)perylene	0.003		**ND**						02/12/2015
Benzo(k)fluoranthene	0.003		**ND**						02/12/2015
Chrysene	0.003		**ND**						02/12/2015
Dibenzo(a,h)anthracene	0.003		**ND**						02/12/2015
Fluoranthene	0.003		**ND**						02/12/2015
Fluorene	0.003		**ND**						02/12/2015
Indeno(1,2,3-cd)pyrene	0.003		**ND**						02/12/2015
Naphthalene	0.003		**ND**						02/12/2015
Phenanthrene	0.003		**ND**						02/12/2015
Pyrene	0.003		**ND**						02/12/2015
Surr: 2-Fluorobiphenyl			**0.086**	0.1670		51.3	43.1	106	02/12/2015
Surr: Nitrobenzene-d5			**0.090**	0.1670		53.7	14.2	90.1	02/12/2015
Surr: p-Terphenyl-d14			**0.101**	0.1670		60.5	47.7	94.3	02/12/2015

Client: Trihydro Corporation **Work Order:** 15020602

Client Project: Hartford Petroleum Release Site, Hartford, IL **Report Date:** 19-Feb-15

SW-846 3550B, 8270C SIMS, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 106224 **SampType: LCS** Units **mg/Kg**

SampID: LCS-106224

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Acenaphthene	0.003		**0.092**	0.1670	0	55.1	45	96	02/12/2015
Acenaphthylene	0.003		**0.098**	0.1670	0	58.9	45.8	98.3	02/12/2015
Anthracene	0.003		**0.087**	0.1670	0	52.1	44.8	95.5	02/12/2015
Benzo(a)anthracene	0.003		**0.102**	0.1670	0	61.3	52.8	103	02/12/2015
Benzo(a)pyrene	0.003		**0.102**	0.1670	0	61.3	48.1	92.8	02/12/2015
Benzo(b)fluoranthene	0.003		**0.105**	0.1670	0	62.7	47.5	99.8	02/12/2015
Benzo(g,h,i)perylene	0.003		**0.108**	0.1670	0	64.9	40.1	107	02/12/2015
Benzo(k)fluoranthene	0.003		**0.107**	0.1670	0	64.3	44.6	103	02/12/2015
Chrysene	0.003		**0.105**	0.1670	0	62.9	48.2	97.7	02/12/2015
Dibenzo(a,h)anthracene	0.003		**0.105**	0.1670	0	62.9	42.9	104	02/12/2015
Fluoranthene	0.003		**0.092**	0.1670	0	55.1	47.1	103	02/12/2015
Fluorene	0.003		**0.099**	0.1670	0	59.3	43.4	104	02/12/2015
Indeno(1,2,3-cd)pyrene	0.003		**0.108**	0.1670	0	64.9	42.4	104	02/12/2015
Naphthalene	0.003		**0.089**	0.1670	0	53.1	45.7	90.7	02/12/2015
Phenanthrene	0.003		**0.090**	0.1670	0	54.1	47	101	02/12/2015
Pyrene	0.003		**0.092**	0.1670	0	55.1	45.8	108	02/12/2015
Surr: 2-Fluorobiphenyl			**0.085**	0.1670		50.9	43.1	106	02/12/2015
Surr: Nitrobenzene-d5			**0.105**	0.1670		63.1	14.2	90.1	02/12/2015
Surr: p-Terphenyl-d14			**0.098**	0.1670		58.5	47.7	94.3	02/12/2015

Batch 106224 **SampType: MS** Units **mg/Kg-dry**

SampID: 15020579-001AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Acenaphthene	0.004		**0.091**	0.2055	0	44.3	35.1	107	02/12/2015
Acenaphthylene	0.004		**0.095**	0.2055	0	46.1	42.7	100	02/12/2015
Anthracene	0.004		**0.095**	0.2055	0	46.3	43.7	97.7	02/12/2015
Benzo(a)anthracene	0.004		**0.113**	0.2055	0	55.1	44.5	115	02/12/2015
Benzo(a)pyrene	0.004		**0.108**	0.2055	0	52.5	34	113	02/12/2015
Benzo(b)fluoranthene	0.004		**0.114**	0.2055	0	55.7	43.3	109	02/12/2015
Benzo(g,h,i)perylene	0.004		**0.108**	0.2055	0	52.7	26.4	120	02/12/2015
Benzo(k)fluoranthene	0.004		**0.119**	0.2055	0	57.9	43.4	111	02/12/2015
Chrysene	0.004		**0.116**	0.2055	0	56.3	38.4	116	02/12/2015
Dibenzo(a,h)anthracene	0.004		**0.110**	0.2055	0	53.7	32.6	117	02/12/2015
Fluoranthene	0.004		**0.102**	0.2055	0	49.5	36.6	110	02/12/2015
Fluorene	0.004		**0.100**	0.2055	0	48.9	37.2	112	02/12/2015
Indeno(1,2,3-cd)pyrene	0.004		**0.112**	0.2055	0	54.7	32.5	116	02/12/2015
Naphthalene	0.004		**0.075**	0.2055	0	36.7	27.8	99.5	02/12/2015
Phenanthrene	0.004		**0.098**	0.2055	0	47.7	34.5	111	02/12/2015
Pyrene	0.004		**0.102**	0.2055	0	49.7	34.9	113	02/12/2015
Surr: 2-Fluorobiphenyl			**0.092**	0.2055		44.7	10	170	02/12/2015
Surr: Nitrobenzene-d5			**0.107**	0.2055		51.9	10	163	02/12/2015
Surr: p-Terphenyl-d14			**0.112**	0.2055		54.3	10	154	02/12/2015

Client: Trihydro Corporation **Work Order:** 15020602

Client Project: Hartford Petroleum Release Site, Hartford, IL **Report Date:** 19-Feb-15

SW-846 3550B, 8270C SIMS, SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 106224 **SampType: MSD** Units **mg/Kg-dry** RPD Limit **49.7**

SampID: 15020579-001AMSD

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Acenaphthene	0.004		**0.099**	0.2055	0	48.3	0.09107	8.62	02/12/2015
Acenaphthylene	0.004		**0.105**	0.2055	0	51.3	0.09476	10.66	02/12/2015
Anthracene	0.004		**0.098**	0.2055	0	47.5	0.09517	2.55	02/12/2015
Benzo(a)anthracene	0.004		**0.116**	0.2055	0	56.3	0.1132	2.15	02/12/2015
Benzo(a)pyrene	0.004		**0.116**	0.2055	0	56.7	0.1079	7.68	02/12/2015
Benzo(b)fluoranthene	0.004		**0.118**	0.2055	0	57.3	0.1144	2.83	02/12/2015
Benzo(g,h,i)perylene	0.004		**0.117**	0.2055	0	57.1	0.1083	8.00	02/12/2015
Benzo(k)fluoranthene	0.004		**0.119**	0.2055	0	58.1	0.1190	0.34	02/12/2015
Chrysene	0.004		**0.119**	0.2055	0	57.9	0.1157	2.80	02/12/2015
Dibenzo(a,h)anthracene	0.004		**0.119**	0.2055	0	57.7	0.1103	7.17	02/12/2015
Fluoranthene	0.004		**0.105**	0.2055	0	50.9	0.1017	2.78	02/12/2015
Fluorene	0.004		**0.106**	0.2055	0	51.5	0.1005	5.17	02/12/2015
Indeno(1,2,3-cd)pyrene	0.004		**0.121**	0.2055	0	58.7	0.1124	7.04	02/12/2015
Naphthalene	0.004		**0.087**	0.2055	0	42.1	0.07548	13.67	02/12/2015
Phenanthrene	0.004		**0.101**	0.2055	0	49.1	0.09804	2.89	02/12/2015
Pyrene	0.004		**0.105**	0.2055	0	50.9	0.1021	2.38	02/12/2015
Surr: 2-Fluorobiphenyl			**0.095**	0.2055		46.3			02/12/2015
Surr: Nitrobenzene-d5			**0.113**	0.2055		55.1			02/12/2015
Surr: p-Terphenyl-d14			**0.110**	0.2055		53.7			02/12/2015

SW-846 9023

Batch 106389 **SampType: MBLK** Units **mg/Kg**

SampID: 150219MBLK

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Extractable Organic Halogens (EOX)	50.0	J	**27**						02/19/2015

Batch 106389 **SampType: LCS** Units **mg/Kg**

SampID: 1502192LCS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Extractable Organic Halogens (EOX)	250		**272**	250.0	0	108.8	70	130	02/19/2015

Batch 106389 **SampType: LCS** Units **mg/Kg**

SampID: 150219LCS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Extractable Organic Halogens (EOX)	50.0		**278**	250.0	0	111.0	70	130	02/19/2015

Batch 106389 **SampType: MS** Units **mg/Kg**

SampID: 15020602-002AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Extractable Organic Halogens (EOX)	49.0	S	**140**	245.1	74.56	26.7	70	130	02/19/2015

Client: Trihydro Corporation **Work Order:** 15020602

Client Project: Hartford Petroleum Release Site, Hartford, IL **Report Date:** 19-Feb-15

SW-846 9023

Batch 106389 **SampType:** MSD Units **mg/Kg** RPD Limit **30**

SampID: 15020602-002AMSD

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Extractable Organic Halogens (EOX)	50.0	SR	**235**	250.0	74.56	64.1	140.0	50.63	02/19/2015

Batch 106389 **SampType:** DUP Units **mg/Kg** RPD Limit **15**

SampID: 15020602-003ADUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Extractable Organic Halogens (EOX)	48.1		**< 48.1**				0	0.00	02/19/2015

Batch 106389 **SampType:** DUP Units **mg/Kg** RPD Limit **15**

SampID: 15020650-001BDUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Extractable Organic Halogens (EOX)	500		**4610**				4849	5.03	02/19/2015

Batch 106389 **SampType:** DUP Units **mg/Kg** RPD Limit **15**

SampID: 15020708-001CDUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Extractable Organic Halogens (EOX)	50.0		**< 50.0**				30.79	0.00	02/19/2015

SW-846 1311, 5030, 8260B, VOLATILE ORGANIC COMPOUNDS IN TCLP EXTRACT BY GC/MS

Batch 106373 **SampType:** MBLK Units **µg/L**

SampID: MBLK-T150217-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
1,1-Dichloroethene	5.0		**ND**						02/17/2015
1,2-Dichloroethane	5.0		**ND**						02/17/2015
1,4-Dichlorobenzene	5.0		**ND**						02/17/2015
2-Butanone	25.0		**ND**						02/17/2015
Carbon tetrachloride	5.0		**ND**						02/17/2015
Chlorobenzene	5.0		**ND**						02/17/2015
Chloroform	5.0		**ND**						02/17/2015
Tetrachloroethene	5.0		**ND**						02/17/2015
Trichloroethene	5.0		**ND**						02/17/2015
Vinyl chloride	2.0		**ND**						02/17/2015
Surr: Dibromofluoromethane			**49.1**	50.00		98.2	81.7	123	02/17/2015

Client: Trihydro Corporation **Work Order:** 15020602

Client Project: Hartford Petroleum Release Site, Hartford, IL **Report Date:** 19-Feb-15

SW-846 1311, 5030, 8260B, VOLATILE ORGANIC COMPOUNDS IN TCLP EXTRACT BY GC/MS

Batch 106373 **SampType:** LCSD Units **µg/L** RPD Limit **40**

SampID: LCSD-T150217-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
1,1-Dichloroethene	5.0		**49.5**	50.00	0	99.1	50.62	2.18	02/17/2015
1,2-Dichloroethane	5.0		**49.4**	50.00	0	98.9	48.60	1.71	02/17/2015
1,4-Dichlorobenzene	5.0		**45.8**	50.00	0	91.6	44.86	2.07	02/17/2015
2-Butanone	25.0		**163**	125.0	0	130.7	163.7	0.18	02/17/2015
Carbon tetrachloride	5.0		**49.5**	50.00	0	99.0	50.52	2.02	02/17/2015
Chlorobenzene	5.0		**44.7**	50.00	0	89.5	44.57	0.36	02/17/2015
Chloroform	5.0		**48.0**	50.00	0	96.0	48.16	0.31	02/17/2015
Tetrachloroethene	5.0		**47.3**	50.00	0	94.7	47.82	1.03	02/17/2015
Trichloroethene	5.0		**47.5**	50.00	0	95.0	48.53	2.10	02/17/2015
Vinyl chloride	2.0		**48.4**	50.00	0	96.7	49.05	1.40	02/17/2015
Surr: Dibromofluoromethane			**50.6**	50.00		101.2			02/17/2015

Batch 106373 **SampType:** LCS Units **µg/L**

SampID: LCS-T150217-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
1,1-Dichloroethene	5.0		**50.6**	50.00	0	101.2	74.1	117	02/17/2015
1,2-Dichloroethane	5.0		**48.6**	50.00	0	97.2	70.6	118	02/17/2015
1,4-Dichlorobenzene	5.0		**44.9**	50.00	0	89.7	77.8	114	02/17/2015
2-Butanone	25.0		**164**	125.0	0	131.0	70.7	136	02/17/2015
Carbon tetrachloride	5.0		**50.5**	50.00	0	101.0	79.4	130	02/17/2015
Chlorobenzene	5.0		**44.6**	50.00	0	89.1	81.4	110	02/17/2015
Chloroform	5.0		**48.2**	50.00	0	96.3	82.7	116	02/17/2015
Tetrachloroethene	5.0		**47.8**	50.00	0	95.6	72.5	125	02/17/2015
Trichloroethene	5.0		**48.5**	50.00	0	97.1	84.4	114	02/17/2015
Vinyl chloride	2.0		**49.0**	50.00	0	98.1	58	134	02/17/2015
Surr: Dibromofluoromethane			**50.2**	50.00		100.4	81.7	123	02/17/2015

Batch 106373 **SampType:** MS Units **mg/L**

SampID: 15020602-003AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
1,1-Dichloroethene	0.500		**5.41**	5.000	0	108.2	61.3	123	02/17/2015
1,2-Dichloroethane	0.500		**4.94**	5.000	0	98.7	71.5	116	02/17/2015
1,4-Dichlorobenzene	0.500		**4.51**	5.000	0	90.3	76.9	113	02/17/2015
2-Butanone	2.50		**6.07**	5.000	0	121.4	64.1	132	02/17/2015
Benzene	0.200		**4.96**	5.000	0	99.3	81.5	113	02/17/2015
Carbon tetrachloride	0.500		**5.10**	5.000	0	101.9	55.5	125	02/17/2015
Chlorobenzene	0.500		**4.51**	5.000	0	90.2	81.8	111	02/17/2015
Chloroform	0.500		**4.95**	5.000	0	99.1	81	115	02/17/2015
Tetrachloroethene	0.500		**4.82**	5.000	0	96.5	61.7	114	02/17/2015
Trichloroethene	0.500		**5.15**	5.000	0	103.1	74.4	117	02/17/2015
Vinyl chloride	0.200		**5.04**	5.000	0	100.7	45.7	130	02/17/2015
Surr: 1,2-Dichloroethane-d4			**5.06**	5.000		101.2	74.7	129	02/17/2015
Surr: 4-Bromofluorobenzene			**4.93**	5.000		98.7	86	119	02/17/2015
Surr: Dibromofluoromethane			**5.02**	5.000		100.4	81.7	123	02/17/2015
Surr: Toluene-d8			**4.80**	5.000		95.9	84.3	114	02/17/2015

Client: Trihydro Corporation **Work Order:** 15020602

Client Project: Hartford Petroleum Release Site, Hartford, IL **Report Date:** 19-Feb-15

SW-846 1311, 5030, 8260B, VOLATILE ORGANIC COMPOUNDS IN TCLP EXTRACT BY GC/MS

Batch 106373 **SampType:** MS Units µg/L

SampID: 15020767-007AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
1,1-Dichloroethene	500		**5340**	5000	142.0	104.1	35.7	136	02/18/2015
Chlorobenzene	500		**4680**	5000	0	93.7	78.6	114	02/18/2015
Trichloroethene	500		**11200**	5000	5666	110.4	69.4	117	02/18/2015
Surr: Dibromofluoromethane			**5030**	5000		100.6	81.7	123	02/18/2015

SW-846 5030, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 106373 **SampType:** MBLK Units µg/L

SampID: MBLK-T150217-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Benzene	2.0		**ND**						02/17/2015
Surr: 1,2-Dichloroethane-d4			**50.1**	50.00		100.1	74.7	129	02/17/2015
Surr: 4-Bromofluorobenzene			**47.4**	50.00		94.7	86	119	02/17/2015
Surr: Toluene-d8			**48.8**	50.00		97.7	84.3	114	02/17/2015

Batch 106373 **SampType:** LCSD Units µg/L RPD Limit **40**

SampID: LCSD-T150217-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Benzene	2.0		**49.2**	50.00	0	98.4	49.49	0.59	02/17/2015
Surr: 1,2-Dichloroethane-d4			**50.2**	50.00		100.5			02/17/2015
Surr: 4-Bromofluorobenzene			**51.1**	50.00		102.3			02/17/2015
Surr: Toluene-d8			**48.3**	50.00		96.6			02/17/2015

Batch 106373 **SampType:** LCS Units µg/L

SampID: LCS-T150217-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Benzene	2.0		**49.5**	50.00	0	99.0	80	114	02/17/2015
Surr: 1,2-Dichloroethane-d4			**49.6**	50.00		99.2	74.7	129	02/17/2015
Surr: 4-Bromofluorobenzene			**50.1**	50.00		100.1	86	119	02/17/2015
Surr: Toluene-d8			**47.4**	50.00		94.8	84.1	114	02/17/2015

Batch 106373 **SampType:** MS Units µg/L

SampID: 15020767-007AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Benzene	200		**5040**	5000	0	100.7	62.5	121	02/18/2015
Surr: 1,2-Dichloroethane-d4			**4990**	5000		99.7	74.7	129	02/18/2015
Surr: 4-Bromofluorobenzene			**4890**	5000		97.8	86	119	02/18/2015
Surr: Toluene-d8			**4730**	5000		94.7	84.3	114	02/18/2015

Receiving Check List

http://www.teklabinc.com/

Client: Trihydro Corporation
Work Order: 15020602
Client Project: Hartford Petroleum Release Site, Hartford, IL
Report Date: 19-Feb-15

Carrier: Employee
Received By: SRH

Completed by: Emily E. Pohlman
On: 11-Feb-15

Reviewed by: Elizabeth A. Hurley
On: 11-Feb-15

Pages to follow: Chain of custody 1 Extra pages included 0

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	Temp °C 8.22
Type of thermal preservation?	None ☐	Ice ☑	Blue Ice ☐	Dry Ice ☐
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Reported field parameters measured:	Field ☐	Lab ☐	NA ☑	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐		

When thermal preservation is required, samples are compliant with a temperature between 0.1°C - 6.0°C, or when samples are received on ice the same day as collected.

Water – at least one vial per sample has zero headspace?	Yes ☐	No ☐	No VOA vials ☑
Water - TOX containers have zero headspace?	Yes ☐	No ☐	No TOX containers ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	NA ☑
NPDES/CWA TCN interferences checked/treated in the field?	Yes ☐	No ☐	NA ☑

Any No responses must be detailed below or on the COC.

Print Form

Teklab Chain of Custody

Pg. 1 of 1 Workorder 15020602

5445 Horseshoe Lake Road ~ Collinsville, IL 62234 ~ Phone: (618)344-1004 ~ Fax:(618)344-1005

Trihydro Corporation
2702 East Kemper Road
CIncinnati | OH | 45241
Hartford Petroleum Release Site, Hartford, Illinois

Are the samples chilled? (•) Yes ( ) No with: (•) Ice ( ) Blue ice Preserved in (•) Lab ( ) Field

Cooler Temp 8.22 Sampler C. Byrd

Comments: Analyses per conversation with M. Darling on 2/11/15

Contact Todd Aseltyne eMail taseltyne@trihydro.com Phone 513-429-7454 Requested Due Date 2/19/15 Billing/PO 24S-007-001

Lab Use	Sample ID	Sample Date/Time	Preservative	Matrix	Haz Waste Characterization	BTEX (USEPA 8260)	PAHs (USEPA 8270)	TPH-Gasoline (USEPA 8015)	TPH-Diesel (USEPA 8015)							
15020602 -001	HSVE-105S (3-4), 021115	2/11/15 2:00PM	Unpres	Soil	X	X	X	X	X							
-002	ExcavatedSoils,021115	2/11/15 2:30PM	Unpres	Soil	X											
-003	RB20767, 021115	2/11/15 2:10 P.M.	Unpres	Soil	X											
			Unpres													
			Unpres													
			Unpres													
			Unpres													
			Unpres													

Relinquished By *	Date/Time	Received By	Date/Time
Rod Spencer	2/11/15	Stephanie Hayes	2/11/15 3:23

* The individual signing this agreement on behalf of client acknowledges that they have read and understand the terms of this agreement and that they have the authority to sign on behalf of client.

April 15, 2015

Justin Pruis, P.E.
Trihydro Corporation
1252 Commerce Drive
Laramie, WY 82070
TEL: (307) 755-4861
FAX:

RE: Hartford Petroleum Release Site, Hartford, IL **WorkOrder:** 15040712

Dear Justin Pruis, P.E.:

TEKLAB, INC received 1 sample on 2/11/2015 3:23:00 PM for the analysis presented in the following report.

Samples are analyzed on an as received basis unless otherwise requested and documented. The sample results contained in this report relate only to the requested analytes of interest as directed on the chain of custody. NELAP accredited fields of testing are indicated by the letters NELAP under the Certification column. Unless otherwise documented within this report, Teklab Inc. analyzes samples utilizing the most current methods in compliance with 40CFR. All tests are performed in the Collinsville, IL laboratory unless otherwise noted in the Case Narrative.

All quality control criteria applicable to the test methods employed for this project have been satisfactorily met and are in accordance with NELAP except where noted. The following report shall not be reproduced, except in full, without the written approval of Teklab, Inc.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

Marvin L. Darling II

Marvin L. Darling
Project Manager
(618)344-1004 ex 41
mdarling@teklabinc.com

Report Contents

Client: Trihydro Corporation
Work Order: 15040712
Client Project: Hartford Petroleum Release Site, Hartford, IL
Report Date: 15-Apr-15

This reporting package includes the following:

Client: Trihydro Corporation **Work Order:** 15040712

Client Project: Hartford Petroleum Release Site, Hartford, IL **Report Date:** 15-Apr-15

Abbr Definition

CCV	Continuing calibration verification is a check of a standard to determine the state of calibration of an instrument between recalibration.
DF	Dilution factor is the dilution performed during analysis only and does not take into account any dilutions made during sample preparation. The reported result is final and includes all dilutions factors.
DNI	Did not ignite
DUP	Laboratory duplicate is an aliquot of a sample taken from the same container under laboratory conditions for independent processing and analysis independently of the original aliquot.
ICV	Initial calibration verification is a check of a standard to determine the state of calibration of an instrument before sample analysis is initiated.
IDPH	IL Dept. of Public Health
LCS	Laboratory control sample, spiked with verified known amounts of analytes, is analyzed exactly like a sample to establish intra-laboratory or analyst specific precision and bias or to assess the performance of all or a portion of the measurement system. The acceptable recovery range is in the QC Package (provided upon request).
LCSD	Laboratory control sample duplicate is a replicate laboratory control sample that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
MB	Method blank is a sample of a matrix similar to the batch of associated sample (when available) that is free from the analytes of interest and is processed simultaneously with and under the same conditions as samples through all steps of the analytical procedures, and in which no target analytes or interferences should present at concentrations that impact the analytical results for sample analyses.
MDL	Method detection limit means the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero.
MS	Matrix spike is an aliquot of matrix fortified (spiked) with known quantities of specific analytes that is subjected to the entire analytical procedures in order to determine the effect of the matrix on an approved test method's recovery system. The acceptable recovery range is listed in the QC Package (provided upon request).
MSD	Matrix spike duplicate means a replicate matrix spike that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
MW	Molecular weight
ND	Not Detected at the Reporting Limit
NELAP	NELAP Accredited
PQL	Practical quantitation limit means the lowest level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operation conditions. The acceptable recovery range is listed in the QC Package (provided upon request).
RL	The reporting limit the lowest level that the data is displayed in the final report. The reporting limit may vary according to customer request or sample dilution. The reporting limit may not be less than the MDL.
RPD	Relative percent difference is a calculated difference between two recoveries (ie. MS/MSD). The acceptable recovery limit is listed in the QC Package (provided upon request).
SPK	The spike is a known mass of target analyte added to a blank sample or sub-sample; used to determine recovery deficiency or for other quality control purposes.
Surr	Surrogates are compounds which are similar to the analytes of interest in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples.
TNTC	Too numerous to count (> 200 CFU)

Qualifiers

# -	Unknown hydrocarbon	B -	Analyte detected in associated Method Blank
E -	Value above quantitation range	H -	Holding times exceeded
J -	Analyte detected below quantitation limits	M -	Manual Integration used to determine area response
ND -	Not Detected at the Reporting Limit	R -	RPD outside accepted recovery limits
S -	Spike Recovery outside recovery limits	X -	Value exceeds Maximum Contaminant Level

Case Narrative

http://www.teklabinc.com/

Client: Trihydro Corporation
Work Order: 15040712
Client Project: Hartford Petroleum Release Site, Hartford, IL
Report Date: 15-Apr-15

Cooler Receipt Temp: °C

Additional analysis to WO# 15020602. MLDII 4/14/15

Locations and Accreditations

	Collinsville	Springfield	Kansas City	Collinsville Air
Address	5445 Horseshoe Lake Road Collinsville, IL 62234-7425	3920 Pintail Dr Springfield, IL 62711-9415	8421 Nieman Road Lenexa, KS 66214	5445 Horseshoe Lake Road Collinsville, IL 62234-7425
Phone	(618) 344-1004	(217) 698-1004	(913) 541-1998	(618) 344-1004
Fax	(618) 344-1005	(217) 698-1005	(913) 541-1998	(618) 344-1005
Email	jhriley@teklabinc.com	KKlostermann@teklabinc.com	dthompson@teklabinc.com	EHurley@teklabinc.com

State	Dept	Cert #	NELAP	Exp Date	Lab
Illinois	IEPA	100226	NELAP	1/31/2016	Collinsville
Kansas	KDHE	E-10374	NELAP	4/30/2015	Collinsville
Louisiana	LDEQ	166493	NELAP	6/30/2015	Collinsville
Louisiana	LDEQ	166578	NELAP	6/30/2015	Collinsville
Texas	TCEQ	T104704515-12-1	NELAP	7/31/2015	Collinsville
Arkansas	ADEQ	88-0966		3/14/2016	Collinsville
Illinois	IDPH	17584		5/31/2015	Collinsville
Kentucky	KDEP	98006		12/31/2015	Collinsville
Kentucky	UST	0073		1/31/2016	Collinsville
Missouri	MDNR	00930		5/31/2015	Collinsville
Oklahoma	ODEQ	9978		8/31/2015	Collinsville

Client: Trihydro Corporation **Work Order:** 15040712

Client Project: Hartford Petroleum Release Site, Hartford, IL **Report Date:** 15-Apr-15

Lab ID: 15040712-001 **Client Sample ID:** HSVE-1055 (3-4), 021115

Matrix: SOLID **Collection Date:** 02/11/2015 14:00

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture		0.1		**17.7**	%	1	04/14/2015 18:15	R203207
SW-846 3550B, 8270C SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS								
TPH-DRO (C10 - C21)		289	H	**1720**	mg/Kg-dry	10	04/15/2015 11:55	107915
TPH-ORO (C21 - C35)		289	H	**527**	mg/Kg-dry	10	04/15/2015 11:55	107915
Surr: 2-Fluorobiphenyl		12-133	H	**83.0**	%REC	10	04/15/2015 11:55	107915
Surr: Nitrobenzene-d5		30.9-115	H	**75.8**	%REC	10	04/15/2015 11:55	107915
Surr: p-Terphenyl-d14		31.5-137	H	**95.2**	%REC	10	04/15/2015 11:55	107915
SW-846 5030, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS								
TPH - GRO (C6 - C10)		564000		**6410000**	µg/Kg-dry	500	02/12/2015 15:52	106249
Surr: 1,2-Dichloroethane-d4		72.2-131		**98.0**	%REC	500	02/12/2015 15:52	106249
Surr: 4-Bromofluorobenzene		82.1-116		**99.2**	%REC	500	02/12/2015 15:52	106249
Surr: Toluene-d8		86-116		**99.9**	%REC	500	02/12/2015 15:52	106249

Client: Trihydro Corporation **Work Order:** 15040712

Client Project: Hartford Petroleum Release Site, Hartford, IL **Report Date:** 15-Apr-15

EPA SW846 3550C, 5035A, ASTM D2974

Batch R203207 **SampType:** LCS Units **%**

SampID: LCS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Percent Moisture	0.1		**99.0**	99.00	0	100.0	90	110	04/14/2015

Batch R203207 **SampType:** LCSQC Units **%**

SampID: LCSQC

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Percent Moisture	0.1		**99.0**	99.00	0	100.0	90	110	04/14/2015

Batch R203207 **SampType:** DUP Units **%** RPD Limit **15**

SampID: 15040579-006A DUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Percent Moisture	0.1		**36.7**				34.94	4.91	04/14/2015

Batch R203207 **SampType:** DUP Units **%** RPD Limit **15**

SampID: 15040611-009A DUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Percent Moisture	0.1		**28.8**				29.04	1.00	04/14/2015

Batch R203207 **SampType:** DUP Units **%** RPD Limit **15**

SampID: 15040689-001A DUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Percent Moisture	0.1		**84.8**				84.81	0.00	04/14/2015

Batch R203207 **SampType:** DUP Units **%** RPD Limit **15**

SampID: 15040689-005A DUP

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Percent Moisture	0.1		**84.9**				84.37	0.61	04/14/2015

SW-846 3550B, 8270C SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 107915 **SampType:** MBLK Units **mg/Kg**

SampID: MBLK-107915

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
TPH-DRO (C10 - C21)	12.0	J	**7.1**						04/15/2015
TPH-ORO (C21 - C35)	12.0		**ND**						04/15/2015
Surr: 2-Fluorobiphenyl			**0.604**	0.8350		72.3	42.6	97.2	04/15/2015
Surr: Nitrobenzene-d5			**0.583**	0.8350		69.8	16.7	118	04/15/2015
Surr: p-Terphenyl-d14			**0.719**	0.8350		86.1	50.1	111	04/15/2015

Client: Trihydro Corporation **Work Order:** 15040712

Client Project: Hartford Petroleum Release Site, Hartford, IL **Report Date:** 15-Apr-15

SW-846 3550B, 8270C SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 107915 **SampType:** LCS Units **%REC**

SampID: LCS-107915

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Surr: 2-Fluorobiphenyl			**0.609**	0.8350		72.9	42.6	97.2	04/15/2015
Surr: Nitrobenzene-d5			**0.775**	0.8350		92.8	16.7	118	04/15/2015
Surr: p-Terphenyl-d14			**0.760**	0.8350		91.0	50.1	111	04/15/2015

Batch 107915 **SampType:** LCSG Units **mg/Kg**

SampID: LCSDRO-107915

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
TPH-DRO (C10 - C21)	12.0		**32.0**	33.40	0	95.7	53.7	103	04/15/2015
Surr: 2-Fluorobiphenyl			**0.598**	0.8350		71.6	42.6	97.2	04/15/2015
Surr: Nitrobenzene-d5			**0.618**	0.8350		74.0	16.7	118	04/15/2015
Surr: p-Terphenyl-d14			**0.766**	0.8350		91.7	50.1	111	04/15/2015

Batch 107915 **SampType:** MS Units **mg/Kg-dry**

SampID: 15040712-001AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
TPH-DRO (C10 - C21)	290	H	**1760**	80.77	1718	54.5	34.5	160	04/15/2015
Surr: 2-Fluorobiphenyl		H	**1.56**	2.019		77.1	12	133	04/15/2015
Surr: Nitrobenzene-d5		H	**1.40**	2.019		69.5	30.9	115	04/15/2015
Surr: p-Terphenyl-d14		H	**1.76**	2.019		87.1	31.5	137	04/15/2015

Batch 107915 **SampType:** MSD Units **mg/Kg-dry** RPD Limit **30**

SampID: 15040712-001AMSD

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
TPH-DRO (C10 - C21)	287	H	**1750**	79.97	1718	34.7	1762	0.93	04/15/2015
Surr: 2-Fluorobiphenyl		H	**1.59**	1.999		79.8			04/15/2015
Surr: Nitrobenzene-d5		H	**1.47**	1.999		73.7			04/15/2015
Surr: p-Terphenyl-d14		H	**1.89**	1.999		94.8			04/15/2015

SW-846 5030, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 106249 **SampType:** MBLK Units **µg/Kg**

SampID: MBLK-A150212A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
TPH - GRO (C6 - C10)	500		**ND**						02/12/2015
Surr: 1,2-Dichloroethane-d4			**49.4**	50.00		98.8	72.2	131	02/12/2015
Surr: 4-Bromofluorobenzene			**48.7**	50.00		97.3	82.1	116	02/12/2015
Surr: Toluene-d8			**49.7**	50.00		99.4	86	116	02/12/2015

Batch 106249 **SampType:** LCS Units **%REC**

SampID: LCS-A150212A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Surr: 1,2-Dichloroethane-d4			**48.3**	50.00		96.7	72.2	131	02/12/2015
Surr: 4-Bromofluorobenzene			**47.3**	50.00		94.5	82.1	116	02/12/2015
Surr: Toluene-d8			**49.2**	50.00		98.5	86	116	02/12/2015

Client: Trihydro Corporation **Work Order:** 15040712

Client Project: Hartford Petroleum Release Site, Hartford, IL **Report Date:** 15-Apr-15

SW-846 5030, 8260B, VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 106249 **SampType:** LCSD Units **%REC** RPD Limit **0**

SampID: LCSD-A150212A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Surr: 1,2-Dichloroethane-d4			**48.8**	50.00		97.7			02/12/2015
Surr: 4-Bromofluorobenzene			**47.7**	50.00		95.4			02/12/2015
Surr: Toluene-d8			**48.6**	50.00		97.1			02/12/2015

Batch 106249 **SampType:** LCSG Units **µg/Kg**

SampID: LCSG-A150212A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
TPH - GRO (C6 - C10)	500		**2040**	2000	0	102.1	70	130	02/12/2015
Surr: 1,2-Dichloroethane-d4			**49.7**	50.00		99.4	72.2	131	02/12/2015
Surr: 4-Bromofluorobenzene			**48.1**	50.00		96.1	82.1	116	02/12/2015
Surr: Toluene-d8			**50.3**	50.00		100.6	86	116	02/12/2015

Batch 106249 **SampType:** LCSGD Units **µg/Kg** RPD Limit **20**

SampID: LCSGD-A150212A-1

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
TPH - GRO (C6 - C10)	500		**2120**	2000	0	106.2	2042	3.96	02/12/2015
Surr: 1,2-Dichloroethane-d4			**49.1**	50.00		98.2			02/12/2015
Surr: 4-Bromofluorobenzene			**48.9**	50.00		97.8			02/12/2015
Surr: Toluene-d8			**50.3**	50.00		100.6			02/12/2015

15040712

TEKLAB, INC
5445 Horseshoe Lake Road
Collinsville, IL 62234-7425
TEL: (618) 344-1004
FAX: (618) 344-1005

CHAIN-OF-CUSTODY RECORD

WorkOrder: 15040712

ONE DAY TAT

Client:
Trihydro Corporation
1252 Commerce Drive
Laramie, WY 82070

TEL: (307) 755-4861
FAX:
Project: Hartford Petroleum Release

14-Apr-15

					Requested Tests		
Sample ID	ClientSampID	Matrix	Date Collected	Bottle	SW3550C_5035A_ASTM29	SW8260B	SW8270C
15040712-001	HSVE-1055 (3-4), 021115	Solid	2/11/2015 2:00:00 PM		A	B	A

Comments: Additional analysis on WO#15020602 per Justin Pruis. MLD II 4/14/15

	Date/Time		Date/Time
Relinquished by:		**Received by:**	4/14/15
Relinquished by:		**Received by:**	
Relinquished by:		**Received by:**	

NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense.

Bottle Type: L-Liter V-Voa S-Soil Jar O-Orbo T-Tedlar B-Brass P-Plastic OT-Other

ATTACHMENT G

REPUBLIC SERVICES, INC.

NON-HAZARDOUS SPECIAL WASTE & ASBESTOS MANIFEST

If waste is asbestos waste, complete Sections I, II, III and IV
If waste is **NOT** asbestos waste, complete Sections I, II and III

I. GENERATOR (Generator completes Ia-r)

a. Generator's US EPA ID Number	b. Manifest Document Number	c. Page 1 of 1

d. Generator's Name and Location:	e. Generator's Mailing Address:
Widman Construction Inc West Birch St, Arbor St Hartford IL 62048 f. Phone:618-466-1036	27199 State Hwy 3 Godfrey IL 62035 g. Phone:
If owner of the generating facility differs from the generator, provide: h. Owner's Name:	i. Owner's Phone No.:

j. Waste Profile #	k. Exp. Date	l. Waste Shipping Name and Description	m. Containers No.	m. Containers Type	n. Total Quantity	o. Unit Wt/Vol
4338152865	2/19/16	Petroleum Cont'd Soil & Rock	01	CM	10	Y
		1109926			13.23	T

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; AND, if this waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions. I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR 268 and is no longer a hazardous waste as defined by 40 CFR 261.

p. Generator Authorized Agent Name (Print)	q. Signature	r. Date
[signature]	[signature]	2/26/15

II. TRANSPORTER (Generator completes IIa-b and Transporter completes IIc-e)

a. Transporter's Name and Address:
Midwest Santiary Services
333 N Old St Louis Rd
Wood River IL 62095
b. Phone: 618-254-0171

#20987

c. Driver Name (Print)	d. Signature	e. Date
Thorne		2/24/15

III. DESTINATION (Generator complete IIIa-c and Destination Site completes IIId-g)

a. Disposal Facility and Site Address:	c. US EPA Number	d. Discrepancy Indication Space:
Roxana LF 4601 Cahokia Creek Rd. Edwardville, IL 62025 b. Phone: 618.656.3929		

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

e. Name of Authorized Agent (Print)	f. Signature	g. Date
Crystal Horton	[signature]	2/26/15

IV. ASBESTOS (Generator completes IVa-f and Operator complete IVg-i)

a. Operator's Name and Address:	c. Responsible Agency Name and Address:
b. Phone:	d. Phone:

e. Special Handling Instructions and Additional Information:

f. ☐ Friable ☐ Non-Friable ☐ Both % Friable % Non-Friable

OPERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked and labeled and are in all respects in proper condition for transport by highway according to applicable international and national governmental regulations.

g. Operator's Name and Title (Print)	h. Signature	i. Date

*Operator refers to the company which owns, leases, operates, controls, or supervises the facility being demolished or renovated, or the demolition or renovation operation or both

REPUBLIC SERVICES, INC.

NON-HAZARDOUS SPECIAL WASTE & ASBESTOS MANIFEST

If waste is asbestos waste, complete Sections I, II, III and IV
If waste is **NOT** asbestos waste, complete Sections I, II and III

I. GENERATOR (Generator completes Ia-r)

a. Generator's US EPA ID Number	b. Manifest Document Number	c. Page 1 of 1

d. Generator's Name and Location:	e. Generator's Mailing Address:
Widman Construction Inc West Birch St, Arbor St Hartford IL 62048 f. Phone:618-466-1036	27199 State Hwy 3 Godfrey IL 62035 g. Phone:
If owner of the generating facility differs from the generator, provide: h. Owner's Name:	 i. Owner's Phone No.:

j. Waste Profile #	k. Exp. Date	l. Waste Shipping Name and Description	m. Containers No.	m. Containers Type	n. Total Quantity	o. Unit Wt/Vol
4338152865	2/19/16	Petroleum Cont'd Soil & Rock	01	CM	10	Y
		1109946			20.41	T

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; AND, if this waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions. I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR 268 and is no longer a hazardous waste as defined by 40 CFR 261.

p. Generator Authorized Agent Name (Print)	q. Signature	r. Date
Dallas W Reed	Dallas W Reed	2/26/15

II. TRANSPORTER (Generator completes IIa-b and Transporter completes IIc-e)

a. Transporter's Name and Address:
Midwest Santiary Services
333 N Old St Louis Rd
Wood River IL 62095
b. Phone: 618-254-0171

#20767

c. Driver Name (Print)	d. Signature	e. Date
John Thurman		2/26/15

III. DESTINATION (Generator complete IIIa-c and Destination Site completes IIId-g)

a. Disposal Facility and Site Address:	c. US EPA Number	d. Discrepancy Indication Space:
Roxana LF 4601 Cahokia Creek Rd. Edwardville, IL 62025 b. Phone: 618.656.3929		

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

e. Name of Authorized Agent (Print)	f. Signature	g. Date
Crystal Hutton	Crystal Hutton	2/26/15

IV. ASBESTOS (Generator completes IVa-f and Operator complete IVg-i)

a. Operator's Name and Address:	c. Responsible Agency Name and Address:
b. Phone:	d. Phone:

e. Special Handling Instructions and Additional Information:

f. ☐ Friable ☐ Non-Friable ☐ Both % Friable % Non-Friable

OPERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked and labeled and are in all respects in proper condition for transport by highway according to applicable international and national governmental regulations.

g. Operator's Name and Title (Print)	h. Signature	i. Date

*Operator refers to the company which owns, leases, operates, controls, or supervises the facility being demolished or renovated, or the demolition or renovation operation or both

REPUBLIC SERVICES, INC.

NON-HAZARDOUS SPECIAL WASTE & ASBESTOS MANIFEST

If waste is asbestos waste, complete Sections I, II, III and IV
If waste is **NOT** asbestos waste, complete Sections I, II and III

I. GENERATOR (Generator completes Ia-r)

a. Generator's US EPA ID Number	b. Manifest Document Number	c. Page 1 of 1

d. Generator's Name and Location:	e. Generator's Mailing Address:
Widman Construction Inc West Birch St, Arbor St Hartford IL 62048 f. Phone:618-466-1036	27199 State Hwy 3 Godfrey IL 62035 g. Phone:
If owner of the generating facility differs from the generator, provide:	
h. Owner's Name:	i. Owner's Phone No.:

j. Waste Profile #	k. Exp. Date	l. Waste Shipping Name and Description	m. Containers No.	m. Containers Type	n. Total Quantity	o. Unit Wt/Vol
4338152865	2/19/16	Petroleum Cont'd Soil & Rock	01	CM	10	Y
		111000			11.38	T

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; AND, if this waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions. I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR 268 and is no longer a hazardous waste as defined by 40 CFR 261.

p. Generator Authorized Agent Name (Print)	q. Signature	r. Date
Patrick V. Kelly		2/26/15

II. TRANSPORTER (Generator completes IIa-b and Transporter completes IIc-e)

a. Transporter's Name and Address:		
Midwest Santiary Services 333 N Old St Louis Rd Wood River IL 62095 b. Phone: 618-254-0171	#20983	
c. Driver Name (Print)	d. Signature	e. Date
Johnny Thrasher		2/26/15

III. DESTINATION (Generator complete IIIa-c and Destination Site completes IIId-g)

a. Disposal Facility and Site Address:	c. US EPA Number	d. Discrepancy Indication Space:
Roxana LF 4601 Cahokia Creek Rd. Edwardville, IL 62025 b. Phone: 618.656.3929		

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

e. Name of Authorized Agent (Print)	f. Signature	g. Date
Christel Hayton		2/26/15

IV. ASBESTOS (Generator completes IVa-f and Operator complete IVg-i)

a. Operator's Name and Address:	c. Responsible Agency Name and Address:
b. Phone:	d. Phone:

e. Special Handling Instructions and Additional Information:

f. ☐ Friable ☐ Non-Friable ☐ Both % Friable % Non-Friable

OPERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked and labeled and are in all respects in proper condition for transport by highway according to applicable international and national governmental regulations.

g. Operator's Name and Title (Print)	h. Signature	i. Date

*Operator refers to the company which owns, leases, operates, controls, or supervises the facility being demolished or renovated, or the demolition or renovation operation or both

SITE: ROXANA LANDFILL
ROXANA, IL 62084 618-659-5273

CUSTOMER 290
MIDWEST SANITARY SERVICES
P.O. BOX 83
WOOD RIVER IL 62095
4338152865

SITE	TICKET #	CELL
Y9	1110000	

WEIGHMASTER: Crystal H.

DATE/TIME IN	DATE/TIME OUT
02-26-2015 12:39 pm	02-26-2015 12:39 pm

VEHICLE	CONTAINER
MWROR20062	

REFERENCE: INVOICE

BILL OF LADING:

SCALE IN	GROSS WEIGHT	54,440	NET TONS	11.38	
TARE OUT	TARE WEIGHT	31,680	NET WEIGHT	22,760	INBOUND

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	TAX	TOTAL
10.00	YD	TRACKING QTY				
11.38	TN	SW-CONT SOIL W/FUEL ILLINOIS EXEMPT				

All customers exiting their vehicles must abide by all Republic Services Inc. safety standards, including the proper use of hard hats and ANSI 2 standard hi-vis reflective clothing. By Signature below, customer acknowledges receipt and understanding of said safety rules.

NET AMOUNT
TENDERED
CHANGE
CHECK#

The undersigned individual signing this document on behalf of Customer acknowledges that he or she has read and understands the terms and conditions on the reverse side and that he or she has the authority to sign this document on behalf of the customer.

2/21

RS-F042UPR (07/12)

SIGNATURE _____

SITE: ROXANA LANDFILL
ROXANA, IL 62084 618-659-5273

CUSTOMER 290
MIDWEST SANITARY SERVICES
P.O. BOX 83
WOOD RIVER IL 62095
4338152865

SITE	TICKET #	CELL
Y9	1109926	

WEIGHMASTER: Crystal H.

DATE/TIME IN	DATE/TIME OUT
02-26-2015 8:11 am	02-26-2015 8:11 am

VEHICLE	CONTAINER
MWROR20062	

REFERENCE: INVOICE

BILL OF LADING:

SCALE IN	GROSS WEIGHT	58,140	NET TONS	13.23	
TARE OUT	TARE WEIGHT	31,680	NET WEIGHT	26,460	INBOUND

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	TAX	TOTAL
10.00	YD	TRACKING QTY				
13.23	TN	SW-CONT SOIL W/FUEL ILLINOIS EXEMPT				

All customers exiting their vehicles must abide by all Republic Services Inc. safety standards, including the proper use of hard hats and ANSI 2 standard hi-vis reflective clothing. By Signature below, customer acknowledges receipt and understanding of said safety rules.

NET AMOUNT
TENDERED
CHANGE
CHECK#

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RS-F042UPR (07/12)

SIGNATURE _____

SITE: ROXANA LANDFILL

ROXANA, IL 62084 618-659-5273

CUSTOMER 290
MIDWEST SANITARY SERVICES
P.O. BOX 83
WOOD RIVER IL 62095

4338152865

SITE	TICKET #	CELL
Y9	1109946	

WEIGHMASTER: Crystal H.

DATE/TIME IN	DATE/TIME OUT
02-26-2015 9:36 am	02-26-2015 9:36 am

VEHICLE: MWROR20062

CONTAINER:

REFERENCE: INVOICE

BILL OF LADING:

SCALE IN / TARE OUT

GROSS WEIGHT 72,500 — TARE WEIGHT 31,680 — NET TONS 20.41 — NET WEIGHT 40,820 — INBOUND

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	TAX	TOTAL
10.00	YD	TRACKING QTY				
20.41	TN	SW-CONT SOIL W/FUEL ILLINOIS EXEMPT				

All customers exiting their vehicles must abide by all Republic Services Inc. safety standards, including the proper use of hard hats and ANSI 2 standard hi-vis reflective clothing. By Signature below, customer acknowledges receipt and understanding of said safety rules.

NET AMOUNT

TENDERED

CHANGE

CHECK#

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2/21

RS-F042UPR (07/12)

SIGNATURE _____

SITE
ROXANA LANDFILL
ROXANA, IL 62084 618-659-5273

CUSTOMER 290
MIDWEST SANITARY SERVICES
P.O. BOX 83
WOOD RIVER IL 62095
4338152865

SITE	TICKET #	CELL
Y9	1110230	

WEIGHMASTER: Crystal H.

DATE/TIME IN	DATE/TIME OUT
02-27-2015 12:07 pm	02-27-2015 12:07 pm

VEHICLE	CONTAINER
MWROR20031	

REFERENCE: INVOICE

BILL OF LADING:

SCALE IN	GROSS WEIGHT	70,740	NET TONS	18.83	
TARE OUT	TARE WEIGHT	33,080	NET WEIGHT	37,660	INBOUND

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	TAX	TOTAL
15.00	YD	TRACKING QTY				
18.83	TN	SW-CONT SOIL W/FUEL ILLINOIS EXEMPT				

All customers exiting their vehicles must abide by all Republic Services Inc. safety standards, including the proper use of hard hats and ANSI 2 standard hi-vis reflective clothing. By Signature below, customer acknowledges receipt and understanding of said safety rules.

NET AMOUNT
TENDERED
CHANGE
CHECK#

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RS-F042UPR (07/12) 2/21

SIGNATURE 20914

SITE
ROXANA LANDFILL
ROXANA, IL 62084 618-659-5273

CUSTOMER 290
MIDWEST SANITARY SERVICES
P.O. BOX 83
WOOD RIVER IL 62095
4338152865

SITE	TICKET #	CELL
Y9	1110193	

WEIGHMASTER: Angel L.

DATE/TIME IN	DATE/TIME OUT
02-27-2015 10:38 am	02-27-2015 10:38 am

VEHICLE	CONTAINER
MWROR20031	

REFERENCE: INVOICE

BILL OF LADING:

SCALE IN	GROSS WEIGHT	75,160	NET TONS	21.04	
TARE OUT	TARE WEIGHT	33,080	NET WEIGHT	42,080	INBOUND

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	TAX	TOTAL
15.00	YD	TRACKING QTY				
21.04	TN	SW-CONT SOIL W/FUEL ILLINOIS EXEMPT				

All customers exiting their vehicles must abide by all Republic Services Inc. safety standards, including the proper use of hard hats and ANSI 2 standard hi-vis reflective clothing. By Signature below, customer acknowledges receipt and understanding of said safety rules.

NET AMOUNT
TENDERED
CHANGE
CHECK#

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RS-F042UPR (07/12)

SIGNATURE 20931

SITE
ROXANA LANDFILL
ROXANA, IL 62084 618-659-5273

CUSTOMER
290
MIDWEST SANITARY SERVICES
P.O. BOX 83
WOOD RIVER IL 62095
4338152865

SITE	TICKET #	CELL
Y9	1110173	

WEIGHMASTER: Angel L.

DATE/TIME IN	DATE/TIME OUT
02-27-2015 9:15 am	02-27-2015 9:15 am

VEHICLE	CONTAINER
MWRO20031	

REFERENCE: INVOICE

BILL OF LADING:

SCALE IN	GROSS WEIGHT	65,600	NET TONS	17.18	
TARE OUT	TARE WEIGHT	31,240	NET WEIGHT	34,360	INBOUND

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	TAX	TOTAL
15.00	YD	TRACKING QTY				
17.18	TN	SW-CONT SOIL W/FUEL ILLINOIS EXEMPT				

All customers exiting their vehicles must abide by all Republic Services Inc. safety standards, including the proper use of hard hats and ANSI 2 standard hi-vis reflective clothing. By Signature below, customer acknowledges receipt and understanding of said safety rules.

NET AMOUNT
TENDERED
CHANGE
CHECK#

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RS-F042UPR (07/12)

SIGNATURE 20994

SITE
ROXANA LANDFILL
ROXANA, IL 62084 618-659-5273

CUSTOMER
290
MIDWEST SANITARY SERVICES
P.O. BOX 83
WOOD RIVER IL 62095
4338152865

SITE	TICKET #	CELL
Y9	1110146	

WEIGHMASTER: Angel L.

DATE/TIME IN	DATE/TIME OUT
02-27-2015 7:59 am	02-27-2015 7:59 am

VEHICLE	CONTAINER
MWROR20031	

REFERENCE: INVOICE

BILL OF LADING:

SCALE IN	GROSS WEIGHT	36,240	NET TONS	1.58	
TARE OUT	TARE WEIGHT	33,080	NET WEIGHT	3,160	INBOUND

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	TAX	TOTAL
10.00	YD	TRACKING QTY				
1.58	TN	SW-CONT SOIL W/FUEL ILLINOIS EXEMPT				

All customers exiting their vehicles must abide by all Republic Services Inc. safety standards, including the proper use of hard hats and ANSI 2 standard hi-vis reflective clothing. By Signature below, customer acknowledges receipt and understanding of said safety rules.

NET AMOUNT
TENDERED
CHANGE
CHECK#

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RS-F042UPR (07/12)

SIGNATURE 20814

ROXANA LANDFILL

ROXANA, IL 62084 618-659-5273

CUSTOMER 600
WIDMAN TRUCKING & EXCAVATI
27199 STATE HWY 3
GODFREY IL 62035

4338152865-600

SITE	TICKET #	CELL
Y9	1124716	

WEIGHMASTER: IN - Angel L. OUT - Loral E.

DATE/TIME IN	DATE/TIME OUT
05-05-2015 9:30 am	05-5-2015 9:56 am

VEHICLE	CONTAINER
WCSA	

REFERENCE: INVOICE

BILL OF LADING:

SCALE IN	GROSS WEIGHT	8,800	NET TONS	0.26	
SCALE OUT	TARE WEIGHT	8,280	NET WEIGHT	520	INBOUND

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	TAX	TOTAL
1.00	YD	TRACKING QTY				
0.26	TN	SW-CONT SOIL W/FUEL ILLINOIS EXEMPT				
1.00		ENVIRONMENTAL FEE 1				

All customers exiting their vehicles must abide by all Republic Services Inc. safety standards, including the proper use of hard hats and ANSI 2 standard hi-vis reflective clothing. By Signature below, customer acknowledges receipt and understanding of said safety rules.

NET AMOUNT
TENDERED
CHANGE
CHECK#

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2/21

RS-F042UPR (07/12)

SIGNATURE _____