AECOM

March 28, 2017

Harry D. Warner, P.E.
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NYSDEC Region 7
Division of Environmental Remediation
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Subject: Carrier Corporation, Thompson Road Facility, Syracuse, New York
Corrective Action Order — Index CO 7-20051118-4
Site Registry No.: 734043
Carrier-DeWitt Landfill (AOC G)
Supplemental RCRA Facility Investigation Work Plan

Dear Mr. Warner

On behalf of United Technologies Corporation (UTC), AECOM Technical Services, Inc. (AECOM) is hereby submitting the attached Supplemental RCRA Facility Investigation Work Plan for your review and approval. The work plan addresses proposed investigation activities at the former Carrier-DeWitt Landfill Area of Concern G.

Please call me at (716) 923-1150 if you have any questions.

Sincerely,

Robert E. Murphy

Robert E. Murphy, PE
Project Manager
Robert.E.Murphy@AECOM.com

cc: Mr. Michael Belveg, NYSDEC
Mr. Gary Priscott, NYSDEC (Hard Copy)
Mr. Mark Sergott, NYSDOH
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Ms. Kathleen McFadden, UTC

Environment

Prepared For:
United Technologies Corp.
Shared Remediation Services
Farmington, CT

Prepared by:
AECOM
Buffalo, NY
60310231
March 2017

RCRA FACILITY INVESTIGATION WORK PLAN
SUPPLEMENTAL INVESTIGATION
UTC/CARRIER SITE
CARRIER-DEWITT LANDFILL (AOC G)
THOMPSON ROAD, SYRACUSE, NY

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NYSDEC Site Registry #734043

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List of Acronyms

AOC	Area of Concern
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CLP	Contract Laboratory Program
DER	Department of Environmental Remediation
DQO	Data Quality Objective
DUSR	Data Usability Summary Report
ft.	Foot/Feet
GSIP	Generic Site Investigation Protocol
GPS	Global Positioning System
HASP	Health and Safety Plan
HAZWOPER	Hazardous Waste Operations and Emergency Response
kg	Kilogram
mg	Milligram
MS/MSD	Matrix Spike/Matrix Spike Duplicate
NYSDEC	New York State Department of Environmental Conservation
PARCC	Precision, Accuracy, Representativeness, Comparability, and Completeness
PCB	Polychlorinated Biphenyl
QA	Quality Assurance
QAPP	Quality Assurance Project Plan
QC	Quality Control
RCRA	Resource Conservation and Recovery Act
SAP	Sampling and Analysis Plan
SH&E	Safety, Health & Environmental
SPDES	State Pollutant Discharge Elimination System
THA	Task Hazard Analysis
UFPO	Underground Facilities Protection Organization
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
UTC	United Technologies Corporation

1.0 Introduction

On behalf of United Technologies Corporation (UTC), AECOM USA, Inc. (AECOM) is pleased to provide this Resource Conservation and Recovery Act (RCRA) Facility Investigation Work Plan (Work Plan) for a supplemental investigation at the former Carrier Corporation-DeWitt Landfill. The submittal of this Work Plan is in response to recommendations provided by AECOM in the RCRA Facility Investigation Report (RFI Report), dated August 2015 and New York State Department of Environmental Conservation (NYSDEC) comments on the RFI Report, dated July 7, 2016.

The area of investigation is located on an 83 acre parcel located west of the Carrier facility and south of Route 298. The "Site" or Area of Concern G (AOC G) is considered the entire parcel plus any area where fill extended offsite. The Site consists of the former 11 acre landfill located in the south central portion of the Site, wetlands north and west of the landfill, and the Thompson Road parking lot to the east and northeast of the landfill. In past documents, mention of AOC G was generally in reference to the former landfill only.

The main feature of the Site is the landfill, which rises between 8 to 10 feet above surrounding grade and is heavily wooded. The landfill was reportedly used for construction and demolition debris disposal, but was never covered with a formal cap. Wetlands are located to the immediate west and north of the landfill. Reportedly, the wetlands formed as a result of depressions formed following surface soil mining.

Several investigations, dating back to 1987, were performed to characterize the landfill contents and possible associated impacts on surface soil, subsurface soil, groundwater, surface water, and sediment. An extensive amount of data has been gathered through the investigations, but some data gaps still remain. This Work Plan presents a summary of the previous investigations and proposes additional Site investigation activities to obtain data to close the identified data gaps.

2.0 Site History and Characteristics

2.1 Site Location

The Site is located south of New York State Thruway Interchange 35 and southwest of Carrier Circle. The Parcel address is 6463 Thompson Road in Syracuse, New York (**Figure 1)**. The Site is bordered to the east by Thompson Road, to the northeast by a McDonalds Restaurant and a hotel, to the north by Sanders Creek, to the west by Court Street and commercial properties, and to the south by a commercial property used for tractor trailer parking.

2.2 Physical Setting

The 11 acre landfill is located in the south-central portion of the Site. The landfill surface is approximately 8 to 10 feet (ft) high at its highest point and is overgrown with shrubbery and trees. Scrap metal, concrete, coal ash, and asphalt debris have been observed at the ground surface in some areas. Concrete and asphalt are most evident in the southwest portion of the landfill and wetland and ponded water are present to the north and west of the landfill.

Historical information suggests that the wetland was formed as a result of surface mining and evidenced by some east-west linear features in the northern portion of the wetland as shown in the United States Geological Survey (USGS) topographic quadrangle map (**Figure 1**) and aerial photograph (**Figure 2**).

The Site is located in a developed area. The eastern side of the Site is bordered by Thompson Road and the Carrier facility. The majority of the southern, western and northern sides of the Site are bordered by commercial businesses.

2.2.1 Local Geology

The Site area is underlain by varying amounts of urban fill, the composition of which varies from location to location. Beneath the fill, or at the surface where fill is absent, the surface materials consist of topsoil or loamy surficial soils.

The surface materials are underlain by intermixed glacial till and lake deposited silts and clayey silts. The silts are generally brown to brownish gray with some iron staining and yellow-red mottling, stiff to very stiff, dense, and brittle. Fine-grained sands and dense clays were frequently intermixed with the silts. Generally soft, gray clay with low plasticity underlies these deposits. The clay in underlain by compact fine to coarse sands. This sand deposit is often underlain by a dense basal till. The Vernon Shale Member of the Salina Group underlies the area. The red Vernon Shale is present approximately 40 to 60 ft below ground surface (bgs).

2.2.2 Site Topography

The highest point of the former landfill is approximately 412 ft above mean sea level (ASL). The surface elevation surrounding the landfill, excluding the adjacent wetland, ranges from approximately 404 to 409 ft ASL. The land surface slopes from approximately 398 ft ASL at the base of the western side of the landfill to 394 to 395 ft ASL at the western boundary of the wetland.

2.2.3 Site Drainage

Site drainage patterns are shown on **Figure 2**. Surface water runoff from the landfill area flows primarily to the south to a swale located along the south property boundary where drainage is

directed westward into the wetland. The swale also receives drainage from the adjacent commercial property as it flows to the wetland.

Surface water from the eastern side of the landfill flows through a swale between the landfill and the parking lot. The swale trends northward to a wetland area.

Surface water flowing west off of the western and southern portions of the landfill is detained in the wetland. Surface water leaves the western wetland at a low point in the southwest corner of the open water. Surface water enters an off-site ditch system that drains south along the western side of a power line right of way (ROW), through a marshy pond and finally into the South Branch of Ley Creek.

If the water level in the northern wetland area reaches approximately 399 ft ASL, it can cross into the northern swale that flows to Sanders Creek. Although there is evidence of seepage into the northern swale, there is no evidence of flow in the upper reaches of the swale, indicating that the northern wetland rarely, if ever, flows northward to Sanders Creek. As water levels in the wetlands rise during the wet season, they discharge southward to the South Branch of Ley Creek before they reach the elevation of the northern swale to Sanders Creek.

3.0 Previous Investigations

Previous investigations identified polychlorinated biphenyls (PCBs), volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), and metals at concentrations exceeding NYSDEC Soil Cleanup Objectives (SCOs) within the surface and subsurface landfill material at the Site. VOCs were detected in groundwater near the center of the landfill with a plume extending northwest toward the adjacent wetland at concentrations that exceeded the New York State Ambient Water Quality Standards and Guidance Values (AWQS).

The previous investigations started with Wehran Engineering, P.C, (Wehran) in May 1987, followed by Clough Harbour and Associates, LLP (CHA) in October 2008, EnSafe, Inc. (EnSafe) from December 2008 through May 2011, and finally AECOM with investigations in 2013 and 2014. Because a discussion of each investigation would be too cumbersome to include within the body of this Work Plan, AECOM prepared Appendix A, which presents a summary of the scope of work and findings for each investigation. **Figure 3** identifies the investigation locations from the previous investigations.

Wehran's work was the first environmental investigation at the Site. Essentially, each phase of the subsequent investigations attempted to fill in data gaps identified during the previous investigation(s). The scope of work for the investigation proposed in this Work Plan is based on data gaps identified in AECOM's 2015 RFI Report and, as summarized in Appendix A, NYSDEC's request for some additional data.

Based on the cumulative findings of previous investigations, the objectives of the proposed supplemental investigation are to:

- Delineate impacts at depth at wetland sampling point F-1 (sediment and underlying soil);
- Identify groundwater quality in the shallow water-bearing zone along the western side of the landfill;
- Evaluate the apparent mounding condition in the shallow water-bearing zone in the central portion of the landfill;
- Determine the vertical and horizontal extent of groundwater contamination;
- Determine the southern extent of landfill materials; and
- Evaluate ecological impacts at the Site.

4.0 Scope of Work

The purpose of this Work Plan is to specify a sampling and analysis program capable of yielding representative samples sufficient to meet the above-identified objectives. Meeting those objectives will be accomplished through the following activities:

- Delineate impacts at depth at wetland sampling point F-1 (sediment and underlying soil) through the collection of additional sediment and soil samples at depth at the F-1 and four surrounding locations.
- Identify groundwater quality in the shallow water-bearing zone along the western side of the landfill through the installation and sampling of additional shallow monitoring wells.
- Evaluate the apparent mounding condition in the shallow water-bearing zone in the central portion of the landfill through the collection of synchronous rounds of groundwater levels from all Site wells.
- Determine the vertical and horizontal extent of groundwater contamination through the collection of groundwater samples from all existing wells and the sampling of the above-stated additional shallow monitoring wells, one additional deep monitoring well, and additional wells south of the landfill.
- Determine the southern extent of landfill materials through drilling, soil sampling, and groundwater sampling at locations on the private property used for tractor trailer parking immediately south of the landfill.
- Due to the presence of contaminants in soil and sediment, evaluate the potential ecological impacts at the Site.

Specific investigation activities are summarized below.

- Advance five shallow borings to minimum depths of 4 ft to collect samples of sediment and underlying soil in the F-1 area;
- Advance four soil borings, which will be completed as shallow wells, on the western side of the landfill;
- Advance one boring, which will be completed as a deep monitoring well, on the north-western side of the landfill (downgradient/northwest of MW-29D);
- Advance four soil borings to the south of the landfill, using three of these borings as temporary wells and converting the fourth boring to a permanent shallow monitoring well;
- Collect select soil samples from all new borings for laboratory analyses;
- Collect groundwater samples from all Site wells for laboratory analyses;
- Collect two synchronous rounds of water levels, approximately two weeks apart, from all accessible and functional Site monitoring wells, piezometers, and stream/wetland gauging stations;

- Perform a location and elevation survey of new investigation locations;
- Analyze soil, sediment, and groundwater samples for contaminants of concern (e.g., VOCs, SVOCs, PCBs, and/or metals) as appropriate per the discussions in the following sections; and
- Perform a Fish and Wildlife Resource Impact Assessment (FWRIA) in accordance with NYSDEC guidance.

The proposed investigation locations are identified in **Figure 4**. The actual locations may vary based on site conditions.

4.1 General Field Activities

General field activities include site meetings, mobilization, health and safety planning, hand angering, hollow stem auger drilling, well installation, well development, soil and groundwater sampling and analytical testing, surveying, groundwater and surface water monitoring, decontamination, and handling of investigation-derived waste (IDW).

Details regarding individual field procedures (e.g., well development, groundwater sampling, etc.) are included in the Generic Site Investigation Protocol (GSIP). Detailed descriptions of the analytic protocols presented in the Quality Assurance Project Plan (QAPP). All activities will be performed in accordance with the site-specific Health and Safety Plan (HASP).

Field work on UTC-owned property will be coordinated with UTC. All AECOM personnel and onsite subcontractors will have successfully completed the UTC online training for Environment, Health and Safety Guidelines for Level III Contractors. A community air monitoring program (CAMP) will be performed during intrusive Site investigation activities.

4.1.1 Mobilization

Following approval of this Work Plan by NYSDEC, the Underground Facilities Protection Organization (UFPO) will be contacted at 1-800-962-7962 to clear exploration locations. Utility clearance requires three working days by UFPO. AECOM will retain a subcontractor to perform a utility location survey using geophysical techniques for drilling locations south of the landfill in the tractor trailer parking lot. The use of a utility location survey for the borings in the landfill is not warranted as no utilities suspected to be present within the landfill.

The mobilization effort will include obtaining access to perform investigation activities on offsite properties (e.g., drilling in the tractor trailer lot south of the landfill).

4.1.2 Health & Safety

Personnel performing work at the job site will be qualified for Hazardous Waste Operations and Emergency Response (HAZWOPER) duty in accordance with 29 CFR 1910.120. Information on hazards specific to the project are presented in the Task Hazard Analyses (THAs) contained in the site-specific HASP.

It is anticipated that the work to be completed on the Site will be performed with Level D personal protection equipment (PPE). Should health and safety monitoring during field activities indicate a

threat to field personnel or warrant an upgrade beyond Level D protection, work will stop and Site conditions will be re-evaluated.

Prior to the commencement of daily activities, a tailgate meeting will be conducted by the AECOM Site Supervisor to review the site-specific health and safety requirements and applicable THAs. Attendance at the daily tailgate meeting is mandatory for all personnel at the Site covered in this plan and will be documented on the attendance form. Safety training documentation will be maintained in the project file by the AECOM Site Supervisor. All field personnel have the right and duty to stop work when, in their opinion, conditions are unsafe and to assist in correcting these conditions. Additional health and safety details are be provided in the Site-specific HASP.

4.1.3 **Wetland Sediment and Soil Sampling**

Sediment and soil samples will be collected from the previous F-1 and F-1-01 through F-1-04 locations using a stainless steel hand auger. At each location, the auger will be advanced to a minimum depth of 4 ft. During sampling, the recovered material will be inspected for visual and olfactory evidence of contamination and screened for volatile organic vapors using a photoionization detector (PID). If evidence of impacts is found at the 4-ft depth, the boring will be advanced deeper until no evidence of impacts is found.

At each boring, soil samples will be retained from each 1-ft interval for laboratory analysis of PCBs and total organic carbon (TOC – needed to calculate equilibrium-based sediment guidance values).

The hand auger will be decontaminated between sampling locations.

4.1.4 **Drilling and Monitoring Well Installation**

Drilling will be accomplished using a track-mounted drill rig with direct-push and hollow stem auger drilling capabilities. Prior to drilling, each boring in the tractor trailer parking lot south of the landfill will be manually pre-cleared to a depth of approximately 5 ft to identify and avoid subsurface structures and/or utilities.

Eight shallow soil borings will be advanced. Five of the eight borings will be completed as permanent shallow monitoring wells. The remaining three borings, located south of the landfill, will be used as temporary wells that will be abandoned following drilling and collection of groundwater samples. The eight borings will be advanced approximately 7 ft into the groundwater table, a total estimated depth of approximately 20 ft below ground surface (bgs). Soil samples will be continuously collected using either a split-spoon sampler or Macro core sampler. Upon recovery, each sampler will be inspected for visual and olfactory evidence of contamination and screened for volatile organic vapors using a PID. One soil sample above the water table will be retained from each boring for laboratory analysis. The sample will be selected from the interval of greatest apparent contamination. If no apparent contamination is present, the sample will be retained from the interval just above the water table. If evidence of impacts (staining, odor, elevated PID reading) exists in soils beneath the water table, one additional soil sample will be collected beneath the water table from the interval of greatest apparent impacts. Soil samples will be analyzed for VOCs, SVOCs, and PCBs.

A groundwater sample will be collected from each of the three temporary well borings. Upon drilling to the target depths, a 1-inch diameter well screen will be placed in the temporary well boring to facilitate collection of groundwater using a peristaltic pump. Each boring will be backfilled

with cement/bentonite grout following collection of the groundwater sample. The samples will be analyzed for VOCs, SVOCs, PCBs, and RCRA metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver).

Each deep well boring will be advanced in two stages. Initially, the boring will be advanced approximately 4 ft into the confining clay unit, a depth of approximately 20 to 30 ft, using 6 ¼-inch hollow stem augers while continuously collecting soil samples with a split-spoon sampler. A 4-inch diameter permanent steel casing will be installed through the augers and grouted into the clay as the augers are slowly removed. After the grout has cured for at least 24 hours, the boring will be advanced 10 to 15 ft into the sand unit underlying the clay using mud-rotary drilling. Soil samples will be collected beneath the permanent casing using a split-spoon sampler advanced at 5-ft intervals.

The permanent shallow wells will be completed as 2-inch diameter polyvinyl chloride (PVC) monitoring wells with 10-ft long well 0.01-inch slotted screens spanning the water table. A 20-40 mesh sand pack will be placed from the bottom of the boring to approximately 2 ft above the screen and riser coupling. A 2-ft thick bentonite seal will be placed above the sand pack. Cement/bentonite grout will be placed above the bentonite seal to approximately 1 ft bgs. The wells will be completed with 4-inch diameter steel protective stick-up casings set in concrete, except for the one well located in the tractor trailer parking lot, which will be completed with a flush-mount casing.

The deep well will be completed as 2-inch diameter PVC monitoring well with 10-ft long well 0.01-inch slotted screen placed at the bottom of the boring. A 20-40 mesh sand pack will be placed from the bottom of the boring to approximately 2 ft above the screen and riser coupling. A 2-ft thick bentonite seal will be placed above the sand pack. A cement/bentonite grout will be placed above the bentonite seal to grade. The 4-inch permanent casing will be fitted with a locking cap and function as the protective stick-up casing for the deep well.

The permanent monitoring wells will be properly developed by surging and pumping. Water quality measurements will be recorded periodically during the development process. Development will continue until water quality parameters stabilize. Development water will be containerized for proper offsite disposal.

4.1.5 **Community Air Monitoring**

Community air monitoring will be performed during intrusive activities. Particulate concentrations will be monitored at the upwind and downwind perimeter of the active work area on a continuous basis or as otherwise specified. Upwind concentrations will be measured to establish Site-specific background concentrations. In the event of minimal wind or frequent changes in wind direction, multiple locations will be monitored (i.e., three monitoring locations surrounding the active work area).

Particulate monitoring will be performed using real-time monitoring equipment capable of measuring particulate matter less than 10 micrometers in size (PM-10) and capable of integrating over a period of 15 minutes (or less) for comparison to the airborne particulate action level. Each particulate monitor will be calibrated daily with a filtered air sample. Each air monitoring instrument will be continuously downloaded and saved electronically to a dedicated computer located on-Site.

The New York State Department of Health (NYSDOH) Generic Community Air Monitoring Plan (CAMP) specified action level of 0.10 milligrams per cubic meter (mg/m^3) above background for PM-10 will be used to determine whether modifications to given processes are required. If the downwind

measurement of PM-10 is greater than 0.10 mg/m^3 above the upwind background level, or if dust is observed leaving the project area, dust suppression techniques (i.e., misting surfaces with water, or covering open soil piles) will be implemented to reduce the generation of fugitive dust. Furthermore, if the action level of 0.15 mg/m^3 (above background) is exceeded, work activities will be ceased and site work activities will be re-evaluated.

The table below describes the action levels for perimeter particulate air monitoring and the associated responses to each level.

Action Levels for Perimeter Particulate Air Monitoring

Action Level	Response
Downwind particulate concentrations 0.10 mg/m^3 greater than upwind particulate monitor sustained over 15 minute average	Dust suppression techniques are employed
Downwind particulate concentrations 0.15 mg/m^3 greater than upwind particulate monitor sustained over 15 minute average	Work halted and dust suppression techniques evaluated. Work continues once dust suppression techniques are proven successful

4.1.6 Groundwater Monitoring and Sampling

The 24 existing AOC G monitoring wells and the six new monitoring wells will be sampled approximately one week after development of the new wells. Prior to sampling, a synoptic round of water levels will be recorded from all wells, piezometers, and wetland/stream gauging locations. Well and piezometer levels will be recorded using an electronic interface probe. A second round of water levels will be recorded approximately two weeks later.

Existing Shallow Wells				Existing Deep Wells	
TR-06	TR-07	TR-08	TR-10	TR-09D	TR-13D
TR-11	TR-12	TR-15	TR-16	TR-14D	TR-25D
TR-17	TR-18	TR-19	TR-20	TR-26D	TR-27D
TR-21	TR-22	TR-23	TR-24	TR-28D	TR-29D

Existing well construction information is provided in **Table 1**.

The groundwater samples will be collected using the low-flow sampling procedure and analyzed for VOCs, SVOCs, PCBs, and RCRA metals.

4.1.7 Sample Analyses

Table 2 presents, per sample matrix, the analytical methods, volumes, preservation and holding times. For PCBs in groundwater, analyses will be performed on filtered and unfiltered samples. The samples will be filtered in the field using disposable inline 0.45 micron filters. All sediment, soil, and groundwater samples will be preserved, handled and shipped following chain-of-custody procedures as identified in **Table 3**.

4.1.8 **Decontamination Procedures and IDW Management**

To avoid cross contamination, sampling equipment will be decontaminated between samples and locations. Decontamination procedures specific to each of the field activities are described in the GSIP.

PPE (e.g., latex gloves) and disposable sampling equipment will be placed in plastic garbage bags for disposal as solid waste. Soil cuttings and water generated during drilling, well development, and groundwater sampling will be placed in 55-gallon drums for offsite treatment/disposal.

Representative samples of the IDW will be collected for waste characterization analyses.

4.1.9 **Fish and Wildlife Impact Analysis**

In the 2015 RFI Report, AECOM identified some constituents (e.g., PCBs and metals) that were present in the sediment at concentrations exceeding NYSDEC sediment guidance values. To evaluate potential ecological impacts, AECOM will perform a FWRIA in accordance with NYSDEC's *Fish and Wildlife Impact Analysis for Inactive Hazardous Waste Sites (FWIA)*, dated October 1994.

The FWIA is a stepwise process developed to determine the nature and extent of ecological impacts from hazardous waste sites in New York State. There are five steps that may be included in the FWIA; each step includes decision points for determining when the process is complete and further assessment is unnecessary. The objective of each step is summarized below:

- Step I - identify fish and wildlife resources that exist on and/or adjacent to the Site.
- Step II -determine the impacts of Site-related contaminants on fish and wildlife resources.
- Step III – evaluate the effects of the remedial alternatives on the productivity and diversity of fish and wildlife resources.
- Step IV – perform a detailed delineation of resources affected by contamination or construction activities, identify methods of protection for fish and wildlife resources, and provide plans for site restoration/replacement of resources.
- Step V – implement a monitoring program to insure that the work performed complies with design specifications as they pertain to fish and wildlife resources, evaluate the efficacy of the remedial actions, and determining the effectiveness of the remedial measures over time.

5.0 Quality Assurance/Quality Control

A QAPP has been prepared in support of the investigation activities to check the accuracy and precision of data collection during the Site characterization and data interpretation activities. The QAPP specifies the Data Quality Objectives (DQOs) for the project and identifies the principal organizations involved in verifying achievement of data collection goals. Data collected and analyzed in conformance with the DQO process described in the QAPP will be used in assessing the overall level of uncertainty associated with decisions related to this Site. The QAPP has been prepared in accordance with USEPA's Requirements for Quality Assurance Project Plans for Environmental Data Operations; the USEPA Region II Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Quality Assurance Manual, and NYSDEC's DER-10 Technical Guidance for Site Investigation and Remediation (May 2010).

5.1 Scope of the QAPP

The QAPP was prepared to provide QA guidelines to be implemented during the investigation activities. This document may be modified for subsequent phases of investigative work, as necessary. The QAPP provides:

- A means to communicate to the persons executing the various activities exactly what is to be done, by whom, and when;
- A culmination to the planning process that ensures that the program includes provisions for obtaining quality data (e.g., suitable methods of field operations);
- A historical record that documents the investigation in terms of the methods used, calibration standards and frequencies planned, and auditing planned;
- A document that can be used by the Program Manager and QA Officer to assess if the activities planned are being implemented and their importance for accomplishing the goal of quality data;
- A plan to document and track project data and results; and
- Detailed descriptions of the data documentation materials and procedures, project files, and tabular and graphical reports.

The QAPP is primarily concerned with the quality assurance and quality control aspects of the procedures involved in the collection, preservation, packaging, and transportation of samples, field testing, record keeping, data management, chain-of-custody procedures, laboratory analyses, and other necessary matters to assure that the investigation activities, once completed, will yield data whose integrity can be verified.

5.2 Organization and Responsibility

The principal organizations involved in verifying achievement of data collection goals for the project include NYSDEC, UTC, AECOM, and the independent environmental laboratory.

Roles, responsibilities, and required qualifications of these organizations are discussed in Section 1.2 of the QAPP.

5.3 Objectives for Measurement Data

DQOs for measurement data in terms of sensitivity and precision, accuracy, representativeness, comparability, and completeness (PARCC) parameters are established so that the data collected are sufficient and of adequate quality for their intended use. Data collected and analyzed in conformance with the DQO process described in the QAPP will be used in assessing the uncertainty associated with decisions related to this Site. The overall objectives and criteria for assuring quality for this effort are discussed in Section 4.2 of the QAPP.

5.4 Data Usability Evaluation

Data validation will be performed by an AECOM chemist using current methods and quality control criteria from the USEPA's Contract Laboratory Program (CLP) National Functional Guidelines for Organic Data Review, and CLP National Functional Guidelines for Inorganic Data Review. The data review guidance will be used only to the extent that it is applicable to the SW-846 methods; SW-846 methodologies will be followed primarily and given preference over CLP when differences occur. In addition, results of blanks, surrogate spikes, matrix spike/matrix spike duplicates (MS/MSDs), and laboratory control samples will be reviewed/evaluated by the data validator. Sample analytical data for each sample matrix will be evaluated. The data validator will also evaluate the overall completeness of the data package. Completeness checks will be administered on data to determine whether deliverables specified in this QAPP are present. The reviewer will determine whether all required items are present and request copies of missing deliverables. The data validation results will be presented in a Data Usability Summary Report (DUSR).

6.0 Reporting and Schedule

Following receipt of NYSDEC approval of this Supplemental RFI Work Plan, AECOM anticipates that investigation activities will begin in the summer of 2017. Initial activities will include gaining access approval to work on the tractor trailer property south of the landfill.

Following completion of investigation activities, AECOM will prepare an RFI Report that will include results associated with the data collection and field investigation efforts. The RFI Report will incorporate findings from previous investigations and will include, but not be limited to, the following components:

- Site history and summary of previous investigations
- Purpose and scope of the investigation;
- Organization(s) involved;
- Amount and type of data collected;
- Quality (reliability) of data collected;
- Methods of investigation/equipment employed;
- Methods of analyses and interpretations;
- Figures showing locations of field investigative activities;
- Tabulated analytical results;
- DUSR;
- Boring, well development, and sampling purge logs;
- Evaluation of field investigative results and data;
- Figures showing analytical results and groundwater flow direction;
- Figures showing geologic cross sections through the landfill;
- Figures showing areas/extent of impacts;
- Top of clay contour map; and
- Conclusions and recommendations.

The RFI Report will provide an evaluation of Site conditions taking previous investigation findings into consideration. A draft RFI Report will be provided to UTC for review and comment. Following receipt and incorporation of UTC comments, AECOM will submit the report for NYSDEC review and comment. AECOM will then finalize the document following receipt of NYSDEC comments.

Tables

Table 1
Well Information
UTC/Carrier AOC G RFI

Well ID	Install Date	Total Depth	Total Well Depth	Screen Interval	Well Material
TR-05	12/16/2008	14	14*	4 - 14*	2" PVC
TR-06	12/17/2008	14	12*	2 - 12*	2" PVC
TR-07	12/16/2008	14	12*	2 - 12*	2" PVC
TR-08	12/15/2008	14	12*	2 - 12*	2" PVC
TR-09D	6/21/2009	59	59	49 - 59	2" PVC
TR-10	6/22/2009	15.5	15.5	5 - 15.5	2" PVC
TR-11	6/23/2009	15	15	5 - 15	2" PVC
TR-12	6/23/2009	15	15	5 - 15	2" PVC
TR-13D	6/24/2009	57	57	47 - 57	2" PVC
TR-14D	6/24/2009	72	70	47 - 70	2" PVC
TR-15	6/25/2009	15	70	4 - 14*	2" PVC
TR-16	10/22/2009	20	20	10 - 20	1" PVC
TR-17	10/23/2009	20	20	10 - 20	1" PVC
TR-18	10/22/2009	16	16	6 - 16	1" PVC
TR-19	10/22/2009	19	19	9 - 19	1" PVC
TR-20	10/21/2009	23	23	13 - 23	1" PVC
TR-21	10/23/2009	24	23	13 - 23	1" PVC
TR-22	10/21/2009	20	20	10 - 20	1" PVC
TR-23	10/21/2009	18	18	8 - 18	1" PVC
TR-24	10/22/2009	20	20	10 - 20	1" PVC
TR-25D	11/1/2009**	49	49	39 - 49	2" PVC
TR-26D	11/1/2009**	52	52	42 - 52	2" PVC
TR-27D	10/20/2009	52	52	42 - 52	2" PVC
TR-28D	11/24/2014	62	60	50 - 60	2" PVC
TR-29D	11/24/2014	66	62	42 - 62	2" PVC

Notes:

* - actual screen interval not indicated on log

** - approximate date

Table 2
Laboratory Analyses
UTC/Carrier AOC G RFI

Matrix/Analysis	Analytical Method	Field Samples	MS	MSD	Field Duplicate	Rinse Blank	Trip Blank	Total Analyses
Well Boring Samples								
Volatile Organics	SW-846 8260C	18	1	1	2	1	0	23
Semi Volatile Organics	SW-846 8270D	18	1	1	2	1	0	23
PCBs	SW-846 8082A	18	1	1	2	1	0	23
Sediment Samples								
PCBs	SW-846 8082A	20	1	1	1	1	0	24
Total Organic Carbon	SW-846 9060A	20	1	1	1	1	0	24
Groundwater Samples								
Temporary Wells								
Volatile Organics	SW-846 8260C	3	1	1	1	1	3	10
Semi Volatile Organics	SW-846 8270D	3	1	1	1	1	0	7
PCBs	SW-846 8082A	3	1	1	1	1	0	7
RCRA Metals	SW-846 6010C/7470A	3	1	1	1	1	0	7
Permanent Wells								
Volatile Organics	SW-846 8260C	24	2	2	2	1	5	36
Semi Volatile Organics	SW-846 8270D	24	2	2	2	1	0	31
PCBs	SW-846 8082A	24	2	2	2	1	0	31
RCRA Metals	SW-846 6010C/7470A	24	2	2	2	1	0	31

Notes:

MS/MSD - matrix spike/matrix spike duplicate

PCBs - polychlorinated biphenyls

SW-846: Test Methods for Evaluating Solid Waste, Physical/Chemical Methods. USEPA SW-846. Complete through Update IV, March 2009.

RCRA - Resource Conservation and Recovery Act

MS/MSD samples collected one per 20 samples

Field duplicates collected one per 10 samples

Rinse blanks collected one per media per event

Trip blanks collected one per day

Table 3

Sample Bottle, Volume, Preservation, and Holding Time Summary

UTC/Carrier AOC G RFI

Matrix/Analysis	Analytical Method	Sample Bottles		Preservation	Holding Time	
		Mat'l	Size		Extraction	Analysis
Soil/Sediment Samples						
Volatile Organics	SW-846 8260C	G	4 oz	Cool 4°C	NA	48 hours
Semivolatile Organics	SW-846 8270D	G	8 oz	Cool 4°C	14 days	40 days from extraction
Polychlorinated Biphenyls	SW-846 8082A	G	8 oz	Cool 4°C	14 days	40 days from extraction
Total Organic Carbon	SW-846 9060	G	8 oz	Cool 4°C	NA	28 days
Groundwater Samples						
Volatile Organics	SW-846 8260C	G	3 40 mL VOA	HCl to pH<2	NA	14 days
Semivolatile Organics	SW-846 8270D	G	2 1-L amber	Cool 4°C	7 days	40 days from extraction
Polychlorinated Biphenyls	SW-846 8082A	G	2 1-L amber	Cool 4°C	7 days	40 days from extraction
RCRA Metals	SW-846 6010C/7470A	P	500 ml	HNO_3 to pH<2	NA	6 months/28 days

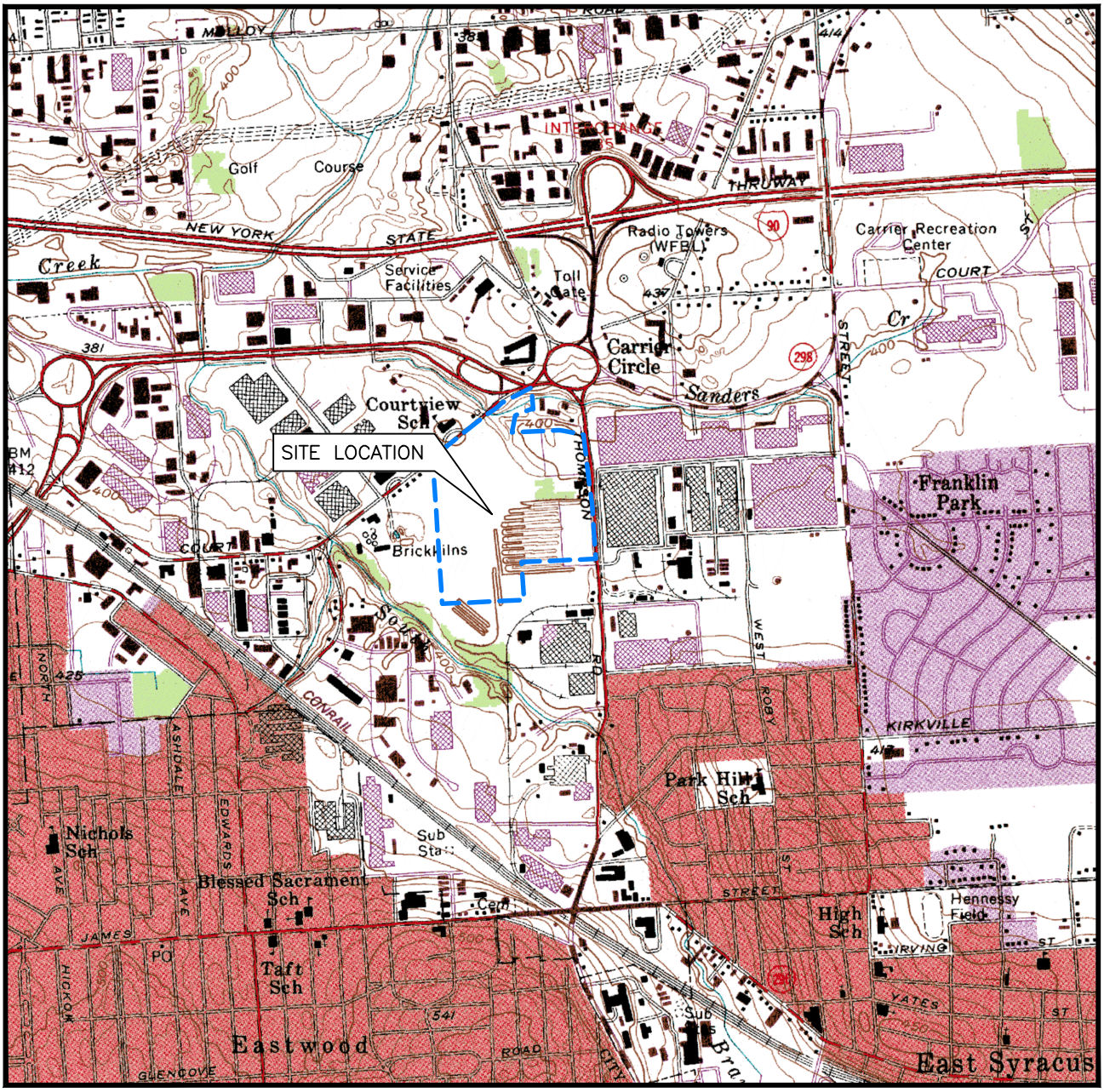
Notes:

(1) SW-846: Test Methods for Evaluating Solid Waste, Physical/Chemical Methods. USEPA SW-846. Complete through Update IV, March 2009.

G - glass

P - plastic

Figures



NOTE: MAP DERIVED FROM U.S.G.S. 7.5 MINUTE TOPOGRAPHIC QUADRANGLE, SYRACUSE EAST, NY, DATED 1957, PHOTOREVISED 1978.

AECOM	CARRIER - DEWITT LANDFILL SITE LOCATION MAP AOC G	FIGURE 1

NORTH

0' 150' 300' 600'

Map Reference:
Photo from NYS GIS Orthos Online.

LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- SITE LIMITS
- SURFACE WATER DRAINAGE PATH

AECOM

CARRIER - DEWITT LANDFILL
SITE PLAN
AOC G

FIGURE 2

NORTH

CARRIER CIRCLE

NYS ROUTE 298

SANDERS CREEK

THOMPSON ROAD

OLD COURT STREET

NORTH SWALE

NORTH PARKING LOT

MIDDLE PARKING LOT

SOUTH PARKING LOT

NORTH WETLAND

WEST PONDED AREA

LANDFILL

APPROXIMATE LANDFILL LIMITS

OUTFALL "B"

OUTFALL "A"

SOUTHERN BRANCH LEY CREEK

PLAN

0' 75' 150' 300'

LEGEND

- APPROXIMATE PROPERTY BOUNDARY (TAX MAP)
- SITE LIMITS
- CREEK
- DRAINAGE
- C-1 — SEDIMENT SAMPLE
- DPT694 — SOIL BORING
- TR-27D — MONITORING WELL
- PREVIOUS (ENSAFE) SOIL BORING/SAMPLING
- TP-13 — TEST PIT BY CHA
- ETP-12 — TEST PIT BY ENSAFE
- B-2 — GEOTECHNICAL BORING
- GP-1 (MW-1) — GEOPROBE BORING (COMPLETED AS WELL)

NORTH

NORTH PARKING LOT

NORTH WETLAND

SOUTH PARKING LOT

WEST WETLAND

APPROXIMATE LANDFILL LIMITS

TRACTOR TRAILER PARKING

ENLARGED PLAN

0' 40' 80' 160'

Map Reference: Photo from NYS GIS Orthos Online.

CARRIER - DEWITT LANDFILL
PREVIOUS INVESTIGATION LOCATION PLAN
AOC G

AECOM

FIGURE 3

NORTH

NORTH WETLAND

MARSH AREA
WATER SURFACE
ELEVATION 398.5

SOUTH PARKING LOT

WEST WETLAND

LANDFILL

TRACTOR TRAILER PARKING LOT

PLAN

KEY:

- Approximate Property Boundary (Tax Map)
- DPT-706 — Soil Boring
- TR-29D — Deep Monitoring Well
- F-1 — Sediment Sample
- SB-04 — Previous (EnSafe) Soil Boring
- TR-16 — Shallow Monitoring Well
- TP-3 — Test Pit by CHA
- ETP-5 — Test Pit by Ensafe
- B-2 — Geotechnical Boring
- GP-1 — Geoprobe Boring
- Proposed Boring
- Proposed Temporary Well
- Proposed Shallow Well
- Proposed Deep Well

LEGEND:

- 400 — Major Contour
- 399 — Minor Contour
- Edge of Water
- Guide Rail
- Chain Link Fence
- Light Pole

Map References:

1) Base mapping shown from a field survey and plans titled "Map Showing Existing Conditions, Former Carrier Landfill, AOC G and Sanders Creek, by Thew Associates, dated January 21, 2014, including all notes and references therein, and additional field observations made by AECOM personnel, various dates.

2) AECOM Investigation Sample Locations from survey performed by C.T, Male & Assoc., dated November 2014.

0' 40' 80' 160'

AECOM

CARRIER - DEWITT LANDFILL
PROPOSED INVESTIGATION LOCATION PLAN
AOC G LANDFILL AREA

FIGURE 4

Appendix A

Summary of Previous Investigations

1.0 Previous Investigations

Previous investigations identified polychlorinated biphenyls (PCBs), volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), and metals at concentrations exceeding NYSDEC Soil Cleanup Objectives (SCOs) within the surface and subsurface landfill material at the Site. VOCs were detected in groundwater near the center of the landfill with a plume extending northwest toward the adjacent wetland at concentrations that exceeded the New York State Ambient Water Quality Standards and Guidance Values (AWQS). The following subsections present summaries of the previous investigations and their findings.

1.0.1 Wehran Engineering Phase I Investigation - May 1987

In May 1987, Wehran Engineering, P.C. (Wehran) completed an Inactive Hazardous Waste Site Phase I Investigation for NYSDEC. The Phase I Investigation, consisting of records search, site inspection, and interviews with Carrier personnel, assessed potential environmental and/or public health hazards associated with past disposal activities at the landfill. The report noted that the landfill operated from the early 1940s until about 1983. Wehran's report identified concerns for the landfill from unknown early disposal practices reportedly involving oils, solvents, and acids from the adjacent Carrier facility. There was no information regarding other sources of waste. Wastes reportedly disposed of onsite or observed onsite by Wehran included concrete, asphalt, grinding swarf, parking lot sweepings, brush, municipal refuse, and an unknown solid black material. Wehran reported that Carrier had sampled the black material in 1987 for heavy metals and stated that the metals were not "EP Toxic".

Wehran noted that the wetland adjacent to the landfill was identified as regulated wetland SYE-29 on the Tentative Wetland Map. No formal hydrologic or environmental quality evaluations were completed as part of the Phase I Investigation. Wehran recommended completing test pits and soil sampling/analysis to characterize the onsite waste and surface water sampling and analysis because of the high water table and observed contact of the refuse slope toe with surface water. No information was presented regarding any sampling based on the recommendations.

Source:

Engineering Investigations at Inactive Hazardous Waste Sites in the State of New York, Phase I Investigations to NYSDEC, Division of Solid and Hazardous Waste, Carrier-Dewitt, Site Code: 734005, May 1987.

1.0.2 Clough Harbour Phase II Investigation - October 2008

In 2008, Clough Harbour and Associates, LLP (CHA) was retained by DeStafano Development, LLC to perform a Phase II Investigation. Subsequent investigation reports prepared by others stated that the developer had planned on constructing commercial offices and retail structures over the landfill and adjacent parking lot. The field work conducted by CHA included:

- ten direct-push soil borings (GP-1 through GP-10)
- converting four soil borings (GP-1 through GP-4) to temporary groundwater monitoring points (MW-1 through MW-4),
- three geotechnical soil borings (B-1 through B-3), and

- 14 test pits (TP-1 through TP-14).

Soil Impacts

Soils were inspected for visual evidence of contamination and screened for volatile organic vapors using a photoionization detector (PID). Based on the visual inspections and PID readings, five soil samples were collected from the direct push borings:

- Parking lot locations:
    - Boring GP-1, sample S-1 (no PID readings provided);
    - Boring GP-2, sample S-2 (no PID readings provided);
    - Boring GP-3, sample S-3 (no PID readings provided); and
    - Boring GP-5, sample S-5 (no PID readings provided).
- Edge of landfill location:
    - Boring GP-4, sample S-4 (no PID readings provided).

Soil samples were also collected from three test pits:

- TP-7, middle parking lot, sample SS-1 (PID = 0 ppm);
- TP-9, landfill, sample SS-2 (PID = 483 ppm); and
- TP-10, landfill, sample SS-3 (PID = 3,400 ppm).

The soil samples were submitted for laboratory analysis of VOCs, SVOCs, PCBs and the eight RCRA metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver).

Arsenic was the only parameter detected in the SS-1 soil sample at a concentration greater than the Title 6 New York Codes, Rules and Regulations (NYCRR) Part 375 Commercial Use soil cleanup objective (SCO). Three metals, two PCBs, and four SVOCs were detected in SS-2 at concentrations above the SCOs, and two PCBs were detected in SS-3 at concentrations above the SCOs.

Groundwater Impacts

Grab groundwater samples were collected from two temporary monitoring wells (GP-4/MW-3 and GP-5/MW-4) and were also submitted for laboratory analysis of VOCs, SVOCs, PCBs and the eight RCRA metals. Temporary wells MW-1 and MW-2 were dry at the time of sampling.

Two chlorinated VOCs and five metals were the only parameters detected in the groundwater sample from MW-3 at concentrations above the groundwater quality standards presented in New York State Technical and Operational Guidance Series 1.1.1. (TOGS).

Other

CHA did not delineate the extent of contamination, but concluded that the impacts were limited to the landfill area.

Source:

Letter report titled *Summary of Subsurface investigation, Carrier Property – 6463 Thompson Road*, October 3, 2008.

1.0.3 EnSafe Investigation – December 2008

In December 2008, EnSafe conducted an investigation to assess the contamination identified by CHA with emphasis on the area near CHA test pits TP-9 and TP-10 located in the landfill. EnSafe completed 17 test pits:

- Nine test pits (ETP-1 through ETP-9) were completed in the central portion of the landfill near the CHA test pits TP-9 and TP-10.
- Five test pits (ETP-10 through ETP-14) were completed in the southern portion of the landfill area along an access road for comparison with CHA test pits TP-13 and TP-14.
- Three test pits (ETP-15 through ETP-17) were completed in the parking lot.

Construction debris, including concrete, asphalt, brick, coal ash, wood and a black sludge-like material were observed in the test pits within the landfill area.

Soil Impacts

Soil samples were collected from six test pits in the central portion of the landfill and two test pits located in the southern portion of the landfill. The soil samples were submitted for laboratory analysis of VOCs, PCBs, and eight RCRA metals. The results were compared to NYSDEC's Technical and Administrative Guidance Memorandum (TAGM) 4046.

The highest concentrations of VOCs (chlorinated VOCs and petroleum-related VOCs) were detected in soil samples collected from test pits ETP-2, ETP-3, and ETP-5 and for PCBs were in ETP-2, ETP-4, and ETP-5; all located in the central portion of the landfill near CHA test pits TP-09 and TP-10. Based on the test pit findings, EnSafe installed monitoring well TR06 in this area.

In the southern portion of the landfill, trichloroethylene (TCE) was detected at an elevated concentration above the TAGM criteria. PCBs were also detected in the southern test pits, but at levels below the TAGM criteria.

Groundwater Impacts

As part of the investigation, EnSafe also installed monitoring wells MW-05 through MW-08 (re-designated in subsequent EnSafe reports as wells TR-05 through TR-08). Well TR-05 was installed on the southern end of the landfill; TR-06 in the central portion of the landfill (near CHA test pits TP-9 and TP-10); TR-07 on the eastern side of the middle parking lot, and well TR-08 north of the wetland and west of the north parking lot.

Ten VOCs were detected in TR06 exceeded groundwater standards including TCE at 100 micrograms per liter (µg/L) and breakdown products cis-1,2-dichloroethylene (cis1,2-DCE) at 2,580 µg/L and vinyl chloride (VC) at 8,990 µg/L. Other VOC exceedances included total xylene, toluene, naphthalene, and ethylbenzene. VOCs were not detected in well TR05 located in the southern portion of the land fill or in wells TR07 and TR08 located in the parking lot.

Surface Water Impacts

Two surface water samples, SW-1 and SW-2, were collected from the wetland west of the landfill and submitted for VOC, PCB, and RCRA 8 metals analyses. VOCs detected in the two samples were 1,1-dichloroethene (1,1-DCE), acetone, cis1,2-DCE, TCE, and VC, but at concentrations below water quality standards. No PCBs were detected in the samples.

Other

As required by the Consent Order negotiated between Carrier and the NYSDEC, on Carrier's behalf, EnSafe notified the NYSDEC of the potentially hazardous constituents discovered during the course of field investigations at AOC G – Carrier DeWitt Landfill. EnSafe noted that the Carrier-DeWitt Landfill is an AOC for which the NYSDEC had previously determined that no further investigation was necessary.

Source:

Thompson Road Parking Lot Investigation Report and Phase I Work Plan, dated March 2009.

1.0.4 EnSafe Phase I Investigation - 2009

The 2009 Phase I Investigation focused on further assessing the extent of shallow and deep groundwater contamination at the landfill. Four shallow monitoring wells (TR-10, TR-11, TR-12, and TR15) and three deep monitoring wells (TR-09D, TR-13D, and TR-14D) were installed to evaluate the horizontal and vertical extent of groundwater contamination at the site. However, only wells TR-09D and MW-15 were installed within the limits of the landfill; the remaining wells were installed in or adjacent to the parking lots.

Soil Impacts

Soil samples were collected from multiple intervals in each monitoring well boring and analyzed for VOCs, PCBs, and RCRA 8 metals. The results were compared to soil cleanup levels presented in TAGM 4046.

Only soils from TR-15 contained COCs at concentrations above the TAGM criteria. The highest impacts were from the chlorinated VOCs cis1,2-DCE, TCE, and vinyl chloride which were detected as high as 159,000 ug/kg, 181,000 ug/kg, and 7,360 ug/kg, respectively. Toluene, at a concentration of 5,200 ug/kg in the 13- to 15-foot sample, was the only other VOC that exceeded TAGM criteria. No PCBs or metals exceeded TAGM criteria.

Groundwater Impacts

The groundwater samples from the new wells and wells TR-05 through TR-08 were analyzed for VOCs, PCBs, and RCRA 8 metals. The analytical results were compared to TOGS groundwater standards. Only samples from TR-06, TR-09D, and TR-15 contained VOCs exceeding the groundwater standards. The primary contaminants were chlorinated organics, with the highest levels found in well TR-15 where cis-1,2-DCE and TCE occurred at near free-phase concentrations.

No PCBs or metals were detected in the new wells at concentrations above the groundwater standards.

Soil Vapor Impacts

In response to an NYSDEC letter dated May 22, 2009, EnSafe attempted to install two soil vapor probes along the southern border of the landfill; however, shallow groundwater precluded the installation of vapor probes.

Source:

Thompson Road Parking Lot Phase I Investigation Report, dated September 2009.

1.0.5 EnSafe Phase II Investigation — October 2009

The Phase II investigation was conducted by EnSafe in October and November 2009 to refine the nature and extent of shallow and deep groundwater and contamination at the Site and to refine the conceptual site model. The scope of the Phase II investigation involved:

- Advancing 28 soil borings on a 100 ft by 100 ft grid across the landfill to depths ranging from 8 to 16 feet below ground surface (bgs).
- Collecting soil samples from near surface (0 to 4 feet bgs) and subsurface (4 to 8 feet bgs) to assess the horizontal and vertical extent of PCB contamination.
- Collecting soil samples from eight grid locations for from near surface (0 to 4 feet bgs) and subsurface (4 to 8 feet bgs) in the TR-6 and TR-15 locations SVOC and metals analysis.
- Collecting one soil sample from TR-22 for VOC analysis due to a solvent odor at 12 to 16 feet bgs.
- Advancing two deep lithologic borings (SB-08 and SB-27) at the eastern edge of the landfill to profile site geology and hydrogeology
- Installing nine shallow monitoring wells (TR-16 through TR-24) and three deep monitoring wells (TR-25D, TR-26D, and TR-27D) within the landfill to further evaluate the nature and extent of both shallow and deep groundwater contamination.

Soil Impacts

Soil results were compared to the Part 375 Commercial Use SCOs. Soil results were also screened against Part 375 protection of groundwater (PGW) and ecological soil screening level (ESCO) SCOs.

In the soil sample from TR-22, no VOCs were detected at concentrations exceeding the Commercial Use SCO; however, three VOCs exceeded the PGW SCOs and one VOC (xylenes) exceeded the ESCO.

The grid soil sampling identified PCBs in soil above the SCO of 1.0 milligram per kilogram (mg/kg) in approximately 40% of the near surface soil (0 to 4 ft). PCBs exceeded 10 mg/kg in three samples (SB-19, SB-24, and SB-29).

SVOCs and metals were detected above Commercial Use and PGW SCOs in only a handful of samples. Only one SVOC (benzo(a)pyrene) was detected at a concentration above the ESCO. As many as eight metals were detected at a concentration above their respective ESCOs.

No site-specific background concentrations were determined for metals in soil, so EnSafe concluded that a formal determination of a release of metals onsite was incomplete.

Groundwater Impacts

Observations from the deep borings SB-08 and SB-27 indicated that the clay unit between the two water bearing zones was between 14 to 23 feet thick. The top of the clay was observed at the locations where monitoring wells were installed during the Phase II investigation indicating the clay was present across the Site. Hydraulic conductivity of the clay was measured at 6.2×10^{-8} centimeters per second in a Shelby tube sample collected in the clay 33.7 to 35.7 feet bgs at TR-26D. The clay is believed to function as an aquitard.

Consistent with the Phase I results, the maximum chlorinated VOCs in shallow groundwater were detected in TR-06 and TR-15 in the north-central portion of the landfill. TCE was in TR-15 at a concentration approaching the TCE aqueous solubility limit. Degradation products were detected in the shallow groundwater in wells near TR-15 and the surrounding the suspected source area.

Based on potentiometric data, the shallow groundwater flows from the TR-15 and TR-06 area of the landfill westward toward TR-19 and the wetland. EnSafe noted that chlorinated VOC concentrations decline by three to five orders of magnitude at downgradient well TR-19 (from the source area at TR-06/TR-15). The dominant contaminants at TR19 appear to be cis1,2-DCE and VC, indicating TCE dechlorination is occurring.

Chlorinated VOCs were not detected in the deep zone at monitoring wells TR-25D, TR-26D and TR-27D. However, cis1,2-DCE and VC were detected in TR-09D near the southern end of the landfill at concentrations above groundwater standard and TCE and cis1,2-DCE were detected in TR-13D, located in the parking lot east of the landfill, but at concentrations below groundwater standards. (In AECOM's review of EnSafe's monitoring well construction details, it appears that wells TR-09D and TR-13D were not constructed with a permanent separation casing set into the clay unit. If this observation is correct, the presence of VOC impacts below the clay unit could be the result of drag down of contaminants above the clay during drilling.)

Source:

Thompson Road Parking Lot Phase II Investigation Report, dated August 2010.

1.0.6 EnSafe Interim Site Investigation – August 2010

EnSafe prepared an *Interim Site Investigation Work Plan*, dated August 30, 2010. The letter work plan was prepared with the objective of performing the following four elements prior to completing a Comprehensive Site Investigation Work Plan to address remaining data gaps following the Phase II investigation:

- A topographic survey by a New York State licensed land surveyor
- Reconnaissance of the ponded wetland areas
- Site-wide groundwater level measurements
- Install permanent wellheads at each temporary monitoring wells

In their *Remedial Investigation Work Plan*, dated July 2011, EnSafe provided the following summary of these activities.

Topographic Survey

Due to record snowfall during winter 2010/2011 and above-average rainfall in spring, the topographic survey was only approximately 75% completed. The draft contours depicted in the July 2011 Work Plan required final verification.

Wetland Reconnaissance

Observations made during the wetland reconnaissance indicated that limited surface hydrologic connectivity existed between the Site and adjacent streams during high-flow periods. The areas adjacent to the toe slope of the landfill appeared to be jurisdictional wetlands. In all test locations examined, the criteria for wetlands were present. There are other wetlands onsite associated with the open-water marsh near the southwestern and western edges of the Site and adjacent to the historic meander scar feature that runs from the northeastern corner of the Site towards Sanders Creek. Other portions of the Site appeared to receive surface water flow during high water events such as snowmelt and runoff, but did not demonstrate all the criteria required for jurisdictional wetlands.

Potentiometric Measurements September 2010

Depth to groundwater measurements were collected September 16, 2010. Also, each monitoring well was measured for light non-aqueous phase liquids (LNAPL) at the top of the water column and dense non-aqueous phase liquids (DNAPL) at the bottom of the water column. No LNAPL or DNAPL was detected in any site wells.

Conversion of Temporary Monitoring Wells

Temporary monitoring wells were converted to permanent monitoring wells in November 2010, by constructing 4-inch square protective stickup covers around each well riser. The well casings were cut to facilitate the locking protective covers.

Source:

Remedial Investigation Work Plan, dated July 2011.

1.0.7 EnSafe November 2010 Investigations

In their *Remedial Investigation Work Plan*, dated July 2011, EnSafe noted that in response to a request from Carrier, EnSafe collected sediment samples in November 2010 from along the boundary of the wetland to the toe of the landfill.

Additionally, a geophysical survey was conducted over the western edge of the central parking lot, the majority of the southern parking lot, and accessible portions of the landfill to evaluate the extent of buried waste. No formal work plan was submitted to NYSDEC; however, NYSDEC offered concurrence and NYSDEC personnel were onsite to observe part of the sediment sampling. The following presents a summary of the November 2010 investigation activities.

1.0.8 Sediment Sampling Results

EnSafe collected 12 sediment samples (SE-01 through SE-12) from the wetland shore line at the toe of the landfill to as much as 50 feet offshore. The sediment samples were submitted for laboratory analysis of target analyte list TAL Metals, PCBs, SVOCs and total organic carbon (TOC). Samples collected offshore were analyzed for PCBs and TOC. The sediment sample results were evaluated in accordance of the NYSDEC Division of Fish, Wildlife and Marine Resources, Technical Guidance for Screening Contaminated Sediments (revised January 25, 1999). Because of variations in bio-mobility, PCB and non-polar SVOC (e.g., polycyclic aromatic hydrocarbons [PAHs]) results were screened against TOC-normalized criteria.

PCB Sediment Results

With total PCB concentrations ranging from 79 µg/kg to 4,370 µg/kg, PCBs in 10 of the 12 samples exceeded sample-specific TOC-normalized screening values.

SVOCs Sediment Results

Twenty-one SVOCs were detected. Six SVOCs exceeded their TOC-normalized screening values, but not in all samples (benzo(a)pyrene, benzo(b)fluoranthene, chrysene, indeno(1,2,3-cd)pyrene, benzo(k)fluoranthene and dibenz(a,h)anthracene).

Inorganic Sediment Results

Metals detected in sediment were screened against two levels of risk: the lowest effect level (LEL) and the severe effect level (SEL). The sediment sampling and analysis did not include collecting representative background samples; therefore, no natural background concentrations for metals were included in the screening evaluation.

Twenty-three metals were detected in sediment samples. Four metals are considered essential nutrients were not evaluated for impact (calcium, magnesium, potassium and sodium). Seven metals detected did not have published LEL or SEL values and were not evaluated further. Ten metals exceeded the LELs, but all were below the SELs (antimony, arsenic, cadmium, chromium (total), copper, iron, lead, manganese, mercury, and nickel). None of the metals exceeded the SELs.

1.0.9 Geophysical Investigation

The objective of the geophysical survey was to determine if waste exists beneath the southern and central parking lots east of the landfill. The survey did not indicate buried waste beneath the paved areas of the Site, although buried utilities were noted (electrical service to the parking lot lights). Some areas of the landfill exhibited expected survey responses for buried waste, but others indicated subdued responses, such as different waste materials or areas where waste is minimal or absent.

In general, the results confirmed that the eastern edge of the landfill boundary coincides with the western edge of the parking lot.

Source:

Remedial Investigation Work Plan, dated July 2011.

1.0.10 EnSafe Sediment Sampling May 2011

As a follow-up to the November 2010 sediment sampling, EnSafe collected sediment samples from eight locations (SE-13 through SE-20) in the wetland north and west of the landfill in May 2011. The samples were submitted to for SVOC, PCB, TAL Metals, and TOC analyses.

Organic Analytical Results

Three SVOCs and one PCB were detected in the sediment samples. None of the SVOCs detected exceeded screening values. PCB (Aroclor-1260) was detected in two of eight samples and exceeded the sample-specific screening criteria in both samples.

Inorganic Analytical Results

Seventeen inorganics were detected in sediment samples of which six exceeded the LEL screening criteria. All inorganic detections were below the SEL screening criteria. No sediment background values have been determined for the wetland.

Source:

Remedial Investigation Work Plan, dated July 2011.

1.0.11 AECOM Wetland Delineation – November 2013

In November 2013, AECOM initiated characterization of the wetland areas of the site in order to take advantage of the beneficial vegetative and weather conditions provided by the fall season. The results of this wetland characterization and sediment sampling were presented to NYSDEC in the *Wetland Delineation Data Summary/Transmittal Report*, dated March 3, 2014.

The scope of work included delineating the wetlands, sampling wetland sediments, and surveying the wetland area and the Sanders Creek Corridor.

The wetland delineation and sampling of the wetland area was completed during the week of November 4, 2013. Additional wetland delineation activities were performed in May 2014. Wetland investigation activities included:

- Delineating the jurisdictional boundary between the upland portions of AOC G and the adjacent wetlands using the method documented in the Corps of Engineers Wetlands Delineation Manual (Technical Report Y-87-1, 1987), as modified by Supplement V2 (ERDC/EL TR-12-1, 2012), based on the presence of hydrophytic vegetation, hydric soils, and wetland hydrology.
- Collecting sediment samples from three depth intervals (0-6 inches, 6-12 inches, and 18- 24 inches) from 43 sediment sample locations. The sampling included:
    - 11 linear transects (A through K), some almost 1,000 feet long, extending north and west from the landfill, and
    - Nine locations along the northern swale
- Analyzing each sediment sample for VOCs, TOC, SVOCs, PCBs, Metals, percent moisture, and PAHs.

Concentrations of analytes detected in the samples were compared to Class A screening values from Table 1a in the draft NYSDEC sediment guidance document (*Screening and Assessment of Contaminated Sediment*, NYSDEC, DFWMR, Bureau of Habitat, January 24, 2013).

Inorganic Analytical Results

Metals exceeding the Class A criteria included arsenic, cadmium, chromium, copper, lead, nickel, mercury, and zinc. No metals exceeded NYSDEC Class C criteria at any depth. Therefore, all metals that exceed Class A criteria are considered Class B metals.

PCB Analytical Results

PCBs were detected at the sampling locations closest to the toe of the landfill and at the SDC1 location in the wetland-upland complex. Exceedances of NYSDEC Class A criteria were found at locations A-4, B-1, F-1, H-1, J-1, and K-1. The distribution of these exceedances suggests a landfill source of PCBs.

PCBs were also detected in excess of the Class A criteria at 2 locations within the floodplain of Sanders Creek, S-8 and S-9. Because no PCBs were detected in the swale between the landfill and Sanders Creek, the source of PCBs in the floodplain is assumed to be sediments from Sanders Creek deposited in the floodplain during flooding events that overtopped the creek banks.

PCBs exceeded the Class C criteria at only one location: F-1.

VOC Analytical Results

Chloroform, at location C2, was the only VOC that exceeded a Class A screening criterion. Although slightly exceeding the screening criterion, due to its minimal exceedance and low frequency of detection, chloroform exposure is not likely to cause unacceptable adverse effects to benthic communities. Therefore, no VOCs are expected to cause adverse effects to benthic communities and no further action is required regarding VOCs in sediment at the Site.

SVOC Analytical Results

No SVOCs exceed Class A screening criteria. Therefore, SVOCs are not expected to cause adverse effects to benthic communities and no further action is required regarding SVOCs in sediment at the Site.

The evaluation of PAHs indicates that PAHs at the site are not expected to cause adverse effects to benthic communities. No further action is required regarding PAHs in sediment at the Site.

Sources:

Wetland Delineation Data Summary/Transmittal Report, dated March 3, 2014 and Final AOC G Wetland Memo, dated July 17, 2014.

1.0.12 AECOM Remedial Investigation 2014

EnSafe prepared a Draft Remedial Investigation Work Plan (RIWP) for submittal to NYSDEC in July 2011. NYSDEC provided comments on the Draft RIWP in a memorandum dated September 12,

2013. AECOM, retained as UTC/Carrier's environmental consultant in place of EnSafe, responded to the memorandum by letter and email dated October 29, 2013. NYSDEC provided additional comments on the RIWP on April 10, 2014; August 26, 2014; and September 22, 2014. As revised by these communications, the RIWP for the Site was approved by NYSDEC in a letter dated October 21, 2014.

The tasks described in the approved RIWP are summarized below:

1. Site-wide soil investigation to characterize the nature and extent of Site-related contaminants in soil to the depth of landfilling activities.
2. Soil sampling to delineate the horizontal and vertical extent of the VOC source area in the north-central portion of the landfill (near well TR-06) and delineate the horizontal and vertical extent of the VOC source area in the southern portion of the landfill (near test pit ETP-12).
3. Groundwater assessment to:
    - assess the horizontal and vertical extent of Site-related contaminants in groundwater;
    - assess groundwater geochemistry and biological parameters; and
    - assess aquifer hydrogeologic properties.
4. Background metals study to determine the naturally occurring concentrations of metals in groundwater in the area of the Site.
5. Wetland sediment, surface water and pore water assessment to:
    - Assess the presence/absence of Site-related contaminants in sediment, pore water, and surface water in the wetland adjacent to the landfill; and
    - Assess the presence/absence of contaminants in stormwater/sediment runoff from the landfill surface.

1.0.13 Surface and Subsurface Soil Assessment

A site-wide soil investigation was completed to characterize the nature and extent of Site-related contaminants in soil to the depth of landfilling activities. The site-wide soil investigation was comprised of a combination of surface and subsurface soil sampling.

Surface soil samples were collected from 0 to 2 inches below the vegetative cover at 32 locations on a 100 foot by 100 foot grid as shown on (SB-501 to SB-535, not numbered consecutively). All surface soil samples were analyzed for SVOCs, PCBs, and TAL metals. Samples were also collected from the interval of 0 to 6 inches bgs and analyzed for VOCs, plus 10 tentatively identified compounds (TICs).

In October and November 2014, a total of 105 direct push soil borings (including the 32 locations described above) were installed across the Site (DPT601 to DPT814, not numbered sequentially). The soil borings were sampled from 0 to 6 inches (as described above as surface soil samples), 0 to 4 feet, 4 to 8 feet, and 8 to 12 feet bgs. The 12 to 16 foot bgs interval was sampled if PID readings detected the presence of VOCs in that interval. In select cases, the boring was to 28 feet bgs due to observed geologic conditions (i.e., did not encounter the clay layer) or potential contaminant conditions. Many of the borings were completed at approximately 20 feet bgs where sandy clay was encountered.

Soil samples from these borings were analyzed for VOCs plus 10 TICs, SVOCs plus 20 TICs, PCBs, and TAL Metals.

A total of 72 soil borings were advanced on two separate 20 foot by 20 foot grids to delineate the extent of two VOC source areas – one in the north-central portion of the Site (near well TR-06) and one in the southern portion (near test pit ETP-12).

During the completion of soil borings in the northern VOC source area, the extent of contaminants detected in this area necessitated that the 20 foot by 20 foot sampling grid be expanded at greater lateral spacing to fully delineate the extent of contamination.

Surface Soil Results

Surface soil analytical results were compared to Unrestricted, Commercial Use, and Industrial Use SCOs. VOCs at several locations and PCBs over a large portion of the Site exceeded the Unrestricted Use SCOs. VOCs did not exceed Commercial or Industrial Use SCOs. PCBs detected in excess of the Commercial Use SCOs were relatively widespread across the Site. PCBs were not detected in surface soil at concentrations exceeding Industrial Use SCOs.

For all analytes, samples along the eastern extent of the landfill were either at concentrations below all the SCOs considered or only nominally exceeded the Unrestricted SCOs. Based on these findings, AECOM concluded that for current and foreseeable future commercial or industrial uses, the extent of Site-related contaminants in surface soil has been delineated.

Subsurface Soil Results

The vertical distribution of PCB concentrations was generally associated with a relatively uniform layer of landfilled material, except for a few locations in the center of the landfill where elevated PCB concentrations coincide where landfill excavation activities appear to have extended into the underlying native sand and silt. The highest concentrations of VOCs were also associated with this area in the center of the landfill, and with an isolated location at the southern end of the landfill.

The extent of PCBs in soil exceeding the Commercial and/or Industrial SCO was broader than the other analytes, followed by SVOCs and metals distributed similar to PCBs, and lastly by the very isolated areas of VOCs.

As with the surface soil data, the samples collected along the eastern extent of the landfill contained concentrations below all SCOs or only nominally exceeding some Unrestricted SCOs. AECOM concluded that the extent of Site-related contaminants in subsurface soil had been delineated with the exception of the area along the southern portion of the site. AECOM noted that aerial photos and observations from soil borings along the southern edge of the landfill suggest that impacts may extend beyond the property boundary.

1.0.14 Groundwater, Pore Water and Surface Water Assessment

Two overburden monitoring wells were installed at the Site in November 2014. The wells were installed using 4-inch permanent separation casing grouted in place to approximately 30 feet bgs. Well TR-28D was completed near the southern VOC source area and TR-29D was completed near the north-central VOC source area.

Groundwater samples were collected from 24 onsite and two offsite wells, pore water was collected from nine wetland piezometers (A-1, B-1, D-1, E-1, F-2, H-1, I-1, J-1, and K-1), and six surface water samples were collected from locations adjacent to piezometers (A-1, F-2, H-1, I-1, J-1, and K-1). All samples were analyzed for VOCs, SVOCs, PCBs, and TAL metals. Select groundwater samples were also analyzed for microbial and biological activity parameters.

Groundwater Results

The VOC, SVOC, PCB, and metal analytical results were compared to water quality standards presented in TOGS. The results indicated:

- VOCs were detected at concentrations above the groundwater criteria in shallow wells TR-06, TR-15, TR-16, TR-17, TR-19, TR-20, TR-21, and TR-22 and deep well TR-29D;
- SVOCs were detected at concentrations above the groundwater criteria in shallow wells TR-06, TR-15, and TR-22; and
- PCBs were detected at concentrations above the groundwater criteria in shallow well TR-06.

The wells with the greatest impacts of organic contaminants were TR-06, TR-15, TR-16, TR-19, TR-21, and TR-22, all located in the north-central portion of the landfill.

Based on the groundwater analyses, AECOM concluded that a reductive environment is present where sulfate reduction occurs simultaneously with dechlorination of PCE, TCE, DCE, and DCB, in addition to BTEX reduction.

Each well contained at least one metal at a concentration above the groundwater standard. Exceedences of note include:

- Arsenic in TR-19;
- Arsenic, barium, beryllium, chromium, copper, mercury, nickel, and zinc in TR-20;
- Nickel in TR-21;
- Arsenic in TR-22; and
- Arsenic in TR-27D.

Pore Water Results

No PCBs or SVOCs were detected in the nine pore water samples. No VOCs were detected in five of the nine pore water samples. In two of the remaining four samples, only one VOC was detected in each sample and at estimated concentrations below the quantitation limit. In the remaining two samples, four VOCs were detected in E-1 (1,1,1-TCA, 1,1-DCA, cis-1,2-DCE, and TCE), and two VOCs were detected in F-1 (cis-1,2-DCE and VC) at concentrations exceeding the water quality standards. Locations E-1 and F-1 are located off the west-central portion of the landfill.

Only iron, magnesium, manganese and sodium were detected at concentrations above the water quality standards in the pore water samples.

Surface Water Results

No PCBs, VOCs or SVOCs were detected in the surface water samples. Metals were detected in all six surface water samples, but only iron, manganese and sodium were detected at concentrations above the water quality standards.

1.0.15 Sediment Assessment

Concentrations of VOCs and SVOCs detected in sediments did not exceed screening values and require no further action to protect benthic organisms. Metals were detected in 7 of 10 sediment sampling locations at concentrations exceeding Class A sediment screening values; however, none were detected at concentrations above the Class C action level, and therefore they are considered Class B chemicals of concern.

PCBs were detected in one sediment sample, location F-1, at a concentration demonstrating an unacceptable risk to benthic organisms. Analyses of additional samples collected in November 2014 around location F-1 detected PCBs in excess of the TOC-normalized screening value.

PCBs were also detected at several sediment locations around the margins of the landfill in October 2014, but none were at levels presenting an unacceptable risk to benthic organisms for wetland sediments when TOC-normalized concentrations were compared to TOC-normalized screening values.

Metals were detected in two samples from the swale along the southwestern margin of the landfill, but those detections appear localized to the swale itself as samples from the adjacent wetland collected in 2013 did not detect metals at concentrations above the Class C action level.

1.0.16 Exposure Assessment

Prolonged exposure to site-related chemicals in surface soil, subsurface soil, surface water, sediment and groundwater by human and/or ecological receptors could result in unacceptable adverse health effects if the exposure concentration is significant. As the Site is located in an area zoned for commercial and industrial uses, these restricted SCOs are the most applicable to the upland area of the Site, although all SCOs including unrestricted were considered. Ecological exposures were also considered for the wetland and sediments.

Analysis of surface soil, subsurface soil, and groundwater show Site-related chemicals to be present at concentrations above human health risk-based guidelines for residential, commercial and industrial use. Currently, indigent trespasser and utility/maintenance worker exposures are possible. As the Site is not likely to be used for residential development, future potential occupant exposures would be limited to industrial and commercial use scenarios.

The former landfill and immediate surrounding area has developed substantial vegetative cover that provides habitat for ecological receptors. Terrestrial ecological receptors such as soil invertebrates may be exposed to Site-related chemicals by direct contact with contaminated surface soil. Wildlife such as birds and mammals may be exposed to Site-related chemicals through incidental ingestion of contaminated surface soil and ingestion of food organisms that may have taken up chemicals from contaminated surface soil. Ecological receptors have limited access to subsurface soil and groundwater; therefore, these are not considered ecological media of concern.

Benthic organisms occupying the wetlands in the area of sediment location F-1 may be exposed to PCBs in surface sediments at concentrations that may cause unacceptable adverse effects.

1.0.17 Summary of Recommendations

The extent of PCBs, VOCs, SVOCs, and metals have been mostly delineated to Commercial and Industrial Use SCOs with the exception of the southern portion of the landfill.

As determined by wetland sediment sampling, concentrations of VOCs and SVOCs detected in sediments did not exceed screening values and required no further action to protect benthic organisms. Metals were detected in sediment sampling locations around the margins of the landfill above the Class C action level at two locations. PCBs were also detected at several sediment locations around the margins of the landfill, but none were at a level presenting an unacceptable risk to benthic organisms for wetland sediments when TOC-normalized concentrations were compared to TOC-normalized screening values, except at location F-1. AECOM recommended additional delineation of PCBs at the F-1 sediment sample location.

Organic chemical compounds, including chlorinated VOCs and BTEX, were detected in shallow groundwater in the landfilled area. VOCs, including DCE and VC, which are reductive dechlorination by-products of the PCE and TCE, were detected at two of the wetland piezometers. AECOM recommended additional investigation to further assess the potential pathway for westerly transport of VOCs in groundwater from the landfilled area along the top of the clay layer.

Chemicals were detected in surface soil and sediment at concentrations exceeding NYSDEC screening values for the protection of ecological receptors. AECOM recommended a NYSDEC Fish and Wildlife Resource Impact Assessment (FWRIA).

Given the uncertainty that potentially higher concentrations of chlorinated VOCs may be transported in groundwater along the top of the clay layer or that these concentrations are alternatively being treated by the observed natural attenuation process before migrating off-Site, AECOM recommended that four additional wells be installed at the edge of the wetland to the top of the clay layer.

1.0.18 NYSDEC Review of the 2015 RCRA Facility Investigation Report

AECOM submitted the *RCRA Facility Investigation Report*, dated April 2015 to the NYSDEC for review and comment. As a result of discussions with NYSDEC following their review of the investigation report, UTC/Carrier and NYSDEC agreed that a supplemental investigation was warranted to address NYSDEC's concerns and fill in data gaps that AECOM identified in the report.

Several of the NYSDEC's comments on the *RCRA Facility Investigation Report* were editorial in nature or requested clarification. The following addresses only those review comments that warrant additional Site investigation. The editorial comments and those requesting additional information will be addressed in the supplemental investigation report.

Location F-1:

NYSDEC had requested that sampling at location F-1 be extended below the 24-inch depth if there was reason to suspect even deeper contamination or there are really deep sediment pockets below 24 inches. However, this was not done during the investigation.

AECOM responded that the F-1 location will be sampled to determine the depth of contamination. The sampling approach will be included in the RFI Work Plan (this document) for NYSDEC review and approval.

Apparent Mounding in the TR-06 Area

The NYSDEC requested an explanation for the apparent groundwater mounding at the location TR-06.

AECOM responded that there was limited site-specific groundwater elevation data available to provide a firm determination of the apparent groundwater mounding condition. The mounding might be anomalous condition. Alternately, there are several situations that can result in a mounding condition (e.g., heterogeneous deposits in the subsurface, groundwater recharge via surface infiltration, etc.). The supplemental investigation will include additional groundwater level monitoring and evaluation of subsurface conditions to further assess the apparent mounding condition.

Vertical and Horizontal Nature and Extent of Groundwater Contamination

The NYSDEC stated that the vertical and horizontal nature and extent of contaminants in groundwater has not been delineated.

AECOM acknowledged that additional investigation activities are warranted and this was discussed in Section 7 – Conclusions and Recommendations of the 2015 RCRA Facility Investigation Report.

Investigation of Extent of Contamination South of the Landfill

The NYSDEC noted that investigation of contaminants in existing off-site landfill materials beyond the southern property boundary has not been conducted.

AECOM noted that the supplemental RFI Work Plan (i.e., this document) would include proposed activities to delineate the vertical and horizontal extend of contamination beyond the southern property boundary.