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January 28, 2008

Mr. Jon Gulch
On-Scene Coordinator
Emergency Response Branch
United States Environmental Protection Agency
9311 Groh Road
Grosse Ile, Michigan 48138

Re: Florida Gas Plant Site Removal Summary Report
Florida Location, Houghton County, Michigan
W.O. No.: 20405.012.003.0238.00
TDD: S05-0003-0707-011
DCN: 238-2A-ABJJ

Dear Mr. Gulch:

In April of 2006, the United States Environmental Protection Agency (U.S. EPA) tasked the Weston Solutions, Inc., (WESTON®) Superfund Technical Assessment and Response Team (START) to conduct a site assessment at the former Peninsular Gas Company Plant Site (Site) portion of the Florida Gas Plant Site located in Florida Location, Houghton County, Michigan. The site assessment was conducted under Technical Direction Documents (TDD) S05-0605-001 and S05-0002-0609-046. Results of the site assessment coupled with results from previous investigations indicated that conditions at and adjacent to the Site presented an imminent and substantial threat to public health, welfare, and the environment, and met the criteria for a removal action in accordance with the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) 40 Code of Federal Regulations 300.415(b)(2). The imminent and substantial threat is related to the off-site migration of coal tar and dense and light non-aqueous phase liquids (D/LNAPL) as well as the presence of hazardous substances at or near the surface of ditch sediment that present an exposure risk to human health and the environment. A complete summary of the Site background, site assessment results, and proposed alternatives for the removal action are provided in the *Site Assessment Report* (WESTON, 2007).

In July of 2007, the U.S. EPA tasked WESTON START to conduct oversight of a time-critical removal action (TCRA) at the Site. The work was conducted under TDD S05-0003-0707-011. The following is a discussion of the specific activities performed by U.S. EPA as part of this removal action.

SITE BACKGROUND

Site Location

The Site is located in Florida Location, Houghton County, Michigan (**Figure 1**). Florida Location is part of Calumet Township. The Meridian coordinates for the Site are 47.22881 degrees (°) north and 88.44119° west. The Site is defined as the former manufactured gas plant (MGP) property located in the northeast quadrant of the intersection of Franklin Street and Lake Linden Avenue (M-26). A drainage ditch which flows southwesterly towards Hammel Creek, and historically received uncontrolled discharges of coal tar waste, is located on the south side of the Site along Franklin Street. These features are depicted on **Figure 2**.

The Site's topography is relatively flat except for slopes immediately adjacent to the drainage ditches. Residential areas are adjacent to the west and south sides of the Site. An undeveloped wetland is east and northeast of the Site and a commercial business is north of the Site.

Site History

The information discussed below was obtained from the following reports: *Site Assessment Report, Florida Gas Site, Florida Location, Houghton County, Michigan.* (WESTON, January 2007), *Remedial Feasibility Study Report Florida Gas Project Plant Site* (Coleman Engineering Company [CEC], July 2001), and *Florida Gas Ditch Remediation Documentation Report* (CEC, 2000).

In the early 1900s, an MGP was constructed to provide gas for residential, commercial, and municipal use in Florida Location. The MGP was operated as the Calumet Gas and Coke Company until 1935, when its Articles of Incorporation were amended and the name changed to Peninsular Utilities Company. In 1946, the company name was changed to the Peninsular Gas Company (PGC). Between 1946 and 1947, PGC converted from a coal gasification process to distribution of propane gas. In 1966, PGC switched to the distribution of natural gas and utilized the propane plant only during periods of peak demand (most recently 1978). The property is for sale and limited propane distribution still occurs.

During the use of the Site as a MGP, numerous byproducts and wastes were produced including coal tars, tar-water emulsions, ash, clinkers, oxide box materials, lamp black, and process wastewater. MGP wastes, collectively referred to as coal tar wastes, were discharged directly into the drainage ditch adjacent to the Site. Subsequently, the drainage ditch conveyed the waste through a residential neighborhood of Florida Location, a series of wetlands, and eventually Hammel Creek (approximately ¼ mile from the Site).

Between 1992 and 2001, PGC, the Michigan Department of Environmental Quality (MDEQ), and U.S. EPA conducted a series of investigations at the Site. From these studies, the presence of gross coal tar contamination was confirmed at the Site and in the drainage ditch network stretching from the Site through the wetland system that connects to Hammel Creek. As defined in previous reports related to the Site, gross contamination, as used herein, is dark tar-like waste material that is "saturated with an oil like substance or free phase liquid of an oil like substance" (*Remedial Feasibility Study Report Florida Gas Project Plant Site* (CEC), July 2001).

The gross contamination appears to differ in relative composition between the eastern and western portions of the Site. The gross contamination in the central and western portion of the Site appears to be dominated by coal tar. In the eastern portion of the Site, the contamination appears to be more related to oil with fewer incidences of tar contamination. These observations are based on reviews of information contained in the *Remedial Feasibility Study Report Florida Gas Project Plant Site* (CEC, July 2001).

Studies were conducted to evaluate the feasibility of removing the gross contamination from the ditch network, the wetlands, and the Site. These studies culminated in the removal of approximately 8,208 tons of grossly contaminated soil and sediment from the drainage ditch network and additional contaminated media from the wetlands between the drainage ditch and Hammel Creek in 1999 and 2001 by MDEQ. Details of these activities are contained in summary reports in MDEQ files. Removal of gross contamination from the Site has not occurred.

Soil removal from the ditch adjacent to the Site was limited by property access limitations, adjacent structures, and the project objectives. Removal efforts began at the toe of the slope and proceeded toward Franklin Street. Upon removal of contaminated soil and sediment along this stretch, gross contamination was observed on the north side of the ditch. Areas along the north side of the ditch where gross contamination was observed could not be removed due to the limitations described above. Upon completion of excavation, the area was restored to grade with backfill sand, a geotextile fabric was installed upon the sand, and rip-rap was placed upon the geotextile.

In October 2005, MDEQ conducted a groundwater sampling event at the Site and a surrounding network of monitoring wells. MDEQ reported the presence of DNAPL in monitoring well GMW-3, along Franklin Street on the south side of the ditch adjacent to the southwest corner of the Site. Free product had not previously been observed at this monitoring well. The appearance of free product at the GMW-3 location, adjacent to the ditch from which gross contamination had been removed in 1999, prompted the MDEQ to seek U.S. EPA's assistance in evaluating the current ditch conditions for a potential removal action.

In April 2006, U.S. EPA directed WESTON START to conduct a site assessment at the Site. The site assessment objectives were to obtain Site-specific information, verify and expand on existing Site information, and support development of potential removal action alternatives to

respond to the discharge of coal tar wastes into the open roadside ditch adjacent to the Site. An additional objective was to determine if contamination that poses an imminent and substantial threat to public health, safety, welfare, or the environment is emanating from the Site into previously remediated areas. To accomplish these objectives, the site assessment consisted of a visual assessment of the ditch area to assess if coal tar waste seepage was evident and a field investigation in conjunction with the MDEQ Remediation and Redevelopment Division (RRD) Superfund Section's Geological Services Unit (GSU) to assess migration of coal tar contamination from the Site. The field investigation results identified conditions that were consistent with the criteria established in the NCP for conducting a removal action.

In August of 2007, U.S. EPA proceeded with a removal action after review of the alternatives provided in the *Site Assessment Report* (WESTON, 2007) and extensive consultation with the U.S. EPA Emergency Response Team (ERT). The removal action entailed the following:

- Installation of a sheetpile barrier along the south and west perimeters of the Site to prevent the migration of hazardous substances and contaminated groundwater;
- Removal of contaminated sediments from the open drainage ditch along Franklin Street adjacent to the Site; and
- Regrading of the Site's surface to inhibit runoff of contaminated soil.

SUMMARY OF THE TIME-CRITICAL REMOVAL ACTION

From August 2, 2007, through September 27, 2007, U.S. EPA conducted a TCRA at the Site per the recommendations of the *Site Assessment Report* (WESTON, 2007). Additionally, six monitoring wells and five recovery wells were installed at the Site for the purpose of monitoring the effectiveness of the sheetpile barrier, providing points for monitoring potentially contaminated groundwater (and NAPL) that has been re-directed due to the position of the sheetpile barrier, monitoring the off-site extent of NAPL contamination, monitoring changes in groundwater hydraulics, and to potentially recover contaminated groundwater or NAPL.

U.S. EPA selected Earth Tech, Inc., as the Emergency and Rapid Response Services (ERRS) contractor for the Site. ERRS, with the assistance of several subcontractors, performed the TCRA as described below. Ms. Wendy Taavola and Ms. Jennifer Numrich of WESTON START were on Site to provide written and photographic documentation of the TCRA and to assist U.S. EPA On-Scene Coordinator (OSC) Jon Gulch. OSC Gulch, WESTON START, and ERRS prepared the following planning documents prior to initiation of the removal action and performed the following activities as part of the TCRA:

SUMMARY OF REMOVAL PLANNING DOCUMENTS		
Document	**Author**	**Date**
Draft Pre-removal Activity Evaluation	WESTON	June 2007
Health and Safety Plan/Traffic Control Plan	Earth Tech, Inc.	August 2007

SUMMARY OF REMOVAL PLANNING DOCUMENTS		
Document	**Author**	**Date**
Emergency-contingency Plan	OSC Gulch	August 2007
Sampling and Analysis Plan	WESTON	August 2007

Notes:
OSC – On-Scene Coordinator
WESTON – Weston Solutions, Inc.

SUMMARY OF 2007 U.S. EPA TCRA		
Action	**Timeline**	**Contractor**
Sheetpile installation	August 20-September 19, 2007	ERRS/Hulcher/MCI
Contaminated ditch soil excavation/ditch restoration	August 14-16, 2007; September 24-25, 2007	ERRS/Hulcher/MCI
Monitoring/recovery well installation	September 10-19, 2007	ERRS/Altech
Site re-grading/restoration	September 25-27, 2007	ERRS/Hulcher/MCI

Notes:
Alteach – Altech Tech, LLC
ERRS – The Emergency and Rapid Response Services contractor Earth Tech, Inc.
Hulcher – Hulcher Professional Services, Inc.
MCI – Yalmer Mattila Contracting, Inc.

Prior to initiating the TCRA, OSC Gulch and START distributed informational flyers to neighboring residents regarding the TCRA.

Sheet Piling Installation

From August 20, 2007, through September 19, 2007, U.S. EPA completed sheetpile installation around the perimeter of the property to isolate gross on-site contamination and prevent gross contamination from re-entering the ditch. Sixteen-foot lengths of vinyl sheetpile were driven by vibratory hammer to a minimum average depth of 12 feet (ft) below ground surface (bgs). Most sheetpile panels were installed at varying depths down to 15 ft bgs using the 16-ft panels, with the exception of those installed along the side of the Site building along Franklin Street, where depths down to 17 ft bgs were achieved using 18-ft panels. This depth was considered sufficient as gross tar contamination has not been observed at depths below eight ft bgs. A photographic log of sheetpile installation activities is provided in **Attachment A.**

The sheetpile barrier crossed the paths of several active and inactive underground utilities, buried concrete structures, and concrete "boulders." Due to this work, inactive utilities were cut and capped, "boulders" were removed, and other underground concrete structures (from the previous MGP operations) in the path of the sheetpile were demolished, excavated, and staged on site provide they were not contaminated. Active utilities in the M-26 right-of-way were re-routed around the Site by the owning utility company. Sheetpiling was fitted around active utilities

along Franklin Street and bentonite was pumped around the sheetpiling and utilities to seal the opening.

On August 20, 2007, sheetpiling installation activities were initiated at the northwest corner of the Site, and installation activities were completed in the southeastern portion of the Site where the sheetpile barrier was inverted to the northeast. **Figure 3** depicts the orientation and extent of the sheetpile barrier. The following table summarizes the number of vinyl panels used along each barrier wall and the resultant linear footage of barrier installed at the Site.

SUMMARY OF VINYL SHEETPILING INSTALLATION		
Boundary	**Number of Panels**	**Linear Feet**
Northern (inverted)	11	22
Western (M-26)	99	198
Southern (Franklin Street)	182	364
Southern (inverted)	14	28
TOTAL	**306**	**612**

The surface elevation of the sheetpile was cut flush immediately below the existing or re-graded ground surface to prevent a tripping and snow plowing safety hazard. Clean sand material was placed and lightly compacted over the sheetpile barrier to restore the areas.

Contaminated Ditch Soil Excavation and Ditch Restoration

From August 14 through August 16, 2007, and September 24 and September 25, 2007, the ERRS crew excavated soil and surficial sediments from 340 ft of ditchline along Franklin Street. The top 1.5 to two ft of ditch sediment and soil located on the northern edge of the ditch that was contaminated by the migration of coal tar waste was targeted for excavation to mitigate the direct contact hazard associated with shallow gross contamination. **Figure 4** depicts the extent of ditch excavation and restoration. A photographic log of ditch soil excavation and restoration activities is provided in **Attachment B.** The following table summarizes the locations and timeframes for the contaminated soil excavation.

SUMMARY OF DITCH EXCAVATION	
Section of Ditch	**Excavation Timeline**
Western 90 feet	August 14 through 16, 2007
Eastern 220 feet	September 24 and 25, 2007

ERRS performed excavation using a mini-excavator and/or a large excavator. ERRS loaded excavated soil directly into the bucket of a front-end loader and transported the material to a staging area at the Site, or the material was temporarily staged near the roadside on plastic sheeting prior to transport to the staging area. On-site staging areas were also lined with plastic sheeting and excavated material was covered during non-work hours to prevent migration of

contaminated material pending waste characterization analysis and transportation for disposal. Additionally, soil cuttings and decontamination water containerized in drums generated as a result of monitoring well installation were characterized for disposal with the excavation material.

A summary of waste characterization results is provided in **Attachment C**. Sampling results for excavated soil and drilling waste indicated the material was non-hazardous waste. Excavation of the soil resulted in the disposal of 319.78 tons of non-hazardous waste. A table summarizing the waste transported off site for disposal is provided below. Copies of waste manifests are provided in **Attachment D.**

SUMMARY OF SOIL DISPOSAL		
Date	**Manifest Number**	**Tonnage**
September 26, 2007	0991964	50.00
September 26, 2007	0991965	39.78
September 27, 2007	0991966	52.18
September 27, 2007	0991967	58.15
September 27, 2007	0990968	48.27
September 27, 2007	0991969	46.51
September 27, 2007	0991970	24.89
	TOTAL	**319.78**

The ERRS crew restored the ditch to original grade by placing and lightly compacting clean sand. A fabric geotextile liner was placed on the sand and covered with rip rap to restore the ditch to its original condition. The shoulder of Franklin Street along the ditch was restored by placing clean, sandy gravel.

Monitoring/Recovery Well Installation

From September 10 through September 19, 2007, Altech Tech, Inc., a subcontractor to ERRS, installed six monitoring wells (MW-52 through MW-57) and five recovery wells (R1 through R5) which were finished with a flush-mounted protective casing to monitor potential changes in contaminant movement and perform NAPL recovery, if necessary. A photographic log of monitoring and recovery well installation is provided in **Attachment E. Figure 5** depicts the locations of the newly installed monitoring wells and recovery wells. Boring logs detailing soil descriptions and well construction information are provided in **Attachment F.**

Site Regrading and Restoration

On September 25 and September 26, 2007, ERRS regraded the Site to inhibit runoff of contaminated soil. Areas adjacent to the drainage ditch, with the exception of those covered by

plant infrastructure (such as tanks and buildings) were graded such that stormwater runoff would be directed back to the Site to infiltrate rather than drain directly to the ditch. Clean sandy gravel was graded and lightly compacted over the eastern portion of the Site, the main driveway along the north boundary of the Site, and the drive through the western portion of the Site. **Figure 6** depicts the areas of the Site that were regraded and that received gravel restoration. A photographic log of Site conditions following final restoration is provided in **Attachment G.**

Health and Safety Procedures

WESTON START, ERRS, and the ERRS subcontractors performed work in accordance with the Site health and safety plan prepared by ERRS, and its subsequent amendments.

During soil excavation, sheetpile installation, and ditch excavation, WESTON START monitored volatile organic compounds (VOC) in the breathing zone at the downwind excavation perimeter using a RAE Systems ppbRAE. The ppbRAE was calibrated daily using isobutylene (10 parts per million). Air monitoring results are provided in **Attachment H.**

ERRS developed and implemented a traffic control plan (TCP) for Site activities. A TCP became necessary for worker protection as sheetpile was installed along the right-of-way on M-26 and ditch excavation and monitoring well installation occurred along a township road in areas of low to moderate vehicular traffic. Components of the TCP included the use of orange safety cones, "Men Working" signs, and reflective vests on personnel working near traffic.

All equipment contacting contaminated soil, water, and/or sediment was decontaminated at the soil staging area using wet methods. Water from wet decontamination of drilling equipment was containerized and later mixed into soil piles that were transported off the Site as non-hazardous waste. Prior to demobilization, the subcontractors decontaminated heavy equipment and tools with a pressure washer, allowing water to infiltrate the Site, prior to returning the equipment to the rental company or contractor warehouse.

CONCLUSIONS

U.S. EPA conducted a TCRA at the Florida Gas Plant Site that effectively:

- Reduces or eliminates the direct contact hazard posed by shallow gross contamination in the Franklin Street ditch as a result of the ditch excavation;
- Prevents off-site migration of gross contamination and NAPL due to the installation of a sheetpile barrier; and
- Allows for monitoring of changes in hydraulic conditions and contaminant movement, and recovery of NAPL, if necessary, through the placement of monitoring and recovery wells.

OUTSTANDING ISSUES

The following are outstanding issues related to the Site:

- Continued monitoring of the static groundwater levels, VOC concentrations in groundwater, and the presence of free product should occur to:
  - Evaluate the effectiveness of the sheetpile barrier;
  - Monitor potentially contaminated groundwater (and NAPL) that has been re-directed due to the position of the sheetpile barrier;
  - Monitor the off-site extent of NAPL contamination;
  - Monitor changes in groundwater hydraulics; and
  - Recover any contaminated groundwater or NAPL.

Should you have any questions regarding the above summary, please contact either of the undersigned at (313) 739-2500.

Very truly yours,
Weston Solutions, Inc.

for Alexandra Clark
Jennifer Numrich
WESTON START Site Lead

Alexandra Clark
Alexandra Clark
WESTON START Project Manager

Attachments