

**Field Sampling Plan Addendum  
Universal Waste Inc.  
Site No. 633009  
Utica, Oneida County, New York**

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**Prepared for:**

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# 1.0 Introduction

Ecology and Environment Engineering, P.C. (EEEEPC) has prepared this addendum to the February 2013 Field Sampling Plan (FSP) under contract to the New York State Department of Environmental Conservation (NYSDEC) (Work Assignment Number D007617-18) for an off-site remedial investigation (RI) at the Universal Waste Inc. Site (UWI Site) in the City of Utica, Oneida County, New York.

The FSP addendum was created to describe the samples and procedures associated with the fall 2014 supplemental remedial investigation (RI). Environmental samples planned for collection during this event will be subject to low-level analysis of polychlorinated biphenyls (PCBs) and the procedures described herein are intended to reduce environmental cross-contamination that could bias the PCBs results. The analytical methods for PCBs that will be employed were chosen at NYSDEC's request specifically to achieve low detection limits of PCBs in water.

Field work associated with the initial phase of the RI was performed in Summer 2013. NYSDEC requested that additional sampling and reporting activities be added to the original work assignment. The scope of work for the supplemental RI was designed to meet the following objectives:

- Evaluate the presence or absence of low level PCBs in on-site (upland) surface water, Mohawk River water, and groundwater with respect to NYSDEC ambient water quality standards (Class C Type H(FC) for surface water and Class GA for groundwater). Volatile organic compounds (VOCs) will also be analyzed as part of this additional sampling effort.
- Based on the analytical results and review of new information provided by NYSDEC, EEEPC will update the qualitative human health pathway analysis and the Fish and Wildlife Impact Analysis (FWIA) in the draft RI report prepared under the initial scope of work for this site.
- Prepare a Feasibility Study (FS) to address RI findings including evaluating up to six remedial alternatives. The FS was originally scoped under the initial work assignment. However, those funds were used to conduct expanded investigation at the site during the initial phase of the RI at the direction of NYSDEC.

Groundwater sampling will be conducted at 9, previously installed, groundwater monitoring well locations (See Figure 1-1). Sampling will be conducted using the low-flow purging method and a peristaltic pump. The use of a peristaltic pump for collecting groundwater samples was selected to reduce the potential of cross-contamination by using dedicated sample tubing. Groundwater will be analyzed for low-level PCB Aroclors by Method SW846 8082 and VOCs by Method SW846 8260C. The low level 8082 PCB Aroclor method employs a more concentrated sample extract to achieve detection limits of 0.038 micrograms/liter ( $\mu\text{g/L}$ ).

Surface water sampling will be conducted at 24 locations including the 20 locations previously sampled in 2013 (See Figure 1-2). Nine samples will be collected from upland drainage areas and 10 samples will be collected from the Mohawk River. Five additional samples will be collected from the Mohawk River upstream and downstream of the study area. All surface water

sample locations will correspond to the original locations based on GPS coordinates. Surface water grab samples will be collected using a dedicated polyethylene bailer at each location with at least 1 foot of water depth or by dipping a dedicated, glass jar where water depths are less than 1 foot. Surface water will be analyzed for PCB Congeners by Method SW846 1668 and VOCs by Method SW846 8260C. The PCB Congener method will allow for the detection of individual congeners at detection limits of 7 to 30 picograms per liter (pg/L) in the absence of interference.

## 2.0 Sampling Procedures

This section provides a summary of the field sampling activities and methodologies that will be performed during this supplemental field sampling event. The work will include surface water and groundwater sampling. EEEPC's field team will generally consist of three members, in the roles of field team leader/geologist and sampling technician/site safety officer. In addition to the procedures described in this section, all field activities will be conducted in general accordance with EEEPC's Standard Operating Procedures (SOPs) and EEEPC's 2013 Universal Waste Field Sampling Plan.

### 2.1 Monitoring Well Sampling

Groundwater samples will be collected from each of the nine established groundwater monitoring wells (Figure 1-1). Monitoring wells will be sampled using low-flow purging/sampling techniques using a peristaltic pump and dedicated Teflon-lined polyethylene tubing. The objectives and methods for the low-flow procedure are included in the United States Environmental Protection Agency (EPA) Region II Guidance document titled *Groundwater Sampling Procedure, Low Stress (Low Flow) Purging and Sampling* (EPA 1998). The primary goal of low-flow purging/sampling is to provide groundwater quality data that are representative of actual aquifer conditions with minimal alteration caused by inappropriate or variable sampling techniques. To minimize environmental cross-contamination, sample collection procedures will be following as outlined below.

- All supplies/equipment that will potentially come in contact with the samples should be transported to the sampling location inside clean, unused plastic bags (i.e. tubing, bottles, bailers, etc.).
- The sampler will don one set of clean gloves and deploy all supplies and equipment at the sampling location on clean, unused plastic sheeting. This includes items such as coolers, pails, sampling pump, water-quality meters, etc., but does not include items that will contact the sample (tubing, bottles, bailers, etc.).
- Open the cooler containing the sample jars, but do not open the bag in which they are stored. The empty sample containers will be kept in a closed plastic bag within a separate cooler at all times until the bottles are needed.
- Unlock and open the well.
- Thoroughly decontaminate the water level indicator and probe as described below under Section 2.5, Decontamination. Measure and record depth to water and total well depth from the top of inner casing.
- The sampler will doff the first set of gloves and replace with a new, clean pair. Remove the tubing from its plastic bag and place the appropriate length directly into the well without touching the ground or other surfaces. Reseal the bag containing unused tubing. Cut an appropriate length of new silicone tubing for insertion in the peristaltic pump head

and connect to the downhole tubing. A short section of Teflon-lined discharge tubing will be connected to the outlet end of the silicone tubing.

- Remove the sample jars from the bag and place on clean plastic sheeting where they will not be disturbed.
- Begin purging the well. Measure and record water quality readings in accordance with the existing FSP. If turbidity readings remain above 50 NTUs after other parameters have stabilized, a filtered sample will also be collected for PCB analysis. Filtered samples will only be collected if requested by NYSDEC. If collected, filtered sample results will be used for comparison with unfiltered sample results due to the proclivity of PCBs to adhere to particulates in the water.
- Upon completion of purging, the sampler will remove the current pair of gloves and don a new, clean pair immediately prior to sampling and then fill the necessary sample containers without allowing the tubing to contact the inside of sample jars. The sampler should position him/herself downwind of the sample jars being filled to avoid the potential for ambient dust from clothing, etc. to be blown into the sample.
- After filling and closing the sample jars, label them appropriately and place them directly into a clean plastic bag within a sample cooler with ice and demobilize from the sampling location.

Sample numbers, containers, holding times and preservatives are summarized in Table 2-1. Groundwater samples from each monitoring well will be submitted for PCB Aroclor analysis using EPA method 8082 – low level and VOCs plus Tentatively Identified Compounds (TICS) using EPA method 8260.

## **2.2 Surface Water Sampling**

A total of 24 surface water samples will be collected from the onsite drainages, stream, and outfall as well as the Mohawk River (See Figure 1-2). Nine samples will be collected from upland drainage areas, 10 samples will be collected from the river at previous sampling locations, and the remaining five will be collected from the Mohawk River upstream and downstream of the study area. To minimize environmental cross-contamination, sample collection procedures will be following as outlined below.

### **Procedures**

- Navigate to the sampling location. Approach the location from downwind if approaching on foot or from the bow of the boat when oriented into the current. Avoid disturbing the substrate.
- All supplies/equipment that will potentially come in contact with the samples should be transported to the sampling location inside clean, unused plastic bags (i.e. tubing, bottles, bailers, etc.).

- The sampler will don one set of new, clean gloves and deploy all supplies and equipment at the sampling location on clean, unused plastic sheeting.
- Open the cooler containing the sample jars, but do not open the bag in which they are stored. The empty sample containers will be kept in a closed plastic bag within a separate cooler at all times until the bottles are needed.
- The sampler will doff the first set of gloves and replace with a new, clean pair.
- Remove the sample jars from the bag and place on clean plastic sheeting where they will not be disturbed.
- The bailer will be removed from its plastic sheath without coming into contact with the surroundings. The bailer will slowly be lowered into the surface water to collect the sample.
- Fill the appropriate sample containers and cap securely. Only rest the bailer on clean, new plastic sheeting. Repeat sampling with bailer as necessary to fill all the required bottles.
- At locations where the water is too shallow to use a bailer, the sample will be collected by immersing a clean, unused, glass bottle into the surface water to collect the required volume and fill the sample jars.
- After filling and closing the sample jars, label them appropriately and place them directly into a clean plastic bag within a sample cooler with ice and demobilize from the sampling location.
- Document the sampling location with GPS and record in the logbook.
- Document the approximate depth and flow of surface water body.

Sample numbers, containers, holding times and preservatives are summarized in Table 2-1. Surface water samples from each location will be submitted for PCB Congeners using EPA method 1668 and VOCs plus TICs using EPA method 8260.

### **2.3 Sample Containers, Labeling, Packaging and Shipping, and Custody**

The volumes and containers for the samples are presented in Tables 2-1. Sample preservation and holding time requirements also are presented in this table.

#### **Sample Labeling**

All samples will be assigned a unique sample identifier. Samples will be identified by matrix and sample type and labeled with a sequential number. Examples are as follows:

- Groundwater samples: MW06-0914

- MW06 = Monitoring well designation
- 0914 = month and year of sample collection
  
- Surface water samples: SW01-0914
  - SW01 = Surface water designation
  - 0914 = month and year of sample collection

If filtered samples are collected, the filtered portion will be assigned a unique identifier by adding “FLT” after the location identifier; e.g., “MW06-FLT-0914”. Field duplicate samples will be designated with “FD” after the sample designation; e.g., “MW-06-0914-FD”.

## **2.4 Field QC Samples**

Field QC samples include field duplicates, trip blanks, rinsate blanks, and additional volume for laboratory matrix spike/matrix spike duplicate (MS/MSD) analyses.

- Field duplicates will be collected from aqueous samples at a frequency of one per 20 samples per matrix.
  
- Trip blanks for water samples will be prepared by the laboratory, transported to the site with the laboratory bottles, and returned to the lab for analysis at the rate of one per shipping cooler containing water samples collected for VOC analysis.
  
- Two rinsate (equipment) blank samples will be collected: one from unused sample tubing used for groundwater sampling (both Teflon-lined polyethylene and silicone pump tubing together) and one from an unused bailer used for surface water sample collection. Rinsate blanks will be analyzed for both PCBs and VOCs.
  
- Extra volume will be collected for laboratory MS/MSD analysis and will be collected from aqueous samples at a frequency of one set per 20 samples.

## **2.5 Decontamination**

Sample collection media will be considered disposable; however, items such as the water level indicator will have to be cleaned thoroughly after each use.

- Physical removal of foreign matter
  
- Laboratory-grade detergent solution
  
- Tap water rinse
  
- Distilled/deionized water rinse
  
- Acetone solvent rinse (pesticide grade)
  
- Air dry

- Distilled/deionized water rinse

Wash water will be collected with well purge water and containerized in a New York State Department of Transportation-approved 55-gallon steel drum. Waste water will be properly disposed of following receipt of sampling results.

**Table 2-1 Summary of Analytical Methods, Preservatives, Containers, and Holding Times Universal Waste, Inc. Site**

Parameter	Method	Number of Samples	QC Samples <sup>a</sup>	Rinsate Blanks	Containers/Preservative <sup>b</sup> per Sample	Holding Time
<b>Surface Water</b>						
Volatile Organic Compounds + TICs	8260	24	2	1	Three 40-mL glass vials with septa preserved HCl < pH 2	14 days for waters with chemical preservative, and 7 days for unpreserved sample
Polychlorinated Biphenyl Congeners	1668	24	2	1	Two 1-L amber glass bottles	5 days/40 days <sup>c</sup>
<b>Ground Water</b>						
Volatile Organic Compounds + TICs	8260	9	1	1	Three 40-mL glass vials with septa preserved HCl < pH 2	14 days for waters with chemical preservative, and 7 days for unpreserved sample
Polychlorinated Biphenyl Aroclors	8082 – low level	9	1	1	Two 1-L amber glass bottles	5 days/40 days <sup>c</sup>

See Notes and Key below.

Notes:

- A) QC Samples is the number of field duplicates and the number of MS/MSD samples required. If number of QC samples listed is 2, collect 2 field duplicates and extra volume with 2 samples for MS/MSD. Field duplicates and MS/MSD are to be collected at a rate of 1 per 20 samples.
- B) All samples to be cooled to 4±2°C. Sample containers must have Teflon-lined lids. Holding times are based on the times of sample collection and are consistent with NYSDEC requirements.
- C) Holding time is 5 days from collection to extraction and 40 days from extraction to analysis.

Key:

- L = Liter.
- HCl = hydrochloric acid
- mL = Milliliter.
- TICs = tentatively identified compounds
- VOC = Volatile organic compounds.



-  Monitoring Well Location
-  Approximate Project Work Area Boundary
-  Approximate Parcel Boundary

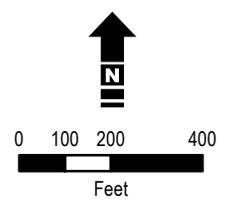
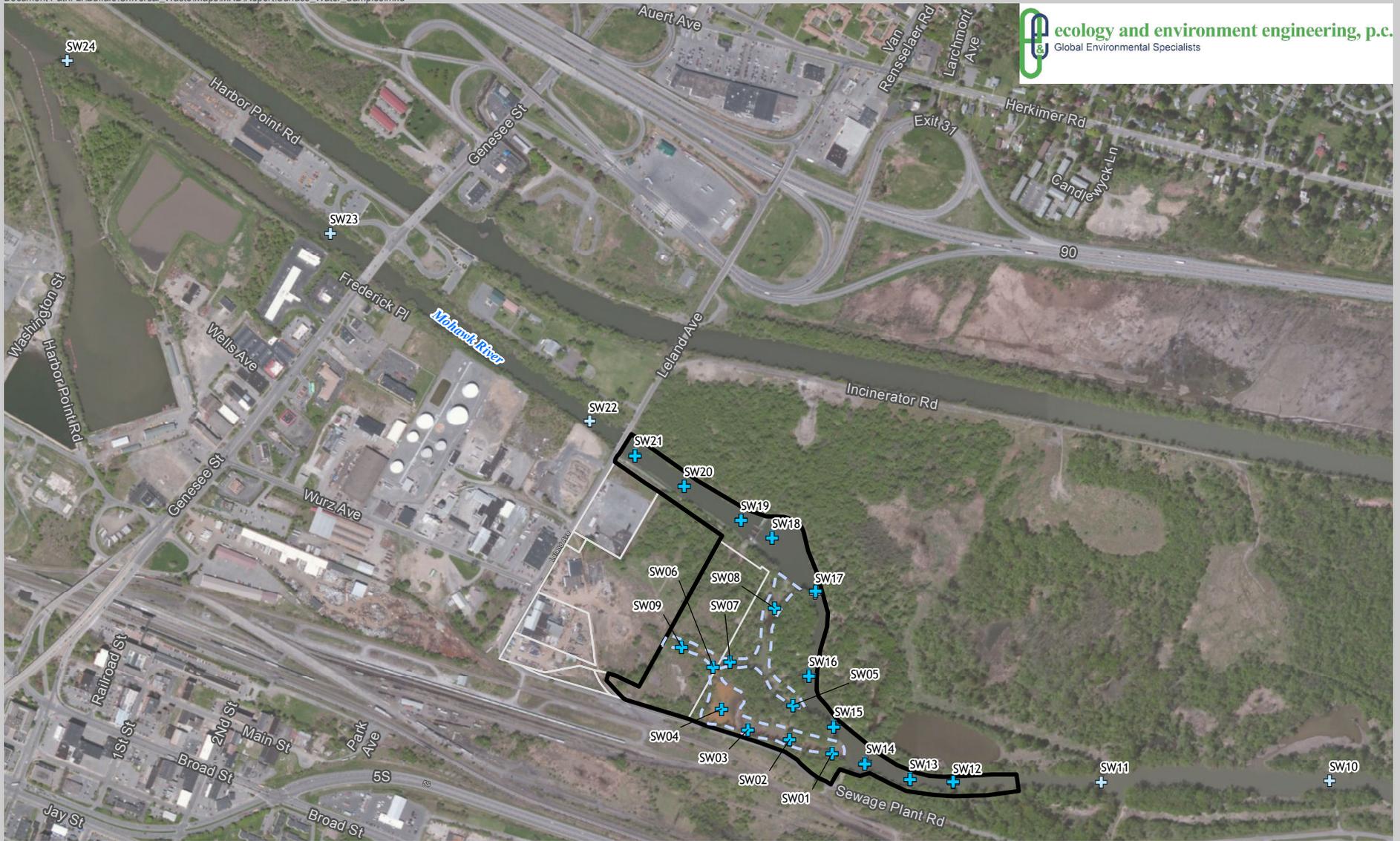


Figure 1-1  
Monitoring Well Locations  
UWI Off-Site Study Area  
Utica, NY



Source: ESRI 2010

-  Surface Water Sample Location
-  Background Surface Water Sample Location
-  Approximate UWI Off-Site Study Area
-  Approximate Inferred Outfall Drainage Pathway
-  Parcel Boundary

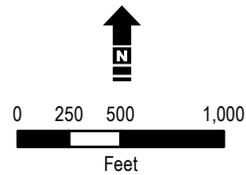


Figure 1-2  
Surface Water Sample Locations  
UWI Off-Site Study Area  
Utica, NY