

Pollution Report 86 (and Final)
Metro Container Corporation NPL Site
2nd and Price Street
Trainer, Delaware County, PA 19061

LAT: 39°49'29.93" north
LONG: 75°23'56.57" west

ATTN: RRC
C. Sklaney
G. Heston
D. Armstrong, PADEP
L. Fulton, Delaware County

DATE: October 29, 2014

This Pollution Report (POLREP) document is prepared to summarize the Removal Action conducted by EPA between September 2013 and September 2014 at the Metro Container Corporation NPL Site. The Site is located at the intersection of Second and Price Streets in Trainer Borough, Delaware County, PA and alongside Stoney Creek. See prior POLREPs (esp. #50) for additional background information considered in the removal site evaluation supporting this Removal Action. This document is supported by figures which are attached and show the features referred to herein.

I. SUMMARY FACT SHEET

Site Name: Metro Container Corporation NPL Site

Size: approximately 10 acres

Location: Trainer Borough, Delaware County, PA

Funding Approval Date: August 26, 2013

Project Period: 9/16/13 through 9/5/14

Project Description: This Removal Action addressed PCBs-contaminated soils, an area of crushed and buried drums, and numerous pipe systems or drainage features that conveyed hazardous substances into or towards Stoney Creek. See Narrative description below for more information.

Hazardous Substances Present: PCBs, Carbon Disulfide, Toluene, Others

Quantities Removed: See Table in Section II below

OSC: Michael Towle

Primary Cleanup Contractor: WRS Compass

Disposal Location: Various, See Table in Section II below

Project Ceiling: \$4051,100

Project Costs: \$2600,411

Comments: The Removal Action could not be completed as contemplated. The amount of highly contaminated soil (NAPL) was much larger than expected and largely within the ground water table in the western portion of the Site. Additionally, many of the pipe

systems extended under areas which could not be safely addressed due to the presence of a significantly deteriorated building. Finally, the action addressed many more pipe systems than originally expected as they were found during the course of the Removal Action. Additional actions may be required to address the threats originally identified.

II. DISPOSITION OF WASTES

Waste Stream	Quantity	Manifest #	Disposal Facility
Non- TSCA Regulated Soils	6,799.02 tons (est.)	306 various manifests	Conestoga Landfill, Morgantown Pennsylvania
Non-TSCA Debris	712.73 tons (est.)	30 various manifests	Conestoga Landfill, Morgantown Pennsylvania
Non-TSCA Wastewater (Frac Tank #1)	17,070 Gallons	MCS-WW-0001 to MCS-WW-0003	Environmental Recovery Corporation, Lancaster PA
Wastewater with >4ppb PCBs (Frac Tank #2)	15,542 Gallons	MCS-WW-0004 to MCS-WW-0006	Environmental Recovery Corporation, Lancaster PA
Non-TSCA Wastewater (Frac Tank #3)	16,292 Gallons	MCS-WW-0007 to MCS-WW-0009	Environmental Recovery Corporation, Lancaster PA
Non-TSCA Wastewater (Frac Tank #4)	19,400 Gallons	MCS-WW-0010 to MCS-WW-0012	Environmental Recovery Corporation, Lancaster PA
Non-TSCA Wastewater (Frac Tank #1) R	15,240 Gallons	MCS-WW-0013 to MCS-WW-0015	Environmental Recovery Corporation, Lancaster PA
Suspect Non-Friable ACM (Transite pipe)	15 tons (estimated)	MCS-ASB-0001	Conestoga Landfill, Morgantown Pennsylvania
TSCA Regulated Soils	4,184.34 tons	175 various manifests	Heritage Environmental Services Landfill, Roachdale Indiana
PCB & ACM (Gallbestos)	8154 kg	012265068JJK	Wayne Disposal, Belleville MI
Grid 30 UST contents	7- 55 gal drums (3,500 lbs est.)	012094953JJK	Envirite of Pennsylvania, York PA
Pipe NN (PCB) contents	5 Gallon pail	000558359 VES	Veolia ES Technical Solutions in Port Arthur, Texas

III. OUTCOME MEASURES

Site Name: Metro Container Corporation NPL Site

Site Address: Corner of Second and Price Street, Trainer, Delaware County, PA 19061

Site ID: 032H

Lat./Long.: 39°49'29.93" north / -75°23'56.57" west

Contaminant Names: PCBs, VOCs (e.g., carbon disulfide, toluene), PAHs (e.g., benzo(a)pyrene)

Est. Volume of Contaminant Removed: See Section II above

Contaminated Medium: Soil (included water, tank contents, and debris)

Number of People for Whom Exposure is Avoided: est. 100

Extramural Funding: \$2600,411 (see Section IV)

IV. COST SUMMARY (available as of 9/24/14) / FUNDING DOCUMENT

On August 26, 2013, EPA Region III approved an Action Memorandum and selected a Time-Critical Removal Action pursuant to Section 104(a) of the Comprehensive Environmental Response, Compensation, and Liability Act, as amended (CERCLA), determining it is appropriate and necessary to mitigate threats posed by the release and threatened release of hazardous substances from the Site. A Removal Action ceiling of \$4,051,100, of which \$3,923,600 is from the Regional Removal Allowance, was approved by Region III.

	Budgeted	Total To Date	Remaining
ERRS Cleanup Contractor	\$2,577,602	2,486,406	\$91,196
START- Removal	\$129,741	\$114,005	\$15,736
Unallocated	\$1,343,757	\$0	\$1,343,757
Total Site Costs	\$4,051,100	\$2,600,411	\$1,450,689

	Budgeted	Total To Date	Remaining
START- Assessment	\$149,927	\$96,459	\$53,468

* The above accounting of expenditures is an estimate based on figures known to the OSC at the time this report was written. The OSC does not necessarily receive specific figures on final payments made to any contractor(s). Other financial data which the OSC must rely upon may not be entirely up-to-date. The cost accounting provided in this report does not necessarily represent an exact monetary figure which the government may include in any claim for cost recovery.

V. ROSTER OF AGENCIES

EPA OSC – Michael Towle (Towle.Michael@epa.gov)
EPA RPM – Chris Sklaney
ERRS Contractor – WRS Compass; Todd Conley, Ray Willis
START Contractor – Weston; Tom Dakin

VI. SITE BACKGROUND / INFORMATION CONSIDERED

In the 1880s and 1890s the Delaware Oil Works operated an oil refinery at the Site. The layout of the facility can be seen on Hexamer fire insurance maps from 1891. Wax houses, tanks of oil and tar, and several stills are component to this oil-related facility. According to newspaper accounts, the Delaware Oil Works was extensively burned in 1886 and again in 1896.

A Sanborn fire insurance map from 1917 shows the Manufacturers Paraffine Company existing on the footprint of the former Delaware Oil Works. The 1917 Sanborn map indicates the presence of tanks or containment for oils, wax, tar, brine, and acid. Much of the storage is underground. A structure for the gluing and painting of barrels is also present.

Sometime in the 1920s, the Stauffer Chemical Company constructed a facility for the manufacture of carbon disulfide at the Site. A Sanborn fire insurance map from 1930 indicates the presence of the Stauffer facility configured such that the buildings of the former Delaware Oil Works and/or the Manufacturers Paraffine Company are likely no longer present. Instead, a much larger building occupies much of the space formerly occupied by numerous smaller buildings and tanks.

Aerial photographs from 1937, 1940, 1953, 1958, and 1959, as well as Sanborn fire insurance maps from 1930 and 1950 show the layout of the Stauffer Chemical Company. Present are a main building (in which the ovens used in the manufacturing process are located) and some attached buildings (including a boiler house), 2 rectangular basins in which storage tanks are located, a lagoon/impoundment (first visible in 1958 in the southwest corner of the Site), a reservoir/cooling tower feature, a waste burner (at the northwest corner of the main building area), several storage tanks, a small rectangular feature west of the main building (later identified as a “separator”), and several smaller buildings. Two rail spurs serve the facility.

Aerial photographs and Sanborn fire insurance maps produced sometime after 1965 show the Site with other owners and operators at the Site (e.g., Joseph A Ries, steel and fiber drum reconditioning, Universal, Metro Container, etc.). Most of the features original to the Stauffer Chemical Company are still visible and present well into the 1970s. According to the Sanborn map depicting the Joseph Ries drum reconditioning facility, the main building included operations for drum cleaning, paint storage, paint spraying, and a machine shop.

Site operations in the 1960s, 1970s and 1980s involved the cleaning and re-painting of drums sent to the Site. Photographs and reports prepared by EPA and the State of Pennsylvania over

time show that contaminated liquids were stored, minimally, in the lagoon/impoundment and one of the two rectangular basins that Stauffer used for storage tanks. The lagoon/impoundment was being closed by the late 1970s and was no longer visible on aerial photography by 1985. It also appears from a 1965 aerial photograph, that the 2 rectangular concrete basins and the reservoir/cooling tower are still present; the reservoir/cooling tower and one of the rectangular basins are gone by 1970. The lagoon/impoundment is visible in a 1979 aerial photograph and is not visible in a 1985 aerial photograph.

The Site was the subject of a Removal Action initiated by EPA in June 1988 due to threats posed by contaminated liquids associated with a concrete basin (one of the rectangular concrete basins once used by Stauffer for storage tanks) and thousands of drums at the Site. The Removal Action was assumed by and completed by Potentially Responsible Parties (PRPs) pursuant to an EPA Order. The primary goals of the Removal Action were to address contaminated liquids pooled at the Site and migrating from the Site towards Stoney Creek. The action also included the removal of thousands of drums containing residuals and some of the presumed contaminated surface soils. The Removal Action also addressed the cleaning and filling of the rectangular basin, a separator, and/or removal of other tanks at the Site.

In 1990, based upon information received during legal proceedings, EPA investigated certain pipe connections between the facility buildings/structures and Stoney Creek, the potential for wastes to be buried under a floor within the main building (a/k/a “lid room”), and the presence of buried drums at the Site. Numerous drums were unearthed. In response, the Removal Action was briefly restarted in 1990 to address some once buried drums.

In 1998 and 1999, assessment of the property was conducted by prospective purchasers of the property. Numerous hazardous substances were identified in Site soils and ground water as well as in the sediments of adjacent Stoney Creek. The assessment included a geophysical investigation of the subsurface of a limited portion of the property. Notable is the description of a “water-filled ditch” heading westward from the buildings toward the location of the former lagoon/impoundment. This ditch likely drains liquids from the floor drains/trench system within the main building and is visible on an aerial photograph from 1990.

In November 2005, a comprehensive site characterization was completed by a prospective purchaser of the property. The report identified numerous pipes of unknown origin; seeps entering Stoney Creek from the Site; subsurface soil contaminated with NAPL; sludge and elevated concentrations of PCBs; dissolved ground water plumes of PCBs, PAHs, pesticides, VOCs and inorganic elements; and, buried crushed drums, flyash, and sludge. The 2005 assessment activity included an evaluation of the potential for buried drums throughout the majority of the Site. Several areas of potential drum burial were identified resulting in the excavation of 4 trenches to investigate. One of the trenches in the northwestern area of the Site found numerous crushed drums (with residual contents) and drum lids. Another trench found a crushed drum, concrete foundation, and an unknown pipe. A third trench found a 15-inch metal pipe which is believed to be the pipe which conveyed liquids from the main building towards the lagoon/impoundment. The results of the 2005 investigation were used by EPA to guide parts of the 2013/2014 Removal Action.

Removal Site Evaluations were completed by EPA in March 2000, November 2007, and April 2009. The March 2000 evaluation focused on a search using geophysical methods for potential buried drums in a limited area of the Site. The November 2007 Removal Site Evaluation was conducted, in part, to confirm the analytical results generated in 2005 by the prospective purchaser. The results of the 2007 investigation were used by EPA to guide the 2013/2014 Removal Actions. The April 2009 Removal Site Evaluation focused on sediment concentrations in the Delaware River at the mouth of Stoney Creek and included the analysis of 209 PCB congeners.

In July 2010, EPA conducted limited soil sampling at the Site and replicated sediment sampling conducted in 2009 in support of Hazard Ranking System (HRS) screening for potential listing on the National Priorities List (NPL). The various investigations identified a correlation between the congeners found at the Site and those identified in sediment samples. The Metro Container Site was subsequently listed to the NPL on March 15, 2012.

VII. REMOVAL SITE EVALUATION (PRIOR TO REMOVAL ACTION)

Note: Removal Site Evaluation continued throughout the Removal Action.

Additional removal site evaluation (RSE) was conducted by the OSC and the RPM beginning in June 2013, in accordance with the NCP, 40 C.F.R. §300.410. The RSE considered available environmental information and data (e.g., 2005 and 2007 data) along with an on-Site assessment. The RSE identified a release and threatened release of hazardous substances from several principal source areas at the Site. These source areas include:

- a. a former earthen-bermed lagoon/impoundment area used for storage of a variety of liquid wastes (this source area also includes one or more pipes, culverts and sumps through which wastes flowed from the main building towards the lagoon/impoundment as well as former waste treatment tanks at various periods during Site operations);
- b. a highly contaminated soil area in which a rectangular concrete basin (and its earthen containment) and hundreds of waste sludge drums were previously located;
- c. an area of soil (including shallow soil) contaminated by elevated concentrations of polychlorinated biphenyls (PCBs); and,
- d. an area of buried and crushed drums containing residual hazardous substances and other unknown materials.

The Site also includes multiple systems of underground pipes. The pipes are largely of unknown purpose. Certain pipes are documented to discharge storm water and, formerly, waste waters from the Site. Two of these pipes are known to have discharged unknown substances directly into Stoney Creek for unknown reasons.

These source areas contain elevated concentrations of hazardous substances. Non-aqueous phase liquids (NAPL) and sludge resulting from historical operations at the Site are typically associated

with the elevated concentrations of hazardous substances. Hazardous substances releasing from these source areas into the environment include PCBs, pesticides, polycyclic aromatic hydrocarbons (PAHs)(e.g., benzo(a)pyrene), volatile organic compounds (VOCs)(e.g., toluene), semi-volatile organic compounds (SVOCs)(e.g., trichlorobenzene), pesticides (e.g., chlordane), and inorganic elements (e.g., lead).

The OSC and RPM for the Site conducted additional removal site evaluation (RSE) at the Site inclusive of review of available information and evaluation of the present Site conditions between July and September 2013. The Superfund Technical Assessment and Response Team (START) contractor, Weston Solutions, and the EPA RPM performed a shoreline assessment of Stoney Creek evaluating known outfall pipes and seep locations on July 25, 2013.

From July 31 through August 2, 2013, START utilized a sub-contractor to locate and map underground utilities, piping and other features associated with historic Site operations and waste disposal. The subcontractor conducted an inspection of the onsite storm-water drainage system using robotic cameras, tracer wires and non-hazardous dyes to determine the overall condition, points of origin, contamination sources and outfall locations of the system. It was determined that the current storm water conveyance system was in overall good condition and did not contain junctions or underground connections to historic waste disposal operations at the Site.

The green 12" PVC outfall into Stoney Creek, documented to have previously conveyed wastewaters from the main building, was inspected via in-pipe video camera survey by placing the camera up the outfall. Refusal was met at 87' due to sediment and debris clogging the pipe.

Many other features were electronically identified and field located, but could not be verified as to purpose or condition.

The Removal Site Evaluation is summarized in the August 26, 2013, Action Memorandum.

The Removal Action was approved and a response action selected in August 26, 2013. The Removal Action generally entails the elimination of migration pathways (buried pipes), removal of soils impacted by greater than 50 parts per million PCBs and high concentrations of NAPL, and threats posed by the historic crushed drum area. Actions will be consistent with future anticipated remedial actions and will contribute to the efficient performance of any future remedial action.

A meeting was held September 16, 2013, at the Site and attended by EPA OSC, EPA RPM, ERRS contractor (WRS Compass), START contractor (Weston Solutions), Remedial data evaluator (EA Engineering) and the Site owner to discuss the schedule and logistics of the upcoming Removal Action. This meeting initiated the Removal Action.

To support continuing Removal Site Evaluation, approximately 45 surface and shallow soil samples were collected between September 16 and 26, 2013, to help the OSC evaluate PCB contamination in surface and shallow soils in the western area of the Site for possible re-use as backfill during the removal action and to facilitate Site control. Shallow test pits were excavated

using a mini-excavator using a grid system established to support pending operations. This grid system defines 40 (60' x 60') grids in the western region of the Site. Many of the future operations at the Site were located and defined using this grid system.

A Figure was produced to identify the location of Grids, test pits, electronically identifiable features, and the 2005 Geoprobe locations. This Figure and information was available to EPA to help guide initial removal activities.

On September 30, 2013, ERRS and START began to mobilize personnel and equipment to the Site to begin the Removal Action. Mobilization was suspended on October 4, 2013, due to a Government shutdown. Activities were reinitiated October 21, 2013.

VIII. NARRATIVE SUMMARY OF REMOVAL ACTION

Figures which depict the features and pipe systems identified herein are attached. Analytical data/results which support the actions are summarized in the text below and described at the time analytical results were received.

as of November 1, 2013

Initial operations involved locating, excavating and removing known underground pipe systems related to historic Site operations. These pipes were indicated or suspected after review of Site records. Such records minimally indicated the probability of 3 pipes entering Stoney Creek and a pipe system between the main building and either a "separator" or the lagoon/impoundment.

EPA continually reviewed aerial photography and information/observations collected during excavation activities to develop a more comprehensive understanding of pipe systems at the Site. Ultimately, EPA directed operations to locate and remove pipe systems suspected based upon features in aerial photographs and information accumulated during ongoing subsurface activity. During excavations relating to pipe systems, EPA directed the contractor to remove pipes that were encountered and to stage those pipes, their contents, and heavily contaminated surrounding soils for future off-Site transportation and disposal. EPA coordinated Site operations with the ongoing operations of a business occupying the Site.

A buried 15-inch metal pipe was known to exist and run westward from the main building at the Site towards a concrete "separator" box and/or the lagoon/impoundment feature. The pipe was suspected to convey liquid wastes from the main building into a concrete "separator" located west of the building. This concrete separator was reportedly previously addressed during removal activities conducted by others. The 15-inch pipe was located and uncovered. The pipe was uncovered at its connection into a concrete multi-chambered concrete box (i.e., "separator"). At the separator, the pipe was found nearly full of an unknown sludgy material with a petroleum odor. The 15-inch metal pipe also conveyed clear liquid with pH 12 into the separator. The separator was found to be lined and filled with clay; however, the 15-inch metal pipe continued to convey liquid behind the liner inside the separator.

The 15-inch metal pipe was excavated and removed. An 8-inch hole was found in the side of the Pipe. The hole had been wrapped and covered with a make-shift patch (possibly linoleum). The patch had failed and nearby soils were found saturated with oily liquid. The origination point for the 15-inch pipe within the main building could not be determined as it lay beneath equipment (sand tanks) currently in use by the current Site owner. The OSC requested START to sample the pipe contents. A sample was also collected for quick turnaround PCB analysis to support staging and disposal of pipe contents (analytical below).

The area alongside the concrete separator was then examined to determine if it could be determined how materials exited the separator (if not via pump). A concrete gutter system (trench or culvert) filled with dried black material was found constructed alongside the southern wall of the separator. A hole penetrated through the southern wall of the separator which could allow a floating layer or overflow from the separator to empty into the gutter system. The gutter ran east/west, was buried approximately 2 feet below the current ground surface, and sloped downward towards and into the footprint of the former lagoon/ impoundment. Items such as bungs and drum gaskets were found within the material filling this feature.

The OSC believed that a system of interconnected trenches/drains in the floor of the main building which conveyed liquids outside of the buildings along its western edge may have emptied into the 15-inch metal pipe. Presently, the water migrating through the trenches is discharged onto the ground surface since the trenches are full of sand and debris. The OSC investigated the floor drainage system and found black material with a petroleum-odor at the base of some of the trenches (certain areas of the trench system had no constructed concrete base). Liquids (e.g., precipitation entering through the roofless main building) migrating through the trenches would be in contact with the materials in the trenches and then exit at the western edge the building. An excavation at the point where the trench system exits the building verified that liquids have been migrating from the building through the trench system and into the nearby soils (significant presence of oily liquids). The OSC requested START to sample the contents of the trenches comprising the drainage system. A sample of the surface materials was also collected for quick turnaround PCB analysis to support staging and disposal of trench contents (analytical below).

Numerous other unknown smaller diameter pipes and conduits made of plastic, iron and steel containing materials with chemical- or petroleum-like odors were found and removed from the shallow soils in the southwestern area of the Site (i.e., west of the main building at the Site). These pipes were originally encountered while removing the 15-inch metal pipe or excavating around the edges of the “separator”. These smaller pipes originated generally from the area of the main building and progressed westward towards the concrete separator, lagoon/impoundment or the former rectangular concrete basin used to hold liquid wastes. Several of the pipes contained thick black sludge-like material with elevated photoionization detector (PID) readings. While removing the pipes, the soil was noted to contain NAPL in the area west of the main building.

Operations moved to address the green 12" PVC pipe (Pipe D) that outfalls into Stoney Creek. This pipe was excavated from a point about 20 feet from the bank of the Creek (in order not to disturb the bank) and then eastward where it was found broken. The green PVC pipe was full of debris and sediment. Its origination point could not be determined. This pipe was previously documented to have served as an outfall from the buildings at the Site. A 34 foot section was removed, but a large section that exists through the Creek bank was left in place at this time.

Attempts were made to locate other historic outfall pipes along the Creek bank referenced in available documentation. At least 2 were previously documented to be present in addition to the green 12" PVC noted above. They were not yet found.

Air monitoring was conducted during excavation operations for particulates, volatile organic compounds, carbon monoxide, hydrogen sulfide, Lower Explosive Limit, and oxygen percentage. This type of monitoring would continue throughout the removal action. Elevated hydrogen sulfide levels were noted at times in the excavations. Lower VOC readings were noted at times as well.

as of November 08, 2013

Soils were found mounded atop and alongside the rectangular concrete basin feature in the vicinity of Grid 27. The OSC directed quick turnaround PCBs analysis of the mounded soils (analytical below) and that ERRS remove the mounded soil in order to prepare the area for the removal of PCBs-contaminated soils known to exist in this area. The mounded soil likely resulted from grading or construction activities at the Site after the 1990 removal actions. The mounded soil was found to be mixed with waste materials (e.g., debris or globs of paint) covered by what appeared to be clean soils. Being found to contain only low levels of PCBs, the mounded soil was removed and used to construct a berm (which was then covered with plastic sheeting) in order to create two staging areas for soils awaiting off-site disposal. Excess removed soil was staged aside for future onsite re-use (as backfill).

Note: soils encountered which contained only small amounts of waste, low levels of PCBs, or were comprised largely of construction debris were staged aside and used as backfill throughout the removal action.

The OSC directed that excavation operations in the source areas (e.g., area of expected crushed drums or area of PCBs soils) commence pending receipt of information from the PRPs relating to the potential for enforcement-lead removal actions.

as of November 15, 2013

On 11/7/13 EPA representatives met with representatives from a group of potentially responsible parties (PRPs) to discuss the potential that PRPs would undertake the Removal Action. EPA was subsequently informed that such PRP-lead action would not occur at this time.

AVAILABLE ANALYTICAL:

- PCBs in 15” metal Pipe: 12 mg/kg aroclor 1260
- PCBs in surficial material within building trenches: <1 mg/kg
- PCBs in mounded soil in Grid 27: <1 mg/kg

The OSC directed that the 12” green PVC pipe (Pipe D) be further located and removed. The operations were located in/near Grid 13. Previously, the pipe was traced from its outfall position to a break. It was surmised that the break may be due to the installation of storm drains in the area. The green 12” diameter PVC pipe was again located and found to discharge water and an unknown black liquid from an unknown source. The OSC opted to not further uncover this pipe at this time and directed that the excavation and pipe be secured to allow further investigation. Information indicates that its origins are in the former facility, but possible interconnections will be evaluated. Evaluation indeed indicated that the PVC pipe was likely broken due to the construction of the surface water conveyance system currently operating at the Site.

While trying to locate the green PVC outfall pipe, a concrete wall was found buried in /near Grid 13. This wall was further evaluated; ultimately two walls and a floor suggestive of a basin structure were identified. The basin contained an unknown amount of black oily sludgy solids. The feature coincides with a rectangular feature (Feature “D”) and nearby building (Feature “E”) clearly visible on aerial photography from 1965 and identified as the reservoir/cooling tower on Sanborn maps in 1930 and/or 1950. These features will not be addressed at this time since they are positioned under an area in use by the property owner for storage.

An area in Grid 17 of the Site was excavated where a possible drainage feature (Feature “H”) is observable on old aerial photographs. A buried concrete box (sump) was found. A steel pipe and terra cotta pipe were found at the base of the eastern wall of the sump leading eastward into Grid 18. These pipes conveyed black-colored liquid and water into the excavation. The OSC directed that the pipes and excavation be secured to allow further investigation to determine their point of origin or purpose.

To support upcoming operations, samples were collected to evaluate PCBs concentrations in the following areas on a quick turnaround basis:

- soils surrounding a steel and terra cotta pipe in Grid 18,
- surface soils on the grade after removal of the mounded soil in Grid 27,
- surface soils inside of the lagoon/impoundment footprint in Grid 37

To support future operations, the following samples were collected:

- a black and brittle tar- or charcoal-like substance encountered in Grid 35 while removing the 15-inch metal pipe
- sludge from within the buried concrete basin in Grid 13 (Feature D)

Material found in the trenches within the building was removed and staged for future offsite disposal.

as of November 22, 2013

AVAILABLE ANALYTICAL

- PCBs in soil surrounding pipes in Grid 18: ND
- PCBs in soil under the mounded soil of Grid 27: <1 mg/kg
- PCBs in surface soil within Grid 37: 5.4 mg/kg aroclors 1248 and 1260

A shallow swale was constructed across the Site through Grids 18, 19 and 20 to convey storm water originating from an asphalt-paved area near the main buildings away from the current work zone. This swale follows the trend of an existing (clogged) swale likely constructed to convey storm waters across the Site and into Stoney Creek.

In order to assist the OSC in making decisions about pipe systems (and their point of origin), a utility locating company was engaged to trace the pipe systems. The green PVC pipe was entered at its broken end in/near Grid 13 and videoed in an easterly direction. Video footage was unable to advance beyond 25' where a square pipe was found sleeved inside of the PVC pipe. Subsequent efforts with a tracer wire indicated that the pipe extended 175' to the east to a point where it could no longer be located under an asphalt parking area. Inspections of the steel pipe and terra cotta pipe located in Grid 18 were attempted, but most methods resulted in refusal due to large amounts of sludge/debris in the pipes. Following the inspection, these pipes were cemented shut to reduce transport through the pipes until they can be addressed later in the Removal Action.

The pipe excavations had to be de-watered to allow investigation activity. The water was pumped into a temporary tank ("Frac Tank") for storage and future treatment or disposal.

The OSC directed initiation of PCBs soil excavations. The area/volume of PCBs-contaminated soils were determined using various datasets and information inclusive of 2005, 2007, and September 2013. Additionally, soil samples were collected for PCBs analysis in Grids: 26, 27, 31, 32, 33, 34, 36, 37, 38 & 39 in order to assist in verifying depth of excavation, sorting, staging, and disposal options. These samples were ordered for quick turnaround and verified that only the surface soils (e.g., 0-2') in most areas needed removal for PCBs.

PCBs-contaminated soil excavations commenced in Grids 36, 21, 26 & the eastern portion of Grid 27. Soils between a depth of 0-2' were removed and staged for disposal as TSCA-regulated material (i.e., PCBs > 50 mg/kg). Soils in Grid 31 were non-PCBs impacted and were removed and staged for possible use as backfill.

as of November 29, 2013

The OSC directed ERRS to locate a buried pipe believed to outfall to Stoney Creek. Such an outfall was indicated in previous investigations at the southern boundary of the Site. The OSC believed the Site would necessarily drain liquids along its southern boundary; the records contain reports of seeps along the southern boundary. An approximately 18" diameter terracotta pipe was found (18" terra cotta pipe)(note that this pipe has been noted as 15" and 18' diameter in the site log books, but is denoted as 18" herein). The pipe was buried approximately 6 feet below ground surface and paralleled the southern border (fence line) of the Site. Thick black oily material was inside of the pipe. The removal of the pipe commenced from west to east. A section of the pipe (which included a concrete outfall structure hidden in brush upon the Creek bank) was left in place and plugged with cement pending future operations. The pipe was then removed from the Creek bank in an easterly direction through Grids 36, 37 & 38 (under the location of equipment (sand tank) used by the present owner).

A large thickness of unusual material (comprised of small pieces of a charcoal-like substance saturated with thick oily material) was found at depth in the southwestern portion of the Site. Several feet of this material exists between approximately 5 and 8 feet below ground surface and below the water table. The exact boundaries of this buried material are not delineated, but during the course of Removal Action it was observed in most of the grids between the main building and Stoney Creek. Eventually, operations would show that this material may be found at depths of approximately 10 feet (more or less) as the Creek is approached. This material was not removed. However, an aqueous sample was collected from a saturated layer of this charcoal-like substance located approximately 5 to 6 ft below ground surface in Grid 33 (analytical below). The saturated material is present atop a silty clay layer likely the original ground surface.

Historic documentation indicated that at least one sump was present near the rectangular concrete basin feature once used to hold oily sludge along Stoney Creek by the last operators of the Site. The OSC directed excavation around the walls of the concrete impoundment where the sumps were believed to be present based upon examination of site photographs from the 1980s (western and northern walls near to the northwest corner located in Grids 16 & 17). The sumps were found. At depth they were connected by steel pipes which appeared to then run towards the concrete box ("sump") feature (Feature H) previously found in Grid 17. The sumps were found to be filled with concrete. The soil adjacent to the sumps was found to be oily. The area was simply backfilled.

In preparation for work along the western edge of the main building, surface soils were sampled for PCBs and known shallow pipes located in Grid 40 were removed.

as of December 6, 2013

Excavation of the 18" terra cotta pipe was continued in Grid 38 on the eastern side of the owner's equipment (sand tank). Initially, this pipe could not be found and it was believed that a section may have been missing. The excavation filled with water and NAPL quickly making pipe identification and removal less than ideal. Once located and during removal of the 18" terra

cotta pipe, several additional pipes and a drop box were found in or near Grid 39 adjacent to the position of the 18" terra cotta pipe.

A section of a drop box was encountered in the excavation along with a steel lip (detached) for such a drop box. Underlying the drop box (and disturbed), was a concrete/terra cotta (appeared that concrete was poured atop terracotta) pipe junction. Originating from, or very close to, this concrete/terra cotta pipe junction were two (2) steel pipes and a 4" gray-colored PVC pipe. The outlet of the pipe junction was not followed and it was believed at that time that it may have entered the 18" terracotta previously removed (this turned out to likely be untrue and the exit destination is not determined).

The first steel pipe trended northwest towards the main building and eventually ended at a rock-walled tank with a concrete cover located in Grid 34. The contents of the steel pipe were sampled 12/2/13 (analytical below).

The second steel pipe trended northeast to continue to parallel the 18" terra cotta pipe. A sample was collected from this steel pipe on 12/3/13 (analytical below). Alongside and also paralleling this steel pipe was the 4" gray-colored PVC pipe. This 4" PVC pipe trended downward as it trended away from the area of the main building and entered into a break in the above-mentioned concrete/terracotta pipe junction. Both the PVC and the steel pipe which paralleled the 18" terra cotta ended about 15' from the main building. The 4" PVC pipe was determined by the OSC to be a newer pipe which was inserted into a much older drainage network. [NOTE: - later EPA would find another terra cotta pipe (8") immediately adjacent to the 18" terra cotta in Grids 39 and 40].

Other PVC and steel piping was also found located in Grid 40 (2" and 4" diameter) running in various directions, but predominantly away from the main building.

The material within the outfall structure related to the 18" terra cotta pipe was sampled 12/4/13 (analytical below).

[Note - A 12" steel pipe outfall was also discovered west of Grid 36 and the southern property fence line. It was subsequently determined that this pipe likely discharges storm water collected from property adjacent to the Site (i.e., railroad ditch line).]

An excavation was conducted in the Southern half of Grid 37 to determine its usefulness in water storage during nearby excavation activities. During the excavation, an approximate 15" (denoted at times as 24") reinforced concrete pipe was encountered positioned parallel to the 18" terracotta pipe (previously removed). Oil issued from this concrete pipe. The solids in this pipe were sampled 12/4/13 (analytical below). NAPL in the Grid 37 excavation was collected for Oil Fingerprint Analysis by the EPA Environmental Response team (ERT) on 12/4/13 (discussed below). The excavation in Grid 37 was then partially backfilled and secured for use as a water storage area while dewatering nearby excavations.

Due to the growing number of pipes and relating features encountered, the OSC requested that the various pipes and drainage features located at the Site and/or discovered during the Removal Action be documented using a consistent naming strategy. A naming system using letters was developed and implemented.

as of January 24, 2014

AVAILABLE ANALYTICAL

- PCBs in surface soils Grid 35: 25 mg/kg (aroclors 1248 and 1262)(note higher concentrations expected based upon historic data)
- PCBs in surface soils Grid 40: <1 mg/kg
- Aqueous sample associated with charcoal-like material in Grid 33. Among other things, the following were found:

Carbon Disulfide – 170 mg/L
PCBs – 11 ug/L (aroclors 1248 and 1262)
Phenolic compounds
Dimethyl disulfide
Chromium

- Sludge sample from 15” metal pipe from main building to separator. Among other things, the following were found:

PCBs – 89 mg/kg (1260 (diluted))
Biphenyl – 5.2 mg/kg
PCE – 3.9 mg/kg
Toluene – 8.2 mg/kg
Xylenes- 18.2 mg/kg

- Sludge from concrete basin (reservoir/cooling tower) found in Grid 13. Among other things, the following were found:

Alkanes
Low levels of PAHs

- Hard black tarry or charcoal-like material found in Grid 35. Among other things, the following were found:

Low levels of carbon disulfide
Low levels of PAHs

- Three samples collected from the material at the base of the floor trench system in the main building. The sample from the middle of the building contained, among other things:

PCBs – 141 mg/kg (aroclors 1242 and 1260)
Various other biphenyls – 5 to 6 mg/kg

- And a sample from the western portion of the building contained, among other things:

Toluene – 9.6 mg/kg
Xylenes – 49 mg/kg
DEHP – 17 mg/kg

- Oil Fingerprint analyses from NAPL in Grid 37 (see above) and from oily liquids near geoprobe location 106 (see below) contain some phenolic compounds and indicate similar characteristics to each other, but appear to be mixtures of oils possibly from paraffin-rich crude oil.

PCBs-contaminated soils surrounding a sample point collected in 2005 (i.e., 2005 geoprobe point 106) are removed. PCBs concentrations of approximately 524 mg/kg (aroclors 1248, 1254, and 1260) were previously detected at a depth of approximately 6.5 to 7 feet below grade. A 40 x 40 foot square centered on geoprobe point 106 is excavated. During excavation of the northern portion, a concrete structure was encountered and oily black liquid and oily sludge issued from the northern wall of the excavation. The oily sludge was contained and solidified in place. A sample of the oily liquids was collected 12/10/13 for oil fingerprint analysis. A sample of soil between 6 and 7 feet into the excavation was collected and submitted for PCBs analysis; none were detected. [NOTE- Pipe QQ, which exits from the area of the main building and contains PCBs contamination, is ultimately found and traced to the area of the 40 x 40 foot excavation]

The stacked rock-walled tank feature in Grid 34 is removed. One of the previously mentioned steel pipes terminated adjacent to the southwestern corner of this tank. Solids from the bottom are removed. Samples of the solids and water in the tank are collected 12/13/13 for PCBs analysis (see analytical below). After the sludge is removed, the tank is filled with stone. The concrete cover is not replaced. The eastern wall of the tank is concrete and penetrated by a hole indicating an easterly continuation of this feature. Upon investigation, another tank with a concrete cover and full of water is found east of the rock-walled tank. This part of the feature is covered over and left for later as its proximity to the sand tanks being used by the present property owner prevents further work at this time. This feature (Feature “O”) is identified as a double-chambered tank system; the stacked rock-walls of the one chamber are suggestive of a leaching feature.

The concrete basin feature (reservoir/cooling tower a/k/a “Feature D”) located in Grids 13, 14, 19 & 20 is then being excavated. The feature is ultimately found to include a rectangular basin (western area), concrete channels, building foundations (Feature E), and a concrete sump (eastern area). Excavation within and alongside the basin encountered numerous pipes and black

oily solids/sludge. Sludge, associated with crushed drums and a PID reading of 53 ppm, is sampled 1/13/14 (see analytical below). The green 12" PVC pipe (Pipe D) travelled along the northern edge of the feature and transitioned to a square steel pipe.

Excavations at the southeastern corner of the structure revealed multiple pipes and a concrete sump with ladder-rungs. A single pipe penetration was at the base of the southern wall of this sump. The pipe was plugged with a wooden plug. Ultimately, what is thought to be a pump pedestal, channel, and manhole are found just north of the sump. The channel and manhole are found to be filled with good quality clay.

While excavating along the eastern end of the concrete basin feature (cooling tower or Feature "E"), another segment of the 12" green PVC pipe (Pipe D) was located and found to be filled with oily black sludgy material. This section of the green pipe began at the position of a cinder block structure, which looked like a junction box, and then trended southeasterly towards the main building into Grid 25. The pipe was removed from the junction to the edge of the asphalt along with some heavily oiled soil.

A square metal pipe (Pipe Z) containing black solids and clear liquid also began at the cinder block structure (possible junction box mentioned above) and trended easterly towards the asphalt-covered parking area.

Soil excavated from within and surrounding the basin feature was staged in a stockpile (non-TSCA) awaiting offsite disposal.

The site was closed on January 20, 2014 due to the Martin Luther King Holiday.

An underground utility locator was on site January 21, 2014 to trace/determine the origin of seven pipes located in Grids 19 and 20 and relating to the concrete basin feature (Feature D and E). An approximately 4" diameter transite pipe in Grid 20 could not be traced. The tracing effort was overall inconclusive due to the probability that pipes crossed one another or simply ended. The site closed roughly halfway through the work day due to an occurring snowstorm. 8 to 10 inches of snow dropped on the site.

Additional soil sampling occurred in the northern section of the site to further characterize subsurface soils on 1/23/14 & 1/24/14 in an effort to delineate the area of PCB contamination expected. A Geoprobe unit was used to advance 21 borings, up to 15' bgs, and collect approximately 60 soil samples for PCB aroclor analysis. This data would be used to supplement existing PCBs data to further guide excavations.

as of February 7, 2014

AVAILABLE ANALYTICAL

- PCBs in solids from the stacked rock-walled tank in Grid 34: ND

- PCBs in the water from the stacked rock-walled tank in Grid 34: 3.9 ug/L (aroclor 1248), none found in a duplicate.
- VOCs associated with sludge/drums in the concrete basin (cooling tower) feature. Among other things, the following are found:

Benzene – 2.8 mg/kg
 Ethyl benzene – 1300 mg/kg
 Toluene – 1300 mg/kg
 Xylenes – 7100 mg/kg

A meeting was held with all personnel onsite to discuss buried pipe activities. The location, composition and content needed to be identified as best as possible given the complexity of high water table, infiltrating water, operating business, and unknown purpose/intent of any piping.

The northern portion of the concrete basin feature (Feature D) was deeper than the remainder. Many of the pipes associated with or found near the basin feature contained oily material or other liquid wastes. Many of the pipes were found to be leaking at points of deterioration or at joints.

The features were initially identified on a Figure (1-P61) attached to POLREP 61.

An underground utility locating expert was again onsite 01/29/14 to trace and mark out the direction/origin points of 19 pipes (pipes designated A, B, C1, C2, D, E, F, G, H, I, J, K, L, M, N1, N2, O, P, X)(note some pipes have more than a single letter designation as two separate points were exposed on two separate excavation walls). These pipes had been further exposed/removed suggesting the possibility of a more successful effort in further tracing. Both ERRS and START supported the underground utility locating operations. START utilized GPS to record the location of piping. Since several pipes still crossed over each other, the signals from the locator devices still provided false information at times as found during later removal operations.

Dewatering operations were conducted by ERRS to facilitate the removal of pipes/drainage systems identified by the OSC. The OSC directed the further removal of pipes containing sludge or oily material. The removal was conducted to a reasonable point (e.g., edge of asphalt) and then the pipe was cemented shut.

Numerous pipes were discovered near or associated with the concrete basin feature and associated foundations and pit (Feature D and E). Running clockwise from the north of the basin (NOTE: this listing contains corrected information not originally present in POLREPs. The corrections reflect “discoveries” of what turned out to be the same pipe at different times. Additionally, this list includes information learned subsequent to this time period to provide more clarity to the information in this list):

- Pipe A runs northeasterly from near the northern wall of the basin and is metal. It was found empty and was not completely removed.

- Pipe B is constructed of what appears to be asbestos cement sections and joints of various types (including a “fernco” style rubber boot). The pipe was found near the eastern wall of the concrete basin and headed northeasterly to the north side of the main office building. It also continued to travel westerly under the basin. The OSC suspects the pipe to be related to old sanitary discharge. The pipe was cemented shut.
- Pipes C1 and C2 are 6” are metal pipes that were originally found exiting from underneath the eastern side of the northern (deep) end of the concrete basin. These pipes trend easterly and then turn southerly towards the main building. These pipes contained oily liquids and solids. These pipes were exposed to a point near the asphalt pavement and were cemented shut. These pipes travel westerly under the concrete basin.
- Pipe Z is a square metal pipe that trends east-west. The pipe started from within Pipe D (green PVC) and then entered exited what appears to have been a cinder block junction (along with another Section of the 12” green PCV Pipe (“D”)). The pipe contains black material and was cemented shut.
- Pipe D is a green PVC pipe. It outfalled into Stoney Creek and then turned into the above-mentioned square metal pipe (“Z”). At a cinder block junction, the green PVC pipe trended towards the main building while the square metal pipe trended easterly. The green PVC pipe is full of oily material.
- Pipes E and G are pipes which include suspected asbestos cement segments. Pipe E elbowed around the concrete pit at the southeastern corner of Feature E and then under the junction mentioned above into which both the Green PVC Pipe and the Square Steel pipe entered. Pipe G elbowed up into a Y at the concrete pit. Both of these pipes were removed to a point near the asphalt-paved area and cemented shut. Both of these pipes contained oily water. The area with the cemented pipe ends is immediately alongside the cemented ends of pipes C1, C2, and Z.
- Pipe F is metal and runs atop Pipe E trending east. It had no contents / contamination and was cemented and left.
- Pipes H and I are believed to be water lines (clear rusty water within). Pipe J is a continuation of H. Pipe L is a continuation of Pipe I. These pipes were found immediately southeast of Feature E.
- Pipe K is an 8” metal pipe which was found with a valve on the end very close to the concrete pit. It originates from the area of the main building. The soil around this pipe at its easterly end was very contaminated by oily material near a flange. A “T” from Pipe K ran down along the southern wall of the basin feature (at which time it was called Pipe P).
- Pipe P begins as a “T” from Pipe K. It had 2 “T”s which headed south (deemed Pipes “O”) near/into a small structure (Feature G) seen on aerial photographs and then continued westerly towards Stoney Creek. This pipe system released oily material several times and a black solvent smelling material at Point “O”.
- Pipes O were “Ts” from Pipe P (see above). One of these T’s was “found” multiple times causing it to be identified differently in Site reporting (i.e., R). Site photographs verify this mistake.
- Pipe Y exits from the bottom of the concrete pit found east of the basin. It had a wooden plug in it. This pipe was left in place.

- Pipe M elbowed from the eastern wall of the shallow portion of the basin (reservoir) and then turned southerly towards the main building. The Pipe was found to contain oily material and was cemented shut.
- Pipe N is a 4" metal pipe that splits and goes in two different directions at the edge of the excavation area. The east side is labeled "N"1 and the west is labeled "N2". These pipes did not appear to convey contamination. It is believed that these pipes entered the area of the basin at the point of a small square concrete box/pit filled with oily sludge. Additionally, if "N" were extended across the basin it would line up with a "T" found within the square metal pipe running along the northern portion of the basin.
- Along the south side of the basin, 3 small diameter PVC pipes angled from the southwest into the southeast area of the basin. At the approximate point where they may have entered the basin, a square concrete box/pit was found full of oily sludge along with 2 crushed drums containing oily sludge.
- Pipe Q is a 6 inch metal pipe that was found connected into the shallow portion of the basin along its southern wall. It contained a very fluid black material with a strong solvent odor. A small segment was removed, but it is not known from where it originated.
- Pipe R is a 6 inch metal pipe which contained a very viscous yellow liquid and thought to be a new pipe when first found. This pipe is one of the T's from Pipe K (see above) and was determined to really be Pipe "O" based upon Site photographs.
- Pipe S was found elbowing into the excavation along the southern wall of the basin. It appeared to originate from the main building and then ran westerly parallel to Pipe K. This pipe has both 6 and 3 inch segments. The Pipe contained black oily liquid.
- Pipe T is a terra cotta pipe that angled towards the south wall of the basin from the area of the main. It was determined that this pipe originated from within a brick drop box constructed adjacent to Feature G. This pipe conveyed black material and was removed.
- Pipe U is a pipe which is the exit pipe from the deep end of the concrete basin. This pipe headed westerly from the basin and towards Stoney Creek. Pipe U ended with a metal plug insertion.
- Pipe V is a 6 inch pipe which threaded to a 3 inch pipe along the southern wall of the basin. It heads westerly towards Stoney Creek. The OSC is not sure where this pipe originates, but it is believed to have been part of Q or S. Another 6 inch pipe segment was also found running along the southern edge of the basin. The pipe transitioned to a 3 inch pipe and continued westward alongside pipe P.

The floor of the deep (northern) portion of the concrete basin was broken in order to remove the pipes (two 6" steel pipes labeled C1 and C2) and the oily material therein running under the basin and westerly. Water which had accumulated in the basin and some remaining oily sludge was first removed. A hole penetrating the eastern wall of the basin was found connecting to a concrete channel containing more black oily sludge. The oily sludge was removed and solidified. The western wall of the basin was found to have a hole from which another pipe ("U") headed westward toward Stoney Creek.

Pipes “C1” and “C2” were located and their removal commenced east to west while the floor of the concrete basin was broken. After removal of the pipes, the pieces of the basin floor were placed back into the basin’s footprint and the area was backfilled.

as of February 22, 2014

AVAILABLE ANALYTICAL

- Sludge/solids from within a 15” concrete pipe found in Grid 37. Among other things the following were found:

PCBs – 270 mg/kg (aroclor 1248)
DEHP – 26 mg/kg
Toluene – 2 mg/kg
Xylenes – 58 mg/kg
TCB – 8.1 mg/kg
DCB – 3.4 mg/kg
Various methylbenzene compounds – 7 to 45 mg/kg
Biphenyl – 13 mg/kg
PAHs (e.g., B(a)P – 2.2 mg/kg)

- Sludge/solids from within the outfall of the 18” terracotta pipe in Grid 36

PCBs – 96 mg/kg (aroclor 1260)
DEHP 5 mg/kg
PAHs

- Sludge/solids from within the steel pipe running from the rock-walled tank in Grid 34 to the junction in Grid 39

PCBs – 8 mg/kg (aroclor 1254)
Biphenyl – 0.85 mg/kg
DEHP – 3.2 mg/kg
Diphenyl ether – 4.3 mg/kg
PAHs

- Sludge/solids from within the steel pipe running from the area of the main building to the junction in Grid 39

PCBs – 4.8 mg/kg (aroclors 1254 and 260)
DEHP – 3.6 mg/kg
PAHs

The piping systems associated with the concrete basin (cooling tower or Feature D), and some surrounding soils, continued to be removed. Additional pipes were found west of the concrete

basin (between the basin and Stoney Creek). As the pipe removal activity neared Stoney Creek (and the location of the surmised original outlet for drainage and liquids from the Site (based upon evaluation of aerial photographs and the fact that several pipes were heading to the same general spot along the Creek)), the amount of water in the excavations was large and limiting for an efficient evaluation of the pipe systems.

Key pipes relating to excavation activities west of the concrete basin include the following:

- Pipe U – this pipe was the exit from the deep (northern) portion of the concrete basin. Pipe U contained flange-style connections, headed westerly, and terminated at a male-threaded plug. Brown NAPL was associated with Pipe U.
- Pipe C1 and C2 – these pipes were excavated for approximately 100 feet westerly of the basin and towards Stoney Creek. Pipe U was alongside. The excavations were terminated when the pipes simply ended. Dark brown to black, thick NAPL was present in the pipes. Pipes C1 and C2 were located 2 to 4 feet south of Pipe U, and were observed to terminate in no particular joint or feature.
- Pipe P was located along the southern wall of the basin. The Pipe ran westward in an excavation for approximately 100 feet toward Stoney Creek. At the western limits of Feature D, the pipe was found cemented into a concrete and brick headwall. The pipe terminated to the west at the buried concrete sump feature (Feature H in Grid 17). To the west of the concrete basin, Pipe P was comprised of cast iron bell and spigot sections. Oily material was present within the pipe.
- Fragments of a terra cotta pipe were observed in the excavation dug during the removal of Pipe P. A 6-inch terra cotta pipe was observed during the initial inspection of the concrete sump feature in Grid 17. It is unknown whether the 6-inch terra cotta pipe, the pipe fragments, and Pipe T (see above) are part of the same pipe system.
- A 6-inch metal pipe trending east-west was observed in the western 40 feet of the southern wall of the excavation dug during the removal of Pipe P. The pipe broke easily during removal and was disintegrated in places on the bottom of the pipe. The exposed portion of the pipe contained three 45-degree elbow joint pairs that served to incrementally advance the pipe northward (the elbow joints were connected to each other in sets of two, with the pairs spaced about 10 feet apart). The pipe appeared to connect to Feature H at its western end. It is believed that this pipe section is a portion of Pipe S.
- Pipes W1 and W2 are north-south trending pipes identified in the western portion of the excavation that contained Pipes U, C1, and C2. Both pipes were metal pipes 4 inches in diameter. The pipes aligned parallel to one another, spaced about 2 feet apart, and were about 5 feet below the current ground surface. The pipes were located about 60 feet west of the western wall of the concrete basin. The pipes crossed over Pipes U, C1, and C2. Pipes W1 and W2 appeared to connect to the concrete sump feature in Grid 17. The pipes were not identified north of the excavation containing Pipes U, C1, and C2.

- Pipe DD1 is a 4-inch cast iron pipe trending east-west approximately from the central portion of the western wall of the concrete basin westward for approximately 50 feet. The pipe is located about 5 feet below ground surface. The eastern fate of the pipe is unknown, but may have been connected to the shallow end of the concrete basin. At the western end of the pipe is a flanged double joint that contains a 90-degree bend and a 22.5-degree bend. The bends are on the same side of the joint and are oriented in the same plane; however, the orientation of the pipe joint as it existed in the ground is unknown.

The concrete sump feature (Feature H and the point at which several pipe systems seemed to terminate), was removed. The 4 x 4 – foot sump was about 4 feet deep. The walls were constructed of 6-inch concrete. The top of the walls were about 3 feet below the current ground surface. A competent concrete floor was present. The walls of the feature were broken into pieces and used to backfill a portion of the excavation. A piece of metal pipe with what appeared to be a gas regulator was found near the sump.

Dewatering operations were conducted as needed in order to facilitate the removal of pipe systems / drainage features. Water in excavations that contained NAPL was pumped to a 20,000-gallon temporary holding tank. Water in excavations that did not contain NAPL and otherwise appeared clean was pumped to a temporary holding area adjacent to the excavation and allowed to infiltrate back to the subsurface. During the excavation west of the basin (cooling tower or Feature D), the influx of water greatly limited the ability to thoroughly identify potential pipes and features in the deeper portions of the excavations. It is possible that pieces of pipe systems remain.

The area and excavations around Feature D began to be backfilled. Levels below the water table were backfilled with crushed stone. Soil that contained neither PCBs greater than or equal to 25 ppm, NAPL, or obvious staining was used to fill some portions of the excavations above the water table. Imported clean soils were then used to fill the excavations to a depth of about 1 foot below the former ground level, and crushed stone was used to raise the restored area to the former ground level. The backfill was then compacted and rolled. Clean fill arrived routinely throughout the remainder of the Action and a similar backfill process was followed.

Site work was not conducted on February 13 due to heavy snowfall (about 14 inches). In advance of the event, ERRS personnel covered soil piles stages for disposal, clean soil piles, and crushed stone piles. Site work was not conducted on Monday, February 17 due to the Presidents' Day federal holiday.

The current phase of pipe system excavations was completed on February 18.

A swale was re-established (it was disturbed during excavation activities) to direct overland flow from the asphalt area near the main building toward Stoney Creek. A swale was created to a depth of approximately 1 to 2 feet near and parallel to the southern limit of the excavations associated with Feature D, lined with plastic, and filled with stone. A silt fence was placed on

the western end of the swale near the tree line alongside Stoney Creek.

The off-site transportation and disposal of non-hazardous (non-TSCA regulated) soils began on February 20. The soils were transported to Republic Conestoga Landfill in Morgantown, Pennsylvania. The following was transported:

- February 20, 210.61 tons
- February 21, 212.93 tons

as of March 1, 2014

The process of clearing/grubbing vegetation in the northern areas of the Site to support drum excavation operations was begun in Grid 1. These types of activities continued in advance of excavation activities as needed for the remainder of the drum area excavation activities.

Between February 24 and 28, 116 truckloads of non-hazardous (non-TSCA regulated) soils were transported. The following was transported:

- February 24, 504.84 tons
- February 25, 697.10 tons
- February 26, 657.22 tons
- February 27, 486.18 tons
- February 28, 232.03 tons

The majority of non-TSCA-regulated waste staged to date during the Removal Action has been shipped off site. The total thus far is approximately 3,000.91 tons in 136 truckloads. It is anticipated additional non-TSCA-regulated wastes will be generated during future activities as part of the Removal Action.

Eight soil samples were collected from five excavations in the northwestern corner of the property to further delineate the western extent of PCBs contamination in soil. The samples were collected from various intervals in excavations dug in Grids 1W (west), 3W, 5W, 8W, and 12W. All detections for PCBs were less than 1 mg/kg with the exception of an area west of Grid 12 which had a low PCB detection of 2 mg/kg (aroclor 1260) at a depth of 5-6 feet.

as of March 9, 2014

On Monday, 3/3/14, the Site was shut down due to a forecasted 12+ inches of snow, however only 3 inches of snow actually accumulated.

This week excavations began in the suspected drum burial area. The suspected drum burial area is identified from previously conducted EM-61 geophysical survey data, test pit data, Geoprobe boring data, historic aerial imagery, and other means. Aerial photographs from the early 1960s through late 1980s suggest the northwestern portion of the property may have been incrementally backfilled from southeast to northwest with soil and debris that included but was not limited to

drums, drum remains/contents, drum carcasses, or other containers (hereafter, collectively referenced as “drums”).

Where excavations for suspected drums was determined to be necessary based on this information, the entire disturbed soil profile was inspected for the presence of drums down to an olive-gray to dark brown-colored silty clay layer believed to represent the uppermost native (undisturbed) subsurface deposits at most areas of the Site (about 7 to 10 feet bgs in the northwestern area of the Site). In some areas, particularly in the vicinity of Stoney Creek, a black silty clay with abundant roots was present. The drums were removed along with visually contaminated soils in the immediately vicinity that appeared to be impacted by releases from the drums, and were staged for characterization and disposal. After removal, the remaining soils were used to backfill the excavation.

Excavation began in Grids 41, 2 and the eastern half of Grid 1. They were excavated down to the native layer. The drums or drum remains / contents encountered were removed along with soils impacted by discovered drums, drum remains, or contents. After removal, the remaining soils were used to backfill the excavation. The following exemplifies the conditions:

- Grid 41 contained several buried steel 55gallon drum carcasses in deteriorated condition. The contents in many of the drums appeared to be dried paint-like material containing multiple thin, multi-colored, stratified layers. Also encountered were an abundant amount of old truck tires and rims, bricks, metal debris, drum bungs, bung gaskets, cement blocks, wood and other debris. The drums and surrounding soils were removed and stockpiled for future characterization, and the truck tires were also removed to facilitate the subsequent backfill process. Remaining soil and debris was used for backfill – this process continued on all other areas.
- Grid 2 contained several buried steel 55gallon drum carcasses in deteriorated condition.
- The eastern half of Grid 1 was excavated down to a depth of 7.5ft bgs. Very little evidence of buried drums was found in grid 1 and it was determined to not advance to the western half of Grid 1 due to limited likelihood of buried drums in this area.

A hydraulic shear was mobilized to the Site and utilized to cut staged metal pipes to support future offsite transportation and disposal. The 15” diameter steel pipe originating from the main building was segregated to be disposed of as TSCA-regulated waste due to elevated PCBs concentrations found within.

On 3/6/14, soil samples were collected in Grid 6 of fly ash-like material, buried from 1.5 feet to 4 feet below ground surface, for TCLP metals and PCB Aroclors analysis. The stained soil layer underneath the fly ash was also sampled for PCB analysis. Nothing remarkable was noted.

Based upon the discovery of drums in the excavated grids and the expectation of additional drums, a staging area for drum remains (and associated soil) was constructed using existing waste soils and covered by plastic.

as of March 15, 2014

Excavation activities continued in the suspected drum burial area within Grids 3, 3W (small portion west of Grid 3), 4, and 7. Partial sections of Grids 5 and 6 were included.

Two areas of soil expected to contain PCBs above 50 ppm were first targeted for removal:

1. approximately 4,500 cubic feet of soil were removed from an area in the southwestern portion of Grid 3 and overlapping Grids 3W, 5, and 6. Soils in a 30-foot by 30-foot area centered at 2005 sample location 05-MET-129 and extending from 5 to 10 feet bgs were removed and staged for disposal. A total PCB concentration of 1,300 ppm was reported in a sample collected from 5 to 6 feet bgs in boring 05-MET-129. The material reported from 5 to 6 feet at the location of 05-MET-129 was found to extend to a depth of 10 feet in the current excavations.
2. approximately 7,200 cubic feet of soil were removed from the southern half of Grid 4 and northern half of Grid 7. Soils in a 60-foot by 60-foot area centered at EPA sample location TP-04 and extending from the surface to a depth of 2 feet bgs were removed and staged for disposal. A total PCB concentration of 83 ppm was reported in a sample collected from 0-2 feet bgs in excavation TP-04.

as of March 23, 2014

Excavations continued in Grids 7, 43, and the southwest portion of Grid 45.

Grid 7 was excavated in two phases (northern half and southern half). Excavations reached down to 7 ft bgs, and contained several steel 55gallon drum carcasses in deteriorated condition. The contents in many of the drums appeared to be dried paint-like material containing multiple thin, multi-colored, stratified layers. Also encountered were many old rubber truck tire inner tubes and other debris. On the southern half of Grid 7, groundwater was encountered below the debris at 6.5 ft bgs. The groundwater had an oily sheen. The drums and surrounding soils were removed and stockpiled for future characterization. The rubber truck tire inner tubes were also removed and staged separately to facilitate the backfill process.

Grid 43 was also excavated in two phases; the northern half and the southern half. Excavations reached down to 7 ft bgs, and contained numerous steel 55 gallon drum carcasses, and other drum parts such as bungs and gaskets in deteriorated condition. The drums and surrounding soils were removed and stockpiled for future characterization. The rubber truck tire inner tubes were also removed to facilitate the backfill process.

The southwestern edge of Grid 45 had the possibility of buried drums based on EM-61 geophysical data. Excavating of Grid 45 began in the southwest. Drums and drum remains were

only found on the southwestern most edge of Grid 45 at 6.5 ft bgs. The excavation was advanced to include the entire southwestern quarter of Grid 45, but very little evidence of buried drums were found in the easterly direction – as such, it was determined to not advance to the eastern portion of Grid 45 due to limited likelihood of buried drums in this area.

West of grid 5, a 30 x 30 foot area was excavated surrounding Geoprobe point 5 West (Weston, 2014), known to contain elevated levels of PCBs (250 ppm). Within the depth interval of 0 to 6 feet below ground surface (bgs), drums, pieces of drums, rubber strips, tire inner tubes and impacted soils were removed and staged. A soil sample was collected of a stained soil matrix found intermixed with rubber strips and tire inner tubes for PCB Aroclor analysis; the result indicated PCBs less than 1 mg/kg (suggesting that the rubber tire scraps were not the source of PCBs). At a depth of approximately 5-6 ft bgs, a 55 gallon steel drum remnant was discovered containing a blue-green semi-solid material, also discovered what was believed to be a fiber drum containing a cream colored material resembling dried paint. The soil, and drums and other drum contents within the depth interval of 6 to 8 feet bgs, were placed in the TSCA pile for future offsite disposal. The excavation was backfilled with remaining soils from the 0-6 ft bgs interval.

An approximately 30 x 30 foot area was excavated surrounding Geoprobe point 72 (MWH, 2005), known to contain elevated levels of PCBs (756 ppm). Within the depth interval of 0 to 5 feet below ground surface (bgs), drums, pieces of drums and impacted soils were removed and staged. The soil, and drums and drum contents within the depth interval of 5 to 7 feet bgs, were placed into the TSCA pile for future offsite disposal. The excavation was backfilled with remaining soils from the 0-5ft bgs interval.

After removal of the area surrounding Geoprobe point 5 West and Geoprobe point 72, the western half of grid 5 was excavated down to the native soil layer (8 feet bgs) removing encountered drums and drum pieces. After removal, the soils suitable for fill were used to backfill the excavation.

as of March 29, 2014

Significant quantities of rubber truck inner tubes and pieces of rubber were present in the majority of excavations. The rubber was present in homogeneous layers from 2 to 3 feet thick. This material was removed in order to facilitate backfill operations and the removal of nearby drums and nearby impacted soils. The rubber was staged in a separate pile for future characterization and disposal. The work during this period was conducted primarily in Grids 5 and 6, and minor portions of Grids 8 and 9:

- The remaining eastern area of Grid 5 was excavated to 12 feet bgs (the western area of Grid 5 was excavated last week). At a depth of 10 to 12 feet bgs, several buried steel 55-gallon drum carcasses in deteriorated condition were removed. The contents in many of the drums had a strong solvent-like odor. Rubber strips and truck tire inner tubes and other debris were observed between 7.5 to 10 feet bgs.

- Grid 6 was excavated to 7.5 or 8 feet bgs, and contained several steel 55-gallon drum carcasses and drum parts such as bungs and bung gaskets in deteriorated condition. The drums contained a thick red clay-like residue that had a strong solvent odor. Also encountered were large amounts of metal debris, wood, rubber strips and rubber tire inner tubes. The drums and surrounding soils were removed and stockpiled for future characterization, and the rubber was also removed to facilitate the backfill process. Ground water, which had a black sheen, was first encountered around 6 feet bgs.

as of April 5, 2014

Excavation activities continued in Grid 8. Drums and soil in a portion of Grid 8 centered at 2005 location 05-MET-075 (collected from a depth of 3.75 to 4.25 feet bgs) were removed and staged for future disposal as TSCA-regulated soil. The total PCB concentrations at this location were detected at 744 ppm. The soils from which the sample was collected were comprised primarily of a black sandy silt with construction debris and other waste, which was found from approximately 3.5 to 8 feet bgs in Grid 8. Ground water was encountered at 7 feet bgs, and had a strong sulfur and petroleum odor. NAPL was also present. The remainder of Grid 8 was also excavated down to 8 feet bgs. Numerous steel 55-gallon drum carcasses were found. Additionally, large amounts of bricks and other construction debris, wood, rubber strips, dried paint-like material and rubber tire inner tubes were identified in the excavations. The drums and surrounding soils along with soils containing NAPL were removed and stockpiled for future characterization. The rubber was removed to facilitate the backfill process.

The remaining section of the 12" green PVC Pipe which outfalls to Stoney Creek (located in the Creek bank) was removed.

ERRS began the off-site disposal of TSCA-regulated PCB remediation waste generated during the pipe removal phase of operations. The disposal was accomplished using intermodal containers transported from the Site to a railroad facility in Hainesport, New Jersey to then be transferred onto railcars for transport to Indiana, where the intermodal containers will then be transported to the final disposal landfill facility (Heritage Environmental Services) located in Roachdale, Indiana. The following disposal occurred:

- 4/2/14, 16 intermodal containers with an estimated weight of 401.73 tons
- 4/3/14, 16 intermodal containers with an estimated weight of 361.11 tons
- 4/4/14, 14 intermodal containers with an estimated weight of 311.38 tons

as of April 12, 2014

Continued excavating in Grid 9. Drums and soil in the southeastern quadrant of Grid 9, centered at START direct-push sample location MC-SO09-0-2 (collected from a depth of the surface to 2 feet bgs), was excavated and staged as TSCA-regulated waste. The total PCB concentration in this sample was 73 ppm. The remainder of the grid was divided into quadrants and investigated for the presence of buried drums. At approximately 7 feet bgs, a 4-inch layer of stone overlying landscaping fabric was present in the eastern half of the grid. The stone and fabric may have

been associated with installation of the existing storm sewer system. Soils in all grids were locally stained black and had a petroleum odor. The excavation depth was 7 to 8 feet bgs. Findings in the four quadrants were as follows:

- No drums and only minimal debris in the northeastern quadrant.
- The northwestern quadrant had numerous drums and the strongest petroleum odor.
- No drums and minimal debris in the southwestern quadrant.
- No drums and minimal debris in the southeastern quadrant. A white fine crystalline solid was found approximately 2 to 3 feet bgs below the soils excavated as TSCA-regulated wastes. (approximately 3 cubic yards of the white material was removed)

The off-site disposal of TSCA-regulated soils continued. The following was disposed:

- 4/7/14, 16 intermodal containers with an estimated weight of 374.79 tons.
- 4/8/14, 16 intermodal containers with an estimated weight of 380.5 tons.

A small area in Grid 12 was cleared and grubbed in preparation for evaluation for the presence of pipe systems. This area, located between the southern boundaries of Grid 12 north to the former location of the green PVC pipe outfall had not been previously investigated. While excavating a 25-foot-long north-south trench in the center of Grid 12, a 55-gallon drum full of an oily liquid was unearthed and ruptured. The drum and underlying soils were removed. The excavation was subsequently expanded to the west, where the following drums were found: one 55-gallon drum full of an oily substance, one 55-gallon drum full of grease, one 40-gallon drum half full of an oily substance. Parts of approximately 12 crushed drums and containers containing a minor amount of oil-like substances were found both east and west of the initial trench.

The following pipes were identified in and near Grid 12 (the OSC believes these pipes were disposed/buried at this location and are not component to a pipe system):

- Six to 12 1.5-inch iron pipes in the south-central part of Grid 12. The pipes were generally oriented parallel to Stoney Creek and buried 5 to 7 feet below the ground surface. Various malleable iron joints or fittings were observed. The source or destination of the pipes and possible connection to one another is unknown. Some of the pipes were degraded or filled with sludge.
- Two 2-inch iron pipes oriented north-south and buried 5 to 7 feet below the ground surface were found in the southeastern part of Grid 12. The pipes were spaced approximately 3 to 5 feet apart and were believed to be the northernmost representation of Pipes W1 and W2.

In order to address erosion found to occur in the drainage swale, it was expanded and extended westward then filled with riprap.

as of April 19, 2014

Excavation activity occurred within Grid 10. Excavation was centered on 2005 geoprobe sample

location 05-MET-001 (PCB concentration 80 mg/kg). The encountered soils consisted primarily of black silt along with construction debris and other waste, including the remains of drums, generally between approximately 3 to 7.5 feet bgs. An estimated 210 tons of soil with drum remains were removed and staged as TSCA-regulated waste.

The remainder of Grid 10, considered non-PCBs-contaminated, was excavated to remove buried drums and adjacent soils that appeared to be impacted by the drum contents. Ground water was encountered with an oily sheen and NAPL at approximately 7 feet bgs. A sweet chemical odor, petroleum odors, and hydrogen sulfide odor were present in the excavations. VOC readings as high as 15 ppm were recorded.

Site work was suspended approximately half way through the day on April 15 due to heavy, consistent rainfall. Staged wastes and fill materials were covered.

The ERRS contractor assisted the EPA RPM in locating a metal outfall pipe along the banks of Stoney Creek (initially and generally identified in a 1990 investigation). An excavator was used to probe the surface material along the bank of Stoney Creek from a point approximately 20 feet north of the rectangular concrete basin to a point approximately 30 feet south of this basin. The Creek bank appears to be comprised of an equal mixture of soil and construction debris, including but not limited to sections of concrete and brick as large as 5 feet square, individual bricks, detached pipe sections, fencing, lumber/timber, and miscellaneous metal scrap. The suspected pipe was not found, but a seep discharging black NAPL was observed at the base of the Creek bank near the southern limits of the investigated area. Distressed vegetation and heavily stained soil was observed from the area of the seep towards the Creek.

The off-site transportation of TSCA-regulated PCB remediation waste continued. The following was transported:

- On 4/16/14, 16 intermodal containers with an estimated weight of 370.48 tons.
- On 4/17/14, 16 intermodal containers with an estimated weight of 375.27tons.
- On 4/18/14, 13 intermodal containers with an estimated weight of 327.94 tons.

Disposal characterization samples from water in two 21,000-gallon steel water storage tanks were collected. The water resulted from dewatering during certain excavation activities. In addition, a composite solid sample from the non-TSCA staged materials, comprised primarily of drums and soils generated from the northwestern portion of the Site, was collected for analysis.

as of April 25, 2014

Excavations were completed in the suspected drum burial area. Grids 11, 44 and 47 were excavated. The following was noted:

- Grid 11: The eastern portion of Grid 11 contained a 2' layer of ash followed by a layer of glass bottles. The southern and western portions were unremarkable; few drum carcasses were encountered and no ash, pipes, or glass bottles were

encountered. The northern portion of Grid 11 contained very black soil with large amounts/pieces of lumber and concrete. A small terracotta pipe was discovered 7' bgs, presumed to be an old site runoff drainage pipe, and removed. The pipe was traced into Grid 47.

- Grid 44: The western and southern portions of Grid 44 were excavated. Groundwater was not encountered. Many drum pieces and lids were encountered.
- Grid 47: Only the western portion of Grid 47 was excavated. Pieces of a terracotta pipe were found in the westernmost corner but pipe was not found. Black soil was encountered from 2-5 feet bgs with scattered drum parts. Clay was encountered at 5 feet bgs.

A pit in Grid 48 was dug to determine if buried drum remains exist in this area based upon a small anomaly. Nothing was observed and no further excavation occurred.

ERRS assisted the EPA OSC to locate and remove a pipe suspected along the western edge of the Site near the southern edge of Grid 21. A pipe had been reportedly observed near this location in the 1990s. A seep was previously observed along the bank of Stoney Creek in this area. Excavating at the southern boundary of Grid 21 and adjacent to the location of the seep, a square metal pipe (Pipe MM) was identified at a depth of approximately 10' bgs. This pipe contained oily liquids and, based upon the exposed segment, would run towards the northern limits of the former facility. 24 feet of this pipe were removed from Grid 21 and staged for disposal. Additional segments could not be removed eastward due to the presence of the owners materials staged on the Site. To the west, the square pipe disappeared and a 6" diameter metal pipe was found in the sidewall of the excavation, running presumably to Stoney Creek. The 6" diameter circular pipe was pulled out of the bank (an additional segment may exist eastward but was not further investigated due to the proximity to Stoney Creek).

Excavations along the south wall at the southwestern corner of the main building were conducted to locate and removed pipes at this location suspected to be connected into the drainage system removed in December 2013. A 6" diameter terracotta pipe (Pipe EE)(2.5' bgs) and 3" diameter metal pipe (Pipe GG)(approx. 7' bgs) and 2" diameter metal pipe (Pipe FF)(6' bgs) were found. The pipes generally ran parallel with the building. The terracotta pipe contained black and brown layered sludgy material. The 3" diameter steel pipe was compromised in several locations and contained oily water. The 2" pipe was degraded. The exposed segments were removed and staged. The groundwater in the excavation was covered with oily liquid.

as of May 2, 2014

On April 29, 2014, EPA obligated an additional \$600,000 to the ERRS project ceiling.

Excavations continued along the south wall of the main building. A steel grate was found buried beneath 3 ft of fill material along the wall and north of the 6" terra cotta pipe (EE). The steel grate was covering a 3.5ft x 3.5ft x 4 ft deep concrete drop box. A 15" diameter terra cotta pipe exited the drop box and ran westerly into Grid 40. The 15" pipe had a wye connection about 28 feet to the west and then continued straight through Grid 40 in a westerly direction. The 15"terra

cotta pipe ran through grid 40 and is believed to be the same 18" terra cotta pipe removed in December 2013 that entered Stoney Creek at an outfall structure. The section of pipe between the drop box and wye was fairly clean. The section of the pipe west of the wye contained black oily material. The 15" terra cotta pipe and surrounding soils were removed.

The wye connection immediately entered into a buried brick box about 3' x 4' wide located just to the north of the 15" terra cotta pipe. The box (from which the wye exited) contained 3 pipes.

- A 6" diameter terra cotta pipe on the east side of the box which traveled east six linear feet at an upward slope before terminating at a 90 degree upward bend; this pipe contained black oily sludge and was removed.
- A 4" diameter terra cotta pipe was positioned at the north end of the brick lined box traveling generally north with several 90 degree bends, before ending; this pipe contained what appeared simply to be dirt.
- An 8" diameter terra cotta pipe was found in the southwest corner of the box which then travelled westerly paralleling the 15" terra cotta pipe mentioned earlier. The 8" pipe was full of oily sludge. This pipe was also bricked shut at the aforementioned 3"x4" brick box. The 8" terra cotta pipe and surrounding soils were removed and staged for disposal.

The 6" diameter terracotta pipe (Pipe EE) was removed westward. The pipe contained a black sludge-like layer covered by a thin layer of viscous tan-colored material. The pipe angled to the north just past the buried 3' x 4' brick box and then entered into a concrete gutter drain system that was found with a railroad tie and gasket material wedged within so as to block the end of the pipe. The layered sludge material was sampled (analytical below).

Groundwater entering the pipe excavations at the southwest corner of the main building contained dark brown NAPL that was pumped into Frac Tank #3.

Several small diameter pipes were found near the southwest corner of the main building and removed. During removal, oily brown and black soils were found surrounding these pipes. This soil was removed and staged. Found were a 3" steel pipe and, in Grid 40, a ½", 1" and 2" white schedule 40 pvc pipe bundle was discovered buried ½ foot bgs traveling east-west and entering the main building. A 18 ft length of 2" diameter steel pipe found with 1 " diameter grey schedule 80 PVC pipe inside of the steel was also found in this area and removed.

Disposal of non-TSCA regulated was continued. Transported to Conestoga Landfill located in Morgantown, Pennsylvania were:

- On 4/29/14, three truckloads with an estimated weight of 75.91 tons.
- On 4/30/14, three truckloads with an estimated weight of 76.85 tons.
- On 5/1/14, three truckloads with an estimated weight of 72.24 tons.
- On 5/2/14, three truckloads with an estimated weight of 73.06 tons.

as of May 17, 2014

AVAILABLE ANALYTICAL

- Solids within a 6" diameter terra cotta pipe heading westward from the SW corner of the main building collected 4/28/14: DEHP- 87 mg/kg and low levels of chlorinated organic compounds and BTEX compounds.

Soils surrounding Geoprobe point 109 (2005, MWH) with elevated PCB levels (365 mg/kg) were excavated down to native clay layer (8 ft bgs) and placed in TSCA staging area.

Soils surrounding Geoprobe point 104 (2005, MWH) with elevated PCB levels (270 mg/kg) were removed down to 2.5ft bgs. All soils were placed in TSCA stockpile awaiting offsite disposal. Groundwater with thick brown NAPL was encountered at 3.5 ft bgs, groundwater entering in the excavation was pumped into frac tank #3.

As requested by the OSC, ERRs installed two temporary "wells" along the western wall of the former drum recycling building. The wells are positioned near the head/invert of a pipe that originated near the trenches cut into the building floor and discharged into a sump/separator. The wells were installed to allow the OSC to evaluate if NAPL and other product is leaching out from under the building. The OSC noted a large amount of NAPL in this area. Total depth of wells is about 5-6 ft bgs. [Note – these were later destroyed during excavations to remove pipe systems discovered along the western edge of the building]

Grid 35 adjacent to the main building was excavated. This area was not previously accomplished since the equipment of the property owner was present. Such equipment was now re-located to the northern limits of the building. Numerous pipe systems were discovered.

A 4" terra cotta pipe (NN) exited from under the main building just north of the point where the floor trench system exited the building. The contents of pipe NN were initially a yellow powdery substance but quickly turned to a brown oily material which was approximately 50% solid and 50% liquid. The sample jars contained roughly 50% solid and 50% liquid. A sample was collected (analytical below).

Pipe NN headed westerly, but its destination could not be determined. Instead, a buried drop box (Feature L) was found west of Pipe NN. Exiting the drop box was a 12" terra cotta pipe (Pipe QQ). This pipe was about 4.5' bgs and ran westerly. The pipe was uncovered and removed until it ended near the western limits of Grid 34. The pipe ended abruptly and appeared smashed. The pipe ended in the vicinity of EPA-conducted PCB excavations surrounding geoprobe point 106. The pipe contained black oily liquid and solids.

During removal of the 12" terra cotta pipe leading westerly from the main building, a section of 18" concrete pipe was found. This pipe did not appear to continue much in any direction (appeared filled with dirt) and was not further uncovered. It was estimated that this pipe may have run roughly parallel to the main building.

Entering the above-mentioned buried drop box (Feature L) from the north was a terra cotta pipe (Pipe PP). This pipe headed northerly towards the northwestern corner of the main building (current sandblasting building). This pipe was filled with black sludgy material. The excavation/removal did not proceed in front of the entrance to the sandblasting room (in order to not block the owners operations) and this pipe was cemented shut pending future coordination with the property owner.

The flanged ends of 2 steel pipes (OO and SS) were found at the edge of the main building associated with a concrete structure (Feature K). These pipes paralleled the building and then dipped downwards and westerly into a concrete trench under the buried railroad siding. These pipes crossed under the railroad siding near to the location of what appeared to be a switch or turnout. The pipes travelled westward, then up, and then northward. After becoming very deteriorated, they could not be found. Based upon aerial photography, it is believed these pipes may have surfaced at the location of what may have been a pipe rack alongside the tracks or rectangular concrete basin. These pipes were removed. A sample of oily brown water that entered the excavation in Grid 35 was collected while removing Pipes OO and SS (analytical below). In the excavation and below the pipes, the OSC found a layer of structural lumber (e.g., planks). This lumber was lined up as if to make a walkway and existed immediately atop a layer of black and heavily oiled soil.

Previously, a tank constructed of stack rocks and a concrete lid was found in Grid 34 (Feature O). The eastern wall of the rock-walled tank was constructed of concrete and had a hole penetration implying an eastward expansion. The eastward expansion was in Grid 35. The lid of the tank was removed and liquid from what was a concrete chamber was pumped into a frac tank. Under the liquid was a thick black sludge with a floating oily layer. There was a sulfur odor and possibly a septic odor. The sludge was stabilized using cement and removed for offsite disposal. The concrete lid had an 18" diameter hole in its center flanked by two 4" diameter holes. The eastern wall of the concrete tank had a 4" diameter metal pipe segment that headed towards the main building. The western wall contained a 4" diameter penetration that directly entered the adjacent rock-walled structure removed in December 2013.

An 8" diameter metal pipe was removed. This pipe began in Grid 40 at a valve, and traveled in a north-south direction through Grid 35 and then bending into Grid 30. The pipe was not further removed after the OSC concluded that it was likely from a historic water distribution system (and likely the extension of Pipe L).

While removing the 8" diameter metal pipe, a thick layer of dense black brittle material was encountered near to the above-mentioned concrete tank and about 5 feet below the ground surface. When broken, viscous tar-like black material was found within. The OSC collected a sample of this black tarry material for analysis (analytical below). This sample was subjected to a headspace field screening, which registered VOC readings above the maximum limits of the PID instrument (3,000 ppm).

The square metal pipe (Pipe MM) previously found beginning at the Creek bank was uncovered and removed from Grid 27 eastward through Grids 28, 29 and 30. The square pipe which slopes

downward to the west was highly deteriorated, corroded completely through in places and filled with black oily solids with a strong sulfur odor. The pipe continued eastward from Grid 30 under the equipment of the owner. It was removed to the edge of the building and then cemented and left in place, to be addressed later. A number of small diameter plastic pipes (all 4" or less) were encountered while removing the square pipe – the OSC believes these pipes originally conveyed wastes into the rectangular concrete basin (most of the lengths of these pipes from the buildings towards the concrete basin were previously removed). Several drum carcasses and drum parts such as lids, bungs and gaskets were also encountered.

Under the square metal pipe (MM) in Grids 29 and 30 was a layer of square terra cotta pipe/tile. The amount of water in the excavation prevented additional investigation. The OSC believes these tiles may simply have originally allowed dewatering or construction of the area as they were not connected in conduit fashion.

Off-Site transportation of non-TSCA regulated debris continued as follows:

- On 5/4/14, 3 truckloads with an estimated weight of 65.35 tons.
- On 5/5/14, 3 truckloads with an estimated weight of 74.26 tons.
- On 5/6/14, 3 truckloads with an estimated weight of 67.81 tons.
- On 5/7/14, 5 truckloads with an estimated weight of 107.75 tons.
- On 5/8/14, 2 truckloads with an estimated weight of 53.94 tons.
- On 5/13/14, 23 truckloads with an estimated weight of 517.5 tons.
- On 5/14/14, 22 truckloads with an estimated weight of 495 tons.
- On 5/15/14, 14 truckloads with an estimated weight of 315 tons.

The disposal of wastewater pumped from excavations and collected in temporary tanks (Frac Tanks) was begun. The water will be disposed of as non-TSCA regulated wastewater at Environmental Recovery Corporation in Lancaster, Pennsylvania.

- Frac Tank #1 - Three tanker loads emptied the tank leaving a thin layer of sludge to be removed later. The loads were: 6,100 gallons, 6,050 gallons, and 4,920 gallons for a total of 17,070 gallons removed from Frac Tank #1.
- Frac Tank #2 - Three tanker loads emptied the tank leaving a thin layer of sludge to be removed later. The loads were 6,100 gallons, 5,760 gallons, and 3,682 gallons for a total of 15,542 gallons removed from Frac Tank #2.

Sand and debris was removed from portions of the main building and trench system to support pending additional removal site evaluation efforts.

A. Routine air monitoring indicated exceedance of the particulate action level multiple times due to the proximity of the excavation area to the sandblasting operations.

as of June 7, 2014

AVAILABLE ANALYTICAL

- Pipe NN: this pipe was sampled May 6. The results indicate elevated concentrations of chlorinated compounds (e.g., DCB – 30 mg/kg and PCE 33 mg/kg), BTEX compounds (toluene 290 mg/kg) and PCBs (89 mg/kg of aroclors 1260 and 1248)
- Black Tarry Material – this sample was collected May 13th from within a layer of brittle black material about 5 feet below ground surface in Grid 34. Detected were Carbon Disulfide (42,000 mg/kg), and elevated concentrations of PAHs (e.g., benzo(a)pyrene – 430 mg/kg)
- Oily liquids from Grid 35 – this liquid was collected May 13th from an oily layer associated with the removal of Pipes SS and OO (a layer of wood planking was found above a heavily oiled layer of soil in the excavation). Detected were Carbon Disulfide (6.9 ug/l), PCBs (15 ug/l) and low levels of phenolic compounds and PAHs

Excavation activities relating to the concrete pipe previously found in Grid 37 were re-initiated. This pipe had been removed from Grid 37 to its westerly limit. The pipe was approximately 5.5ft bgs, and paralleled the fenceline. Travelling east, the pipe entered a buried 4' x 4' brick-lined box, turned approximately 45 degrees, exited the brick box, and traveled northeasterly towards the main building. The pipe ended in an area of good quality clay unlike surrounding material indicating previous excavation and removal activity in the area. The pipe and its contents were removed. The content was oily black solids. An approximate 10-foot section under a sand tank was not removed.

Adjacent to the 4x4 brick lined box mentioned above and on its southern side, several sections of terra cotta pipe were found. A portion was connected into the foundations of the 4x4 brick-lined box. Most sections were found crushed and discontinuous. The OSC surmised these pieces to be associated with the 8" terra cotta which paralleled the 18" terra cotta or an extension of the terra/cotta pipe junction found in Grid 39. The purpose could not be determined.

Site records indicate that a drainage trench/trough exiting the main building on its northern side was connected to the 12" green PVC pipe outfall into Stoney Creek. The OSC requested ERRS to clean up debris in a "court yard" area on the north side of the main building, between two extensions of the main building (Eastern or small extension and Western or large extension), to locate this trough. The trough was found; beginning against the north side of the main building with a 2" diameter steel pipe exiting from under the floor of the main building. The concrete trough slopes downward to the north running approximately 50 feet and terminating at the edge of the Eastern building extension. This area was then excavated to determine how drainage from this trough may have continued towards Stoney Creek.

A wooden sided box constructed of 2"x 6" timbers, with overall dimension of 4 ft x 6ft and no discernible bottom was first encountered at the end of the trough. This box seemed to be a

structure pre-dating the building extension since the building foundations were partially within the box.

Excavation proceeded being careful to avoid functioning stormwater inlet #2 (installed more recently). Installation of storm inlet #2 may have obliterated some of the features related to the drainage from the concrete trough.

Excavations did encounter several pipes. A shallow 4" white PVC pipe began near the end of the trough and travelled in a northwesterly direction. This pipe travelled to and then under the asphalt driveway and was removed up to the asphalt.

A deeper 10" diameter terra cotta pipe was found traveling in an east-west direction alongside the above-mentioned wooden box. This pipe contained and was discharging an orange/brown NAPL and was nearly full of a soft, gray sludgy material. This pipe was broken and ended abruptly in its westerly direction at the point of other pipeworks running along the edge of the Western building extension. Easterly, this 10" pipe ended at/near a small feature believed to be a drop box constructed adjacent to a square-shaped penetration into/under the slab of the Eastern building extension.

Several pipes were found exiting the northern wall of the Eastern building extension at about the level of the building's floor. A 6" metal pipe (AH) was found running northwesterly and then travelling under the asphalt paved area – this pipe was believed to contain sections consisting of asbestos containing material (where it was called XX). A 6" terra cotta pipe (designated AF), travelling northerly from the building was found cemented shut at the building foundation and contained drum bungs, gaskets and an aluminum soda can inside. Other pipes included: pipe AH, a 6" diameter steel pipe, sleeved into the above-mentioned square opening in the foundation of the Eastern building extension. Pipe AI is a 2" steel pipe with a thick transite-like coating. Pipe AJ is a 2" steel pipe traveling under the building.

Along the eastern wall of the Western building extension, several buried pipes were found. A 6" terra cotta pipe (AB), and two 4" steel (AC & AD) were exposed which ran parallel in a north-south direction along the wall of the building extension. A section of pipe AB was broken during excavation and discovered to contain oily black material over clear liquid believed to be water.

Adjacent to the concrete trough and under a concrete slab was an underground storage tank. This tank was found filled with a clear liquid (expected to be water). The tank was sampled through a 1" port. Analytical results indicated only very low levels of some volatile organic compounds. This tank was left as found.

The Site was closed on Monday May 26th 2014 in observance of Memorial Day.

The remaining sludge was removed from Frac Tank 3 and it was decontaminated via permit-required confined space entry. On May 29 2014 the tank was demobilized from the Site. ERRs

also began decontaminating frac tank 2 utilizing a hot water pressure washer. All water generated during the pressure washing procedure was collected and transferred to Frac Tank 1.

Pipes and drainage systems previously encountered and which had been re-buried were re-exposed. Previously, these pipes and their contents were removed from the position of a tank, sump, basin, or other feature towards Stoney Creek and then simply cemented shut heading towards the main building since they travelled under asphalt surfaces or areas operational by the current site owner. These pipes were generally found in poor condition and the OSC determined that the contents and pipes containing oily and other waste materials should be removed if practical. Select pipes in the Grid 19 and 20 area were re-located using GPS and re-exposed to prepare for the removal of their contents and tracing to determine their area of origin.

The pipes were prepared by exposing them and stabilizing the excavation floor and sidewalls. During this process, an 8" diameter transite pipe (Pipe G) broke and released brown NAPL into the excavation. NAPL impacted water was pumped to Frac Tank #1.

While exposing buried pipes in Grid 19, a brick drop box, covered with a 2.5' x 2.5' steel inlet grate was found. Broken pieces of a 4" diameter terra cotta pipe were found in the immediate vicinity of the brick drop box, but no connections were confirmed due to the deteriorated condition of the box, and due to the proximity of the active storm drain system.

Under the direction of the OSC, ERRS cleared a concrete pad in Grid 24 (Feature G) approximately 1 ft below ground surface. An 8" steel pipe (previously found Pipe "O") and an adjacent 4" diameter steel pipe, both oriented vertically were located on the northern end of the pad. Several 4" diameter steel and cast iron pipes were found directly adjacent to the concrete pad.

The OSC investigated the concrete slab in the courtyard area near former Geoprobe point 60 (2005, MWH), the slab contained several areas which appeared to have been the location of some sub-slab features removed and filled with concrete. A 3" diameter steel pipe was discovered running north east to south west at approximately 2 ft bgs, adjacent to the underground storage tank in the courtyard north of the drum building.

Frac Tank # 3 (serial # 253322) was sampled to support disposal.

ERRS resumed the offsite disposal of TSCA-regulated soils generated during the drum removal phase of operations. Intermodal containers were transported by truck to a railroad facility in Hainesport, New Jersey to then be transferred onto railcars for transport to Indiana, where the intermodal containers will then be placed on truck trailers for transport to the final disposal landfill facility located in Roachdale, Indiana. The following was transported from the Site:

- On 6/4/14, 4 intermodal containers with the estimated weight of 90 tons.
- On 6/5/14, 19 intermodal containers with an estimated weight of 427.5 tons.
- On 6/6/14, 19 intermodal containers with an estimated weight of 427.5 tons.

An underground utility locator was onsite to determine the presence of any live or historic utilities in and around the main building in support of upcoming continued removal site evaluation activities.

as of June 14, 2014

Initial pipe cleaning operations on pipes that are expected to remain in place were conducted. However, the amount of sludge or other materials in the pipes made simple tools, such as a plumber “snake”, ineffective. A water jetting vehicle was then directed for these operations.

Further excavation was conducted around the square concrete pad (Feature G) in Grid 24. This pad is near Pipe “S”. A significant amount of oil is found in the soil at the level of Pipe S and discharging onto the ground water. Several pipes running along the concrete pad were removed.

Operations relating to the disposal of TSCA-regulated soils were concluded. A total of 10 intermodal containers, loaded with an estimated weight of 22.5 tons each, were shipped offsite for disposal. No PCBs soil remain stockpiled onsite.

Disposal of non-TSCA regulated soils continued this week. The following were transported to the Conestoga Landfill located in Morgantown, Pennsylvania:

- 6/10/14, 17 loads with an estimated weight of 382.5 tons.
- 6/11/14, 21 loads with an estimated weight of 472.5 tons.
- 6/12/14, 19 loads with an estimated weight of 427.5 tons.
- 6/13/14, 6 loads with an estimated weight of 135 tons.

The process of exposing pipes and drainage systems continued. Excavations commenced along the southern wall of the main building to expose and remove the eastern portions of pipe EE (a terra cotta pipe). The pipe contained both rubbery and fine sludgy material. A sample was collected on 6/10 (analytical below). At one point, clear fluid also came from the pipe and was sampled with unremarkable results.

Excavation along the western wall of the main building continued. A pipe was found exiting the building and was designated TT. A sample of its contents were collected on 6/10 (see analytical below). This pipe was a very fragile pipe constructed of clay and could not be traced westward.

A small underground storage tank (UST) was found in Grid 30 while exposing nearby drainage pipe “PP”. This tank was directly below the concrete wall of the sandblasting area and extended partially under the floor of this area. The tank was inadvertently punctured by the excavator and a clear yellow liquid came out. A sample was collected on 6/11 (analytical below) and then the hole was repaired with hydraulic cement. The sample had a headspace reading of 200 ppm H₂S and 220 ppm VOC. The liquid had a pH of 10. Sustained VOC levels of ~7 ppm were obtained in the breathing zone near the UST.

The OSC directed ERRs to assist with shallow soil sampling activity along the southern wall of the facility. A large concrete pad was found near sample location 05-MET-33 (2005, MWH). A depressed area appeared to serve as containment and to be connected into the main building. The purpose of this feature is unknown.

Pipe MM was exposed and sampled (analytical below) along with nearby ground water.

A Frac Tank was mobilized to the site in anticipation of the collection of water generated during the jetting procedure of buried pipes and drainage systems.

ERRS began the process of removing the contents from buried pipe systems with oily or suspect contents that may have originated from beneath or within the former facility buildings. These pipes were those that could not be previously removed due to their location beneath the asphalt area of the current operational area or were otherwise too close to the building. A water jet and vacuum truck unit were utilized. Contents (black oily material) were removed from Pipe MM to a length of 60' where a blockage was found. Pipe NN was found unpenetrable beyond a distance of only 4'3" under the main building; its contents were light colored and oily and placed into a 5-gallon pail for disposal.

Additional START members were on site on 6/11, 6/12, and 6/13 to conduct assessment activities by collecting subsurface soil, groundwater, and surface water samples in and around the drum building. 16 soil borings were advanced using Geoprobe direct push technology. Of these 16 borings, approximately 32 soils samples were collected. Temporary wells were installed in 6 of the soil boring locations. Soil and aqueous samples were sent to a CLP assigned laboratory for SVOC, VOC, metals (including Hg and Cn) and Aroclor analysis under standard turnaround times.

as of June 21, 2014

ANALYTICAL RECEIVED

- Pipe EE - this pipe located along the southern wall of the main building was sampled 6/10/14. Among other things, the following were detected: chlorinated organic compounds (e.g., dichloroethene – 13 mg/kg), BTEX compounds (e.g., toluene 11 mg/kg), PAHs, DEHP, and many trimethylbenzene compounds.
- Pipe TT – this pipe was found along the western wall of the main building at its corner with the sandblasting room. Among other things, the following were detected: DEHP (20 mg/kg) and BTEX compounds (e.g., toluene 1.2 mg/kg)
- Grid 30 UST - this underground tank was found along the western wall of the main building near the point where the rail siding neared the present footprint of the sandblasting room. Detected were numerous low concentrations of VOCs and several sulfide compounds such as dimethyl disulfide (190 mg/l) and methane thiol (54 mg/l).

Results of disposal sampling of Frac Tank # 3 were received indicating non-hazardous disposal. This week, three tanker loads of liquid from frac Tank #3, were hauled to Environmental Recovery Corporation, Lancaster PA for disposal. The following was transported:

- On 6/17/14, two loads containing 6,100 gallons each
- On 6/18/14, one load containing 4,092 gallons.

The emptied Frac Tank was subsequently moved to near Grid 10 area to support (as needed) collection of water generated during the jetting procedure of buried pipes and drainage systems.

Samples were collected for laboratory analysis from Frac Tank #1 (251955) and Frac Tank #4 (252663) to support disposal.

ERRs continued the process of removing the contents from buried pipe systems. All liquids generated from the cleaning process were collected and containerized in frac tanks. Following pipe cleaning, an in-pipe video inspection was performed on the pipes to determine remaining pipe contents, connections, condition, direction and point of origin. Following the in-pipe video inspection the OSC instructed ERRS to cement shut the exposed ends of the pipes. The endpoints were marked with GPS and the pipes will be backfilled. The following describes the condition of the evaluated pipes:

- Pipe F- Cleaned out a total of 32 linear feet, determined to travel generally east, with a bend in the pipe changing direction to the north east at 25 ft.
- Pipe Z- Cleaned out a total of 69 linear feet, able to advance camera 78 feet, traveling east, where blockage was encountered.
- Pipe C1- Cleaned out a total of 74 linear feet, advanced camera 87 feet. The pipe direction travels 45 ft, to the east, then encounters a 45 degree bend, and travels south east for an addition 42 ft, where blockage was encountered.
- Pipe C2- Cleaned out a total of 40 linear feet, advanced camera 63 feet. Runs adjacent and parallel to pipe C1, The pipe direction travels 48 ft, to the east, then encounters a 45 degree bend, and travels south east for an additional 15 ft where blockage was encountered.
- Pipe E- Cleaned out a total of 27 linear feet, advanced camera 32 ft to the east, where a solid concrete blockage was encountered.
- Pipe G- Cleaned out a total of 51 linear feet. Advanced camera 59 feet to the east where a solid blockage was encountered.
- Pipe D- Cleaned out a total of 55 linear feet, inspected a total of 60 feet to the east, and blocked by a large object. This pipe travels under the western extension building.
- Pipe K- Cleaned out a total of 51 linear feet, inspected a total of 60 ft, traveling east, the inspection was then terminated at a solid object.
- Pipe S- Cleaned out a total of 60 linear feet, traced traveling south east terminated by solid blockage.

- Pipe M- Cleaned out a total of 24 linear feet. Advanced camera a total of 28 feet to the south east, where blockage was encountered.
- Pipe AB- Cleaned out a total of 15 linear feet traveling north, and 8 linear feet traveling south, blockage caused by pieces of broken pipe.
- Pipe XX- Cleaned out a total of 8.5 linear feet
- Pipe MM- inspected a total of 71 linear feet where solid blockage was encountered. Pipe traveled north east parallel to sandblasting room.
- Pipe AF- Cleaned out a total of 8 linear feet, traveled north west, appears to have been broken during the construction of onsite stormwater system.
- Pipe WW- cleaned out a total of 2 linear feet
- Pipe XX- cleaned out a total of 8 linear feet, traveled north west under parking area, solid blockage in the pipe.
- Pipe YY- Cleaned out a total of 15 linear feet, traced confirmed pipe origin in floor of drum building.
- Pipe PP- blocked at 3 feet. Further hand-digging into this pipe indicates that it extends eastward under the sandblasting room.

An evaluation of the pipes and their contents and the length/orientation of the pipe run suggests that the pipes may have served or drained structures other than the existing buildings associated with the Metro Container (former Stauffer Chemical) building. Some of the pipes appear to start and then stop for no reason or end in clay or buried rubble (not connecting to an obvious drain or area of known operation). It is unknown if pipes that do not appear to have a purpose associated with the current Site layout may be relating to an older facility (e.g., former Delaware Oil Works) or represent a configuration abandoned or reconstructed by Stauffer or others since the 1920s.

A roll-off container was delivered to the Site on 06/20/14 and was loaded with suspect non-friable Asbestos-containing transite pipe. The contents of the roll-off container with an estimated weight of 15 tons were then disposed of at the Conestoga Landfill located in Morgantown, Pennsylvania. The emptied container was re-mobilized to the Site and loaded with additional suspect ACM including steel likely coated with galbestos material, an ACM that may contain PCBs. The galbestos material was sampled for PCBs to determine disposal options. The roll-off container was secured pending sample results.

Analytical results from samples collected on 5/21/14 from the UST discovered in the courtyard area near Geoprobe point 60 (2005, MWH) became available and it was determined the aqueous contents of the tank pose little if any threat to human health or the environment. The tank contents contained low levels of carbon disulfide and toluene. The OSC directed no further actions for this tank.

as of July 5, 2014

ANALYTICAL RECEIVED

- Pipe MM – This pipe was sampled 6/12. Detected among other things were BTEX compounds (e.g., toluene 7.2 mg/kg), DEHP (31 mg/kg), and low concentrations of other compounds such as carbon disulfide.

A small excavation was conducted in an existing hole in the concrete floor of a room on the southeastern corner of the main building. The OSC wanted to visually inspect the subsurface condition in this room (a/k/a “lid room”) where wastes were expected to be buried. The test pit encountered disturbed soil to a depth of about 5ft bgs and no visual evidence of waste.

Repairs were made to the drainage swale in the Grids 19 and 20.

A hole was punctured through the top of the UST buried in Grid 30. This was done in order to further characterize the contents for the purpose of disposal. Monitoring of the headspace in the UST revealed VOC readings of 1,650 ppm and H₂S of 200 ppm.

Equipment decontamination was conducted on the off-road dump truck, 3” dry-prime water pump, small excavator, and scaffolding.

Excavations in the courtyard area between the main building extensions and on the south side of the main building were backfilled and covered.

Disposal of non-TSCA regulated soils were continued. 12 loads with an estimated weight of 220 tons, and 2 loads of non-TSCA debris with an estimated weight of 44 tons were transported for disposal at the Republic Conestoga Landfill located in Morgantown, Pennsylvania.

Results of disposal sampling of Frac Tank #1 (251955) and Frac Tank #4 (252663) were received indicating non-hazardous disposal.

The contents of the UST found in Grid 30 were pumped into five 55-gallon drums and staged pending disposal. The material had a strong sulfur odor. Following bulk liquid removal, the tank was removed. Numerous small holes were observed along the side of the tank. The tank was wrapped in plastic and placed upon a soil pile (with berm) to contain any leakage. Future operations will remove sludge and residue remaining in the tank.

START utilized Bentonite chips to abandon 5 shallow temporary monitoring wells that were drilled as part of assessment water sampling activities in and around the main building.

as of July 19, 2014

ANALYTICAL RECEIVED

- UST in Grid 30 – This tank was sampled on 6/25 for disposal analysis. The TCLP results indicated low levels of phenolic compounds and VOCs (e.g., benzene and PCE). The concentration of reactive sulfide was 768 mg/l.

Disposal of non-TSCA regulated soils continued this week. Disposed were:

- On 7/8/14, 12 loads with an estimated weight of 255.64 tons
- On 7/10/14, 9 loads with an estimated weight of 203.47 tons

Analytical results from samples of suspect Galbestos material were received. This material was removed from the drum burial area in the northern portion of the Site (area west of Grids #3 and #5) and placed into a secure container. The results indicated the material has a PCB (aroclor 1268) concentration of 25,000 ppm.

Waters stored within Frac Tanks were transported from the Site for disposal at Environmental Recovery Corporation located in Lancaster, Pennsylvania. The following was removed:

- On 7/14/14, 2 loads from Frac Tank #4 (252663), each containing 6,200 gallons, for a total of 12,400 gallons.
- On 7/15/14, 3 loads of water from Frac Tank #4 (252663) and Frac Tank #1 (251955), for a total of 18,550 gallons.
 - Frac tank #4, one load 6,200 gallons. Last load, remaining 800 gallons in tank.
 - Frac Tank #1, one load 5,500 gallons. Second load of 6,050 gallons.
- On 7/16/14, the remaining liquid in Frac Tank #1, 3,690 gallons.

Frac Tank #3 (253322), Frac Tank #4 (252663), and Frac Tank 1 (251955) were entered via confined space entry for the purpose of removing residual sludge material and decontamination. Removed sludge was placed in the existing non-TSCA regulated soil stockpile awaiting offsite disposal. Frac Tanks #3 and #4 were demobilized.

The remaining solid residual materials within the UST removed from Grid 30 were removed. The solids were placed into 2 drums and staged. The soil surrounding the UST during removal was laid out on plastic to be exposed to sunlight, then was added to the existing non-TSCA waste stock pile awaiting offsite disposal. The UST was then cut to size appropriate for disposal.

The vibratory roller was decontaminated in preparation for demobilization.

as of July 26, 2014

Frac Tank #1 (251955) was entered under a confined space entry permit after all free liquid was removed to conduct decontamination. Sediment in the tank bottom and minute quantities of rinse

water were collected and placed in the existing non-TSCA regulated soil stockpile for off-site disposal. Following decontamination, Tank #1 was demobilized.

Disposal of non-TSCA regulated soils was completed. The following was disposed:

- On 7/22/14, five loads with an estimated weight of 110 tons.
- On 7/23/14, six loads with an estimated weight of 132 tons.
- On 7/24/14, six loads with an estimated weight of 132 tons.

Fifty-six (56) tractor trailer tires and 25 car/light truck tires that were excavated in the northern portion of the Site during previous activities were transported under a bill of lading to Emanuel Tire Corporation of Conshohocken, Pennsylvania by Smith Tire Hauling of Levittown, Pennsylvania. The estimated weight of the tires was 1.8 tons.

ERRS decontaminated the large excavator and loader in preparation of the demobilization of this equipment.

as of September 5, 2014

A roll-off container of suspected Galbestos material containing ACM and elevated PCBs was transported from the Site on August 19.

Seven drums of waste materials removed from the UST found in Grid 30 were transported from the Site on August 29.

The contractor completed decontamination and/or cleaning of all remaining equipment and Site-related items (e.g., office trailers, storage box). All contractor-related personnel and equipment were demobilized September 5, 2014.

IX. ANALYTICAL RESULTS OF CONTINUING REMOVAL SITE EVALUATION

Although the Removal Action resulted in the removal of accessible portions of several pipe systems, it is clear that the hazardous substances found within these systems originated from within or beneath the dilapidated buildings presently at the Site and still pose a threat of release to the environment. The presence of significant amounts of oily material containing hazardous substances in the soil and ground water under and immediately adjacent to the walls of the buildings at the Site indicates the likelihood of more sources of hazardous substances and oil beneath the buildings and an asphalt-covered area immediately adjacent to the buildings. Many of the pipe systems at the Site were removed up to the position of the asphalt or the dilapidated buildings.

These pipe systems or the highly contaminated soil adjacent to these features still pose a threat of release to the environment. These pipe systems and tanks include:

- a. Pipe M - A rectangular concrete basin (Feature D) was found in the northwestern portion of the Site and contained oily material and had a pipe outlet that lead towards Stoney Creek. The basin and the outlet pipe were either cleaned or removed during the Removal Action. At least one pipe inlet to the basin was found (Pipe M). This pipe contained black oily material and originates from somewhere in the vicinity of the main building. Accessible portions of this pipe were flushed clean. The content, origin or condition of this pipe system beyond the flushed portion is unknown.
- b. Pipes C1 and C2 – These pipes ran side by side. They terminated near Stoney Creek, ran easterly under the concrete basin mentioned above in item (a) and then towards the main building. The pipes contained black oily material. The pipes were removed from their point of termination near Stoney Creek to the edge of an asphalt-covered area adjacent to the main building. Accessible portions of these pipes were flushed clean. The content, origin or condition of this pipe system beyond the flushed portion is unknown.
- c. Pipe D – This pipe is a green PVC. From the outfall point on Stoney Creek, this pipe system ran easterly over the top of the concrete basin mentioned above in item (a), entered a cinder block drop box and then ran towards the Eastern extension to the main building. As this pipe neared the main building it was found full of black oily material. The pipe system was removed from its point of termination within Stoney Creek to the edge of the asphalt-covered area adjacent to the main buildings. Accessible portions of Pipe D were then flushed clean. The origin of this pipe system is unknown; however, contaminated discharges from this pipe system into Stoney Creek have been noted in the Site's history.
- d. Pipe Z – This pipe is a square pipe that was found running eastward from the drop box mentioned above in item (c) towards an area currently under asphalt pavement. This pipe was found full of black oily material. The pipe was removed from the drop box to the edge of the asphalt-covered area adjacent to the main building. Accessible portions of this pipe were then flushed clean. The content, origin or condition of this pipe system beyond the flushed portion is unknown.
- e. Pipe MM – This pipe is a square pipe that terminated at Stoney Creek south of a rectangular concrete basin and then ran easterly towards and then alongside (north of) the main buildings under an asphalt-covered area. The pipe was found full of black oily material. Analysis of the black oily material in Pipe MM indicated numerous hazardous substances inclusive of polychlorinated biphenyls (PCBs), bis (2-ethyl hexyl) phthalate (DEHP), toluene, tetrachloroethene (PCE), benzo(a)pyrene, and dichlorobenzene. The accessible content of this pipe was removed via flushing. The content, origin or condition of this pipe system to the east beyond the flushed portion is unknown.
- f. Pipe NN – This pipe was found originating from under the main building, running towards a brick and concrete junction box (Feature L) from which a terra cotta pipe (Pipe QQ) exited and then ran towards Stoney Creek (but which terminated in soil about 100 feet short of Stoney Creek). The contents of Pipe NN were sampled. The analytical

results indicate numerous hazardous substances including PCBs, toluene, PCE, and dichlorobenzene. Various alkanes and methyl benzene compounds (e.g., 1,2,4-trimethylbenzene) were also detected. This pipe was flushed and found to be blocked under the building. The origin or purpose of this pipe system is unknown.

- g. Pipe PP – This pipe originates from under the main building and then enters the brick and concrete junction box mentioned above in item (f). The pipe may originate in the vicinity of a square structure of unknown purpose attached the wall of the sandblasting room. The contents of Pipe PP were sampled. The analytical results indicate numerous hazardous substances including PCBs, toluene, PCE, and dichlorobenzene. Various alkanes and methyl benzene compounds were also detected. This pipe was removed and the section leading under the building was flushed and found to be blocked and collapsed under the main building. The origin, content, or purpose of this pipe system is unknown. The soil and ground water adjacent to this pipe system is heavily oiled.
- h. Terra Cotta Pipe Segments – Sections of terra cotta pipe from which oily material discharged were found adjacent to the main building in the area between the large and small extensions to the main building attached to the northern wall of the main building. These pipes were found broken at the location of the building foundations suggesting that the building may have been constructed after the pipes were originally laid. The accessible portions of the pipes were removed. The origin, content or purpose of these pipes are unknown.
- i. 15” Steel Pipe and Feature K1 – This pipe originated at the location of a concrete box (Feature K1) attached to the main building. Trenches in the floor of the manufacturing building emptied into the concrete box. The 15” steel pipe ran southwesterly from the concrete box and then terminated in an underground, three-chambered concrete feature which has been identified as a separator box and which was cleaned and filled with clay during a Removal Action conducted by potentially responsible parties in 1989 and 1990. The 15” pipe contained a sludge material and liquid with pH of 10. The 15” pipe had a large hole which was wrapped with what appeared to be a sheet of linoleum. The sludge material from the pipe was analyzed and found to contain numerous hazardous substances including: PCBs, bis (2 ethyl hexyl) phthalate, toluene, PCE, and dichlorobenzene. Various alkanes and methyl benzene compounds (e.g., 1,3,5-trimethylbenzene) were also found. The soil and ground water immediately adjacent to the hole in the 15” Steel Pipe and the concrete box, is heavily oiled.
- j. Building Trenches – Some of the floor trenches in the manufacturing building emptied into a concrete box (Feature K1) from which the 15” steel pipe described in item (i) originated. Some areas of the trench did not have a bottom (i.e., the concrete bottom of the trench was either removed or deteriorated beyond recognition). The trenches fill with water and then empty after rain events (large portions of the building have no roof). The material in the trench system, which may include some immediately underlying soil, was analyzed. The material contained numerous hazardous substances including: PCBs, bis

(2 ethyl hexyl) phthalate, toluene, and dichlorobenzene. Various alkanes and methyl benzene compounds (e.g., 1,3,5-trimethylbenzene) were also found.

- k. Underground Storage Tank (UST) in Grid 30 – Immediately adjacent to the main building and partially underneath a wall and floor, an UST was found. The bottom portion of the tank rested in ground water, had numerous small holes, but was still relatively full of an amber liquid and about 6 inches of thin black sludge. The contents of the tank contained phenol and sulfide compounds (e.g., methane thiol and dimethyl disulfide) and emitted hydrogen sulfide concentrations in excess of 200 parts per million (ppm). Low concentrations of organic compounds such as PCBs and toluene were also found (although such detections may result from communication with ground water through holes in the tank).

In addition to the pipe systems listed above and various drum wastes found at the Site, three distinct types of waste materials were found buried at the Site. These are:

- Debris – The debris included bricks, concrete, steel pipes, asbestos (sheets of transite and Galbestos), drum carcasses, bottles, and wood found throughout the Site. Galbestos (PCBs concentration of 25,000 mg/kg) was removed from the Site.
- Unknown Black Material – a dense brittle black material was found buried about 4 feet below the ground surface in an area west of the buildings. When large pieces were broken, black tarry material was found within. Notable hazardous substances detected in this material include carbon disulfide (42,000 mg/kg) and polycyclic aromatic hydrocarbons (PAHs) such as benzo(a)pyrene (470 mg/kg).
- Charcoal-Like Material – thick layers of a gray-colored, light, charcoal-like material were found between approximately 5 and 15 feet below the ground surface. This material existed between the buildings and Stoney Creek over a large area and was associated with oily dark-colored non-aqueous phased liquids (NAPL). Most of this material was within the ground water.

Continued removal site evaluation activities included sampling and analysis of wastes as well as visual observations of piping systems removed from the Site and other Site conditions. Several conditions which necessitate modification and expansion of the Removal Action in order to mitigate threats posed by the Site were identified. These conditions include:

- 1) Numerous pipe systems at the Site were previously unknown and conveyed unknown wastes, hazardous substances, and/or oil from trenches, catch basins, tanks or other features from the area of the buildings and toward Stoney Creek. Without available engineering diagrams or other information, the origin or source or purpose of these pipe systems cannot be determined nor can it be determined if all such systems at the Site have been identified.

- 2) Many of the pipe systems lead directly into or near to Stoney Creek. However, most pipe systems were found to be in a deteriorated condition or were found broken or were found to terminate in soil (e.g., no outfall). The deterioration of the pipe systems allows for the release of hazardous substances and oil directly into the environment. Such is likely occurring from the sections of the pipe systems remaining.
- 3) Many of the pipe systems were found to originate from areas beneath the former manufacturing buildings (or under an asphalt-covered area next to the buildings) at the Site and could not be removed. Most of these former manufacturing buildings are presently in dilapidated condition. The presence of the dilapidated buildings prevents thorough assessment and removal of sources of hazardous substances and oils now releasing into the environment. Accessible portions of these pipes were flushed to remove hazardous substances from within. The condition or point of origin of these systems under the buildings cannot be determined. The environment (soil and ground water) near these pipe systems is highly contaminated with hazardous substances and oil.
- 4) The former manufacturing buildings, which were built in the 1920s or afterward and are now dilapidated, exist on top of the ruins of a petroleum refinery complex that burned to the ground on at least two occasions in the 1800's. It is likely, that some of the pipe systems partially removed during the Removal Action, and which contained hazardous substances and oil, were components to processes and pipe systems that pre-date the 1920's-era manufacturing building.
- 5) The origin or purpose of these pipe systems is unknown. The petroleum refining businesses contained numerous underground storage tanks as evidenced in fire insurance maps for Delaware Oil Works or Manufacturers Paraffine Company. It is unknown if any of the tanks (possible sources of oil or hazardous substances that entered pipe systems) were cleaned or removed. It is noteworthy to consider that segments of pipe systems likely component to the former facilities were not removed prior to construction of the existing Stauffer facility.
- 6) The buildings at the Site include dilapidated portions and sections with no roof. The walls exhibit deterioration as evidenced by collapsed sections, large cracks, bowing surfaces, and fallen bricks. The buildings do not provide protection against penetration by rain water into the hazardous substances or oil that lies beneath as evidenced by rain water entering and then exiting the drainage trenches in the building floor. The deteriorated condition of the building also makes removal of highly contaminated soil adjacent to (or under) the building very difficult and unsafe. The dilapidated condition of the building does not prevent release of hazardous substances into the environment.

In addition to the wastes, contaminated soils, and contaminated ground water that has been found at the Site, the pipe systems and tanks described above and, more specifically, the continuation of these pipe systems or tanks existing under the dilapidated buildings and adjacent asphalt area, are also sources which continue to release hazardous substances or oil into the environment. NAPL continues to release and discharge from pipe systems and from source areas under the

buildings at the Site. Certain hazardous substances within these source areas (i.e., organic compounds such as toluene) also exacerbate the release of PCBs from the Site by enhancing the mobility of PCBs in the environment. Elevated concentrations of organic compounds such as toluene under the building from the source areas described below are further mobilizing PCBs into the environment from the PCBs-contaminated soils and sources near and under the western limits of the buildings. The pipe systems and waste materials which are described herein are the “Source Areas” which continue to release hazardous substances into the environment, are the focus of the response actions proposed herein, and are generally described as follows:

- **Source Area A** – This general area includes the area under the former “lid room” of the main building. Buried drums and wastes were alleged to be located under a floor in this portion of the main building. Analysis of material under the “lid room” floor includes elevated concentrations of numerous hazardous substances. The hazardous substances found under the lid room floor include: chlorinated solvents (e.g., PCE), chlorinated benzene compounds (e.g., dichlorobenzene), aromatic hydrocarbons (e.g., toluene), phenol, bis (2 ethyl hexyl) phthalate, 1,1'-biphenyl, and polycyclic aromatic hydrocarbons (PAHs)(e.g., benzo(a)pyrene). The concentrations of these substances found under the lid room floor are higher than concentrations found in other nearby places.
- **Source Area B** – This general area includes a trench system (see Section II.2 item J) running through the floor of the main building in and under which elevated concentrations of hazardous substances have been identified. The hazardous substances found within and under the trench system include: PCBs (both aroclor mixtures and many individual congeners), chlorinated solvents (e.g., PCE), chlorinated benzene compounds (e.g., dichlorobenzene), aromatic hydrocarbons (e.g., toluene), bis (2 ethyl hexyl) phthalate, and polycyclic aromatic hydrocarbons (PAHs)(e.g., benzo(a)pyrene). A 15” steel pipe originally drained these trenches and these same hazardous substances were also found in the pipe. Currently, these trenches are exposed to rain events which drain directly to the environment as evidenced by the elevated concentration of these hazardous substances in the soil beneath the trenches. Pipe NN originates from an area immediately adjacent to these trenches and also contained these same hazardous substances. Ground water downgradient of this area contains elevated concentrations of PCBs indicating mobilization of PCBs by organic compounds such as toluene.
- **Source Area C** – This general area includes the area of the main building formerly functioning as a loading dock on which drums of various wastes were processed. “Subfloor” tanks were reportedly in this area as observed in 1988 by EPA. A “waste burner” was located in this area. The UST found by EPA in 2014 (see Section II.2 item k) was immediately adjacent to the wall and partially beneath the floor of this area of the building. The soil and ground water adjacent to and under this area is highly contaminated with NAPL. Hazardous Substances found under the former loading dock area include: phenol and other phenolic compounds, bis (2 ethyl hexyl) phthalate, low levels of PCBs and 1,1'-biphenyl, and polycyclic aromatic hydrocarbons (PAHs)(e.g., benzo(a)pyrene). Pipe PP (see Section II.2 item g) originates from under this area of the

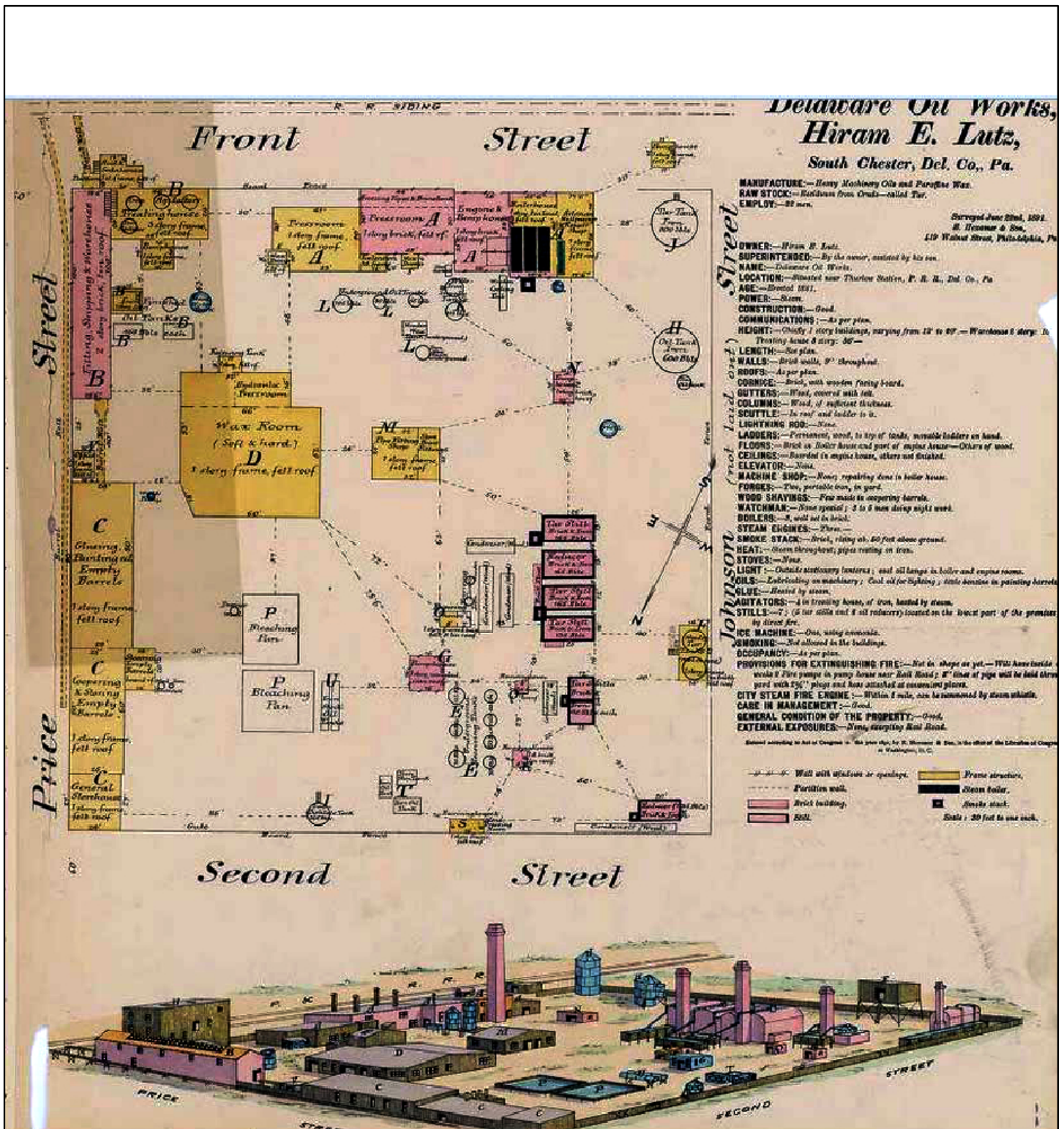
building and contains elevated concentrations of PCBs, phenolic compounds, and PAHs, but many other compounds such as chlorinated hydrocarbons (dichloroethene), aromatic hydrocarbons (toluene), bis (2 ethyl hexyl) phthalate, and methyl benzenes suggesting a source other than the soil under the building.

- **Source Area D** – This general area includes the area under the northern portions of the main building and its annexes and an immediately adjacent asphalt-covered area from which numerous pipes (see Section II.2 (a – e and h)) originate. The origination point and purpose for the pipes which conveyed numerous hazardous substances is unknown. The condition of these pipes (as observed in the removal of certain sections) is known to be poor and likely unable to contain any hazardous substances therein. The hazardous substances found migrating through the pipes (e.g., Pipe MM described in Section II.2 item e) and originating from unknown points of origin for unknown purposes include: PCBs, bis (2-ethyl hexyl) phthalate, toluene, tetrachloroethene (PCE), benzo(a)pyrene, and dichlorobenzene.

X. FACTORS AFFECTING FUTURE SITE USE

This Site is on the National Priorities List and will be subject to future monitoring and activities by or under the direction of EPA. Future Remedial Actions are expected to address Site-wide threats.

Michael Towle, OSC
EPA Region III
Philadelphia, PA



Imagery: Hexamer General Surveys,
Chester Pa, 1891



Metro Container, 200 Price Street
Trainer, PA

Figure x-x
Hexamer Fire Insurance Map
Delaware Oil Works

