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July 7, 2011

Ms. Tara M. Blum, P.E.
NYSDEC Region 7
Division of Environmental Remediation
615 Erie Boulevard West
Syracuse, New York 13204-2400

Re: Carrier Corporation, Thompson Road Facility, Syracuse, New York
Corrective Action Order — Index CO 7-20051118-4
Potential PCB Source Work Plan — Storm Line Bedding Material Excavations Work Plan (Rev 1)

Dear Ms. Blum:

Please find enclosed one hard copy of the referenced work plan. This work plan outlines the proposed activities to:

- determine if PCB-containing oil (free-product) exists in the subsurface, specifically the storm line bedding material
- determine whether PCBs are migrating from other areas of the site to these old outfalls via the storm line bedding material.

Please contact me at (615) 255-9300 or mheflin@ensafe.com, if you have any questions.

Sincerely,

EnSafe Inc.

May M. Heflin, P.E.

Encl. *Storm Line Bedding Material Excavations Work Plan (Rev 1), 2011*

cc: Mr. Larry Rosenmann — NYSDEC, DER Central Office (1 hard copy)
Mr. Mark Sergott — NYSDOH (1 hard copy)
Mr. James E. Gruppe — NYSDEC (1 hard copy)
Mr. William Penn — UTC (electronic copy)
Mr. Nelson Wong — Carrier Corp. (electronic copy)

j:\nashville\m-z\utc\carrier-syracuse\potential pcb sources\pot pcb sources wp (rev 0), october 2010\storm line excavation wp\phase 2 - pcb wp (rev 1) storm line bedding material cvl - 070711.docx

PHASE 2 — PCB SOURCE INVESTIGATION WORK PLAN
STORM LINE BEDDING MATERIAL INVESTIGATIONS

UNITED TECHNOLOGIES/CARRIER CORPORATION
THOMPSON ROAD FACILITY
SYRACUSE, NEW YORK

EnSafe Project Number
0888809186

Revision No.: 1

Prepared for:

United Technologies Corporation
UTC Shared Remediation Services
United Technologies Building
Hartford, Connecticut 06010

Prepared by:

EnSafe Inc.
220 Athens Way, Suite 410
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July 2011

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STORM LINE BEDDING MATERIAL INVESTIGATIONS

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Prepared By:	**Reviewed By:**
May M. Heflin, PE	Lori Goetz
July 7, 2011	July 7, 2011
Date	Date

Storm Line Bedding Material Investigation Work Plan

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EXECUTIVE SUMMARY

Carrier Corporation, a wholly-owned subsidiary of United Technologies Corporation, is currently working through Corrective Action Order — Index CO 7-20051118-4 (order) dated February 13, 2006, with the New York State Department of Environmental Conservation Division of Solid and Hazardous Materials (NYSDEC-DSHM), to identify potential sources of polychlorinated biphenyls (PCBs) in storm water effluent at Outfall 002.

Carrier submitted the *Phase 2 PCB Source Investigation Work Plan* to NYSDEC-DSHM on February 24, 2010, based on comments received on the *Potential PCB Sources Report* (Carrier, 2009). In dialogue with the agency, the site strategy has evolved since February 2010:

- NYSDEC-DSHM, in correspondence dated April 30, 2010, commented on this work plan with requests for additional and more extensive investigations.

- Subsequent to the NYSDEC-DSHM April 30, 2010 correspondence, Carrier representatives met with NYSDEC Region 7 representatives on May 12, 2010, to discuss an overall approach to controlling storm water discharges at the Carrier facility. This approach included a combination of treatment, storage, and diversion to meet the 25-year, 24-hour storm event for the 002 outfall basin at the facility.

- Following the May 12 meeting with the NYSDEC, in which Carrier committed to compliance with the 25-year, 24-hour storm water event, Carrier met with NYSDEC representatives to discuss the April 30 comments, and how the work plan would be reevaluated in consideration of the storm water management commitment.

This work plan reflects the meetings and discussions that have occurred over the last year and describes Carrier's approach for continued PCB source investigations at the site, focusing on the areas with the greatest potential of being significant ongoing PCB sources.

Because the investigations will occur in several areas of the campus, a work plan has been prepared separately for each. The three work plans included are:

- ***PCB Investigation — Sub-Slab PCB Investigation in Building TR-1*** — this work plan has been implemented, the investigation completed, and an investigation report will be submitted to NYSDEC in July/August 2011. While PCBs were detected at limited locations in soil and/or groundwater under the sub-slab of Building TR-1, the findings support Carrier's conceptual site model that PCBs in sediments along the Thompson Road storm sewer originate from historical releases at the Transformer Yard.

- ***PCB Investigation — Thompson Road & TR-18 Storm Line Bedding Material Excavations*** — a work plan (Rev 0) was originally submitted to NYSDEC in October 2010, with verbal comments made by Mr. Larry Rosenmann in two telephone conversations in December 2010, and written comments sent via e-mail on December 15, 2010. This work plan (Rev 1) is intended to address and incorporate these comments.

- ***PCB Investigation — Transformer Yard Storm Line Excavation at Manhole 116 (sludge area)*** — a work plan was submitted in NYSDEC in June 2011.

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1.0 STORM LINE INVESTIGATION

1.1 Historical Use

The storm sewer lines at the Carrier facility were constructed in the early 1940s by the original owner of the property (Defense Plant Corporation). The intended use of the lines was to convey storm water runoff to a series of outfalls that discharge into Sanders Creek. Over time, the storm lines have developed cracks and gaps, and sediment and other debris has accumulated. From 2001 through 2009, Carrier has periodically sampled the sediments that accumulated in the manholes and pressure-washed the storm lines in an effort to maintain the lines and to remove polychlorinated biphenyl (PCB)-containing sediments. **Figure 1-1 — Historic Sediment Sample Locations** shows the historical sediment samples obtained from manholes in Drainage Basin 002 and corresponding PCB results.

1.2 Proposed Investigation Locations

Carrier will focus its investigations on bedding material soils underlying specific storm line sections and groundwater in bedding material at former outfalls, as follows:

1. Carrier will conduct a subsurface investigation along sections of the Carrier storm line system that have historically exhibited elevated concentrations of PCBs in manhole sediment samples. Based on this data, the New York State Department of Environmental Conservation (NYSDEC), in comments dated April 10, 2010, requested further investigation along five sections of the Thompson Road and TR-18 storm lines as follows (**Figure 1-2 — Proposed Storm Line Excavation Areas**):

    - Thompson Rd line near MH-89
    - Thompson Rd line near MH-12
    - TR-18 line near MH-137 (near Bldg TR-23)
    - TR-18 line near MH-126/TR-6 area
    - TR-18 line near MH-196

    The purpose of this subsurface investigation is to determine if PCB-containing oil (free-product) exists in the subsurface, specifically the storm line bedding material. Carrier will use a threshold of PCB detections in soil greater than 25 milligrams per kilogram (mg/kg) as the basis for expanding field investigations beyond the locations cited in this work plan. This concentration represents the industrial soil cleanup objective (SCO) for PCBs listed in Table 375-6.8(b): Restricted Use Soil Cleanup Objectives of the New York State Department of Environmental Conservation (NYSDEC) Subpart 375-6: Remedial Program Soil Cleanup Objectives.

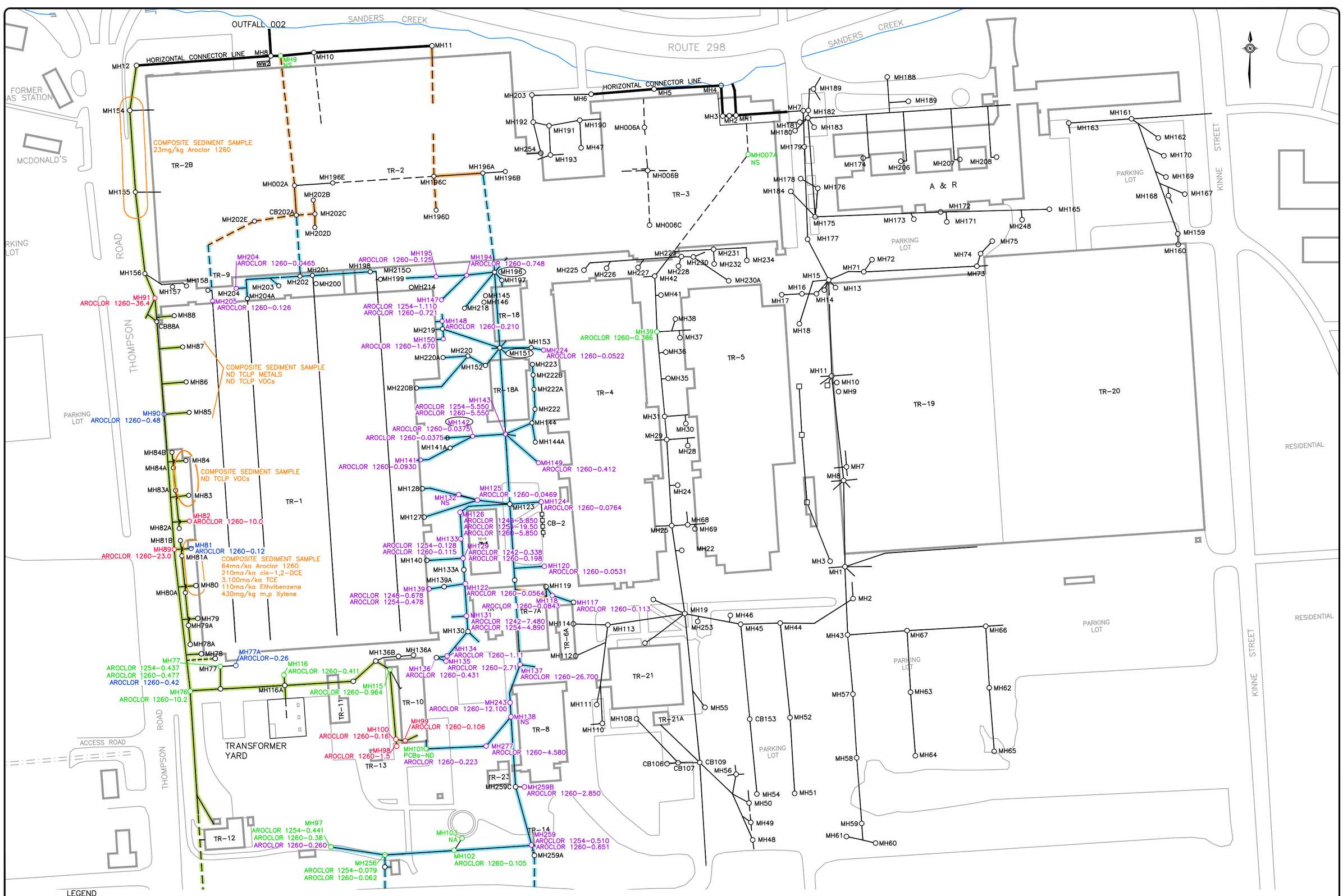

FIGURE 1-1: HISTORIC SEDIMENT SAMPLE LOCATIONS
CARRIER FACILITY, THOMPSON ROAD
SYRACUSE, NEW YORK

REQUESTED BY:	M.H.
DRAWN BY:	E.R.
DWG DATE:	12OCT10
DWG NO:	5771R032

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SECTION #2-@MH154

SECTION #5-@MH196

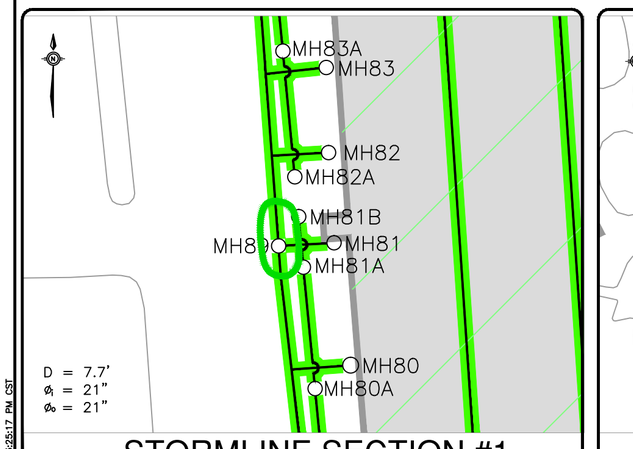
SECTION #4-@MH126

SECTION #1-@MH89

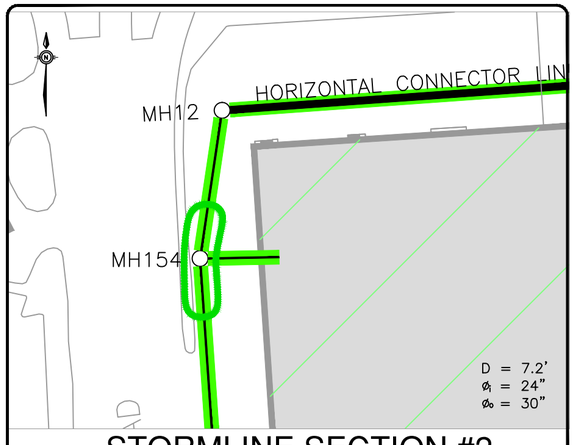
SECTION #3-@MH137

LEGEND
- TR-2 — BUILDING
- STORM SEWER AND SIZE
- MH ○ — MANHOLE
- STORMLINES IN BASIN 002

0 150 300
SCALE IN FEET

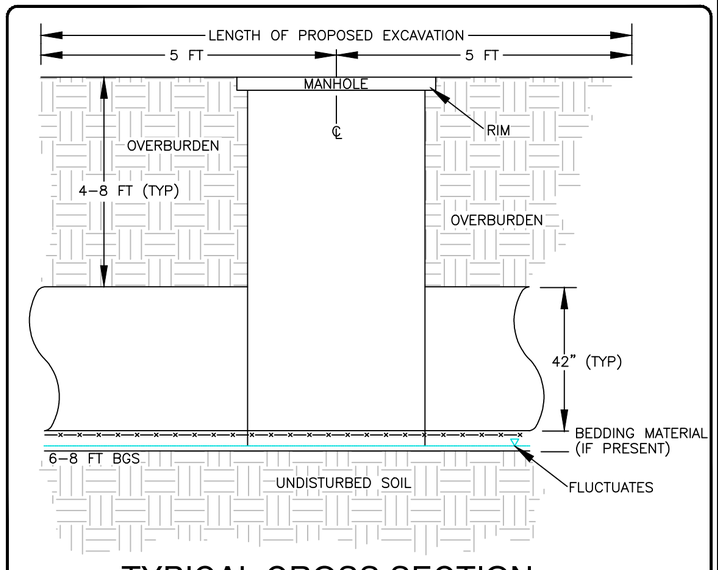


STORMLINE SECTION #1

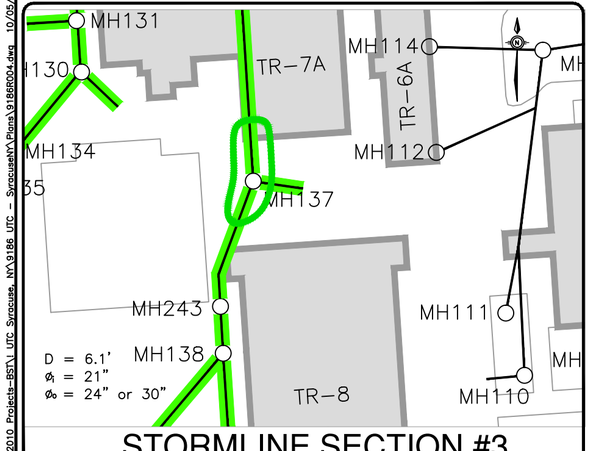


STORMLINE SECTION #2

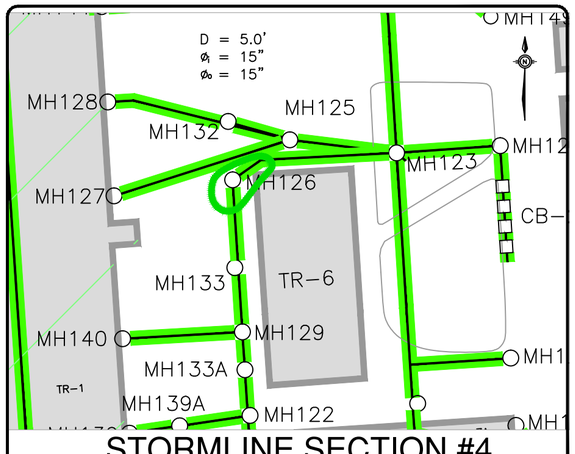
LEGEND
D – DEPTH OF MANHOLE FROM RIM TO BOTTOM OF MANHOLE
ϕi – DIAMETER OF STORMLINE ENTERING MANHOLE
ϕo – DIAMETER OF STORMLINE EXITING MANHOLE



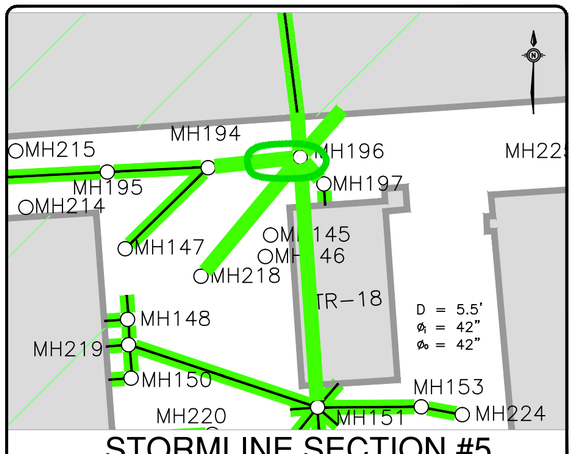
TYPICAL CROSS SECTION



STORMLINE SECTION #3



STORMLINE SECTION #4



STORMLINE SECTION #5

FIGURE 1–2: PROPOSED STORM LINE EXCAVATION
PHASE 2 PCB INVESTIGATION WORKPLAN
CARRIER FACILITY, THOMPSON ROAD
SYRACUSE, NEW YORK

REQUESTED BY:	M.H.
DRAWN BY:	E.R.
DWG DATE:	05OCT10
DWG NO:	9186R004

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If PCBs are present in soil above 25 mg/kg, Carrier will conduct further investigation as necessary to define extent of PCB impact. Using a direct push technology (DPT) rig, soil borings will be advanced along the storm line at 10-foot intervals to a depth of approximately 1 foot below the storm line invert elevation or just above the groundwater table, whichever is shallower. The direction of the investigation (i.e., up the storm line and/or down the storm line) will be determined by the soil samples obtained from the trench.

If groundwater is encountered above the piping invert elevation, the soil sampling protocol on either side of the manhole will not be implemented. Instead, sampling will focus immediately on groundwater. If groundwater is not present above the piping invert, the trench will be extended to a depth of 1 foot below the groundwater table. Groundwater will be observed for evidence of sheen or free product. Groundwater samples will be collected if (a) soil concentrations exceed 25 mg/kg, or (b) sheen or free product are observed.

Upon completion of these investigation activities, Carrier will evaluate remedial options and make a recommendation on managing the PCB-containing soils as part of a comprehensive (focused) Corrective Measures Study (CMS).

2. In telephone conversations on December 14, 2010 and December 22, 2010, Mr. Rosenmann requested groundwater sampling from bedding materials at the former outfalls that discharged to Sanders Creek prior to Carrier's outfall consolidation project and at the two current outfalls (Outfalls 001 and 002 — not the same as the former outfalls) that discharge to Sanders Creek.

   Carrier will install a temporary well and obtain a groundwater sample in the bedding material at each of the former outfall locations as indicated on **Figure 1-3 — Proposed Temporary Well Locations at Former Outfalls**, provided the outfall discharge pipes can be located. The purpose of this task is to determine whether PCBs are migrating from other areas of the site to these old outfalls via the storm line bedding material. Although the first task in this investigation may not find PCBs in the bedding material at concentrations above the industrial SCO of 25 mg/kg, Carrier will nevertheless install the temporary wells at the old outfalls.

LEGEND

- OUTFALL 001 — FORMER/ABANDONED STORMWATER OUTFALLS OUTFALLS 001 AND 002 ARE EXISTING OUTFALLS
- TW005 — TW001, 003, 004 AND 005 PROPOSED WELL LOCATIONS
- MW18 — MW-17 AND MW-18 EXISTING GROUNDWATER MONITORING WELLS IN BEDDING MATERIAL OF OUTFALL 002 AND 001, RESPECTIVELY

CARRIER CIRCLE
ROUTE 298 W.
THOMPSON ROAD
NYS ROUTE 298
COLLEGE PL.
CARRIER PARKWAY
SANDERS CREEK
OLD OUTFALL 002 HEADWALL AND PIPING REMOVED
OUTFALL 001
TW001
OUTFALL 002
MW17
OUTFALL 003
TW003
OUTFALL 004
TW004
TW005
OUTFALL 005
OLD OUTFALLS 006 AND 007 HEADWALL AND PIPING REMOVED
OUTFALL 008
OUTFALL 009
OUTFALL 006
OUTFALL 007
OUTFALL 001
MW18
STORM WATER TREATMENT
PARKING LOT D
WET WELL 2
TR-2A
PARKING LOT C
LOADING DOCK EL 38.3'
TR-2
TR-2B
FORMER TR-3
PARKING LOT F
TR-9
FIRST STREET
TR-1E
TR-18
TR-1
EXISTING FLOOR SLAB EL 42.50'
18S

GRAPHIC SCALE
0 150 300
(IN FEET)

FIGURE 1-3
PROPOSED TEMPORARY WELL LOCATIONS AT FORMER OUTFALLS, STORM LINE EVACUATION WORK PLAN
CARRIER FACILITY
SYRACUSE, NEW YORK

REQUESTED BY:	MH
DRAWN BY:	WM
DWG DATE:	05-06-11
DWG:	9186

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Carrier samples the site-wide groundwater monitoring well network annually in June. On June 30 and July 1, 2010, Carrier obtained groundwater samples from monitoring wells MW-17 and MW-18, which are installed in the bedding material of Outfalls 002 and 001, respectively. Carrier analyzed the groundwater samples from MW-17 and MW-18 for Total PCBs using U.S. Environmental Protection Agency (USEPA) Method 8082. The data from this sampling event was submitted to NYSDEC on August 20, 2010, in a report entitled *Corrective Measures Update, Site-Wide Groundwater Monitoring Report (EnSafe, August 2010)*. PCBs were not detected in either sample. No additional sampling of these wells will be performed as part of this investigation.

2.0 STORM LINE EXCAVATIONS — TECHNICAL APPROACH

Five manholes will be assessed in the storm line excavation study:

- Thompson Road line near MH-89
- Thompson Road line near MH-12
- TR-18 line near MH-137 (near Bldg TR-23)
- TR-18 line near MH-126/TR-6 area
- TR-18 line near MH-196

Soil and groundwater samples will be collected during this evaluation.

2.1 Storm Line Excavation Areas

Thompson Road Storm Line Section (@MH-89)

The section of storm line proposed for subsurface investigation will extend approximately 5 feet on either side of MH-89. This section of storm line has been selected for subsurface investigation because sediment samples obtained from MH-89 in 2003 and 2009 found PCBs at 23 milligrams per kilogram (mg/kg) and 79.3 mg/kg, respectively. While it is likely that the sediments in this area have washed down the Thompson Road storm line from the Transformer Yard area storm lines, an area known to have elevated PCB concentrations in sediments, Carrier will excavate soils parallel and as close as possible to the storm line without undercutting the line.

Thompson Road Storm Line Section (@MH-154)

The section of storm line that is proposed for subsurface investigation will extend approximately 5 feet on either side of MH-154. This section of storm line has been selected for subsurface investigation because sediment samples obtained from this manhole in 2002 found PCBs at 23 mg/kg. While it is likely that the sediments in this area have washed down the Thompson Road storm line from the Transformer Yard area storm lines, an area known to have elevated PCB concentrations in sediments, Carrier will excavate soils parallel and as close as possible to the storm line without undercutting the line.

TR-18 line near Bldg TR-23 (@MH-137)

The section of storm line proposed for subsurface investigation will extend approximately 5 feet on either side of MH-137. This section of storm line has been selected for subsurface investigation because sediment samples obtained from MH-137 in 2004 and 2009 found PCBs at 26.7 mg/kg and

16.6 mg/kg, respectively. Also, wastes were formerly stored at Building TR-23, which is immediately upgradient of this manhole. Carrier will excavate soils parallel and as close as possible to the storm line without undercutting the line.

TR-18 line near Bldg TR-6 (@MH-126)

The section of storm line proposed for subsurface investigation will extend approximately 5 feet on either side of MH-126. This section of storm line has been selected for subsurface investigation because sediment samples obtained from MH-126 in 2004 and 2009 found PCBs at 31.2 mg/kg and 13.64 mg/kg, respectively. Additionally, composite samples from the sludge generated from a 2003 storm line cleaning event along this line found PCBs (Aroclor 1254) at 180 mg/kg and 36 mg/kg. Carrier will excavate soils parallel and as close as possible to the storm line without undercutting the line.

TR-18 line near north end (@MH-196)

The section of storm line proposed for subsurface investigation will extend approximately 5 feet on either side of MH-196, which is the northern-most manhole prior to the TR-18 storm line passing under Building TR-2. There is no sediment data from this manhole, but MH-194 to the west was sampled in 2004, with a PCB detection of 0.748 mg/kg. Carrier will excavate soils parallel and as close as possible to the storm line without undercutting the line.

2.2 Investigation Procedures

The following describes the general approach that will be used at each of the five storm line excavation sections described in Section 2.0:

- Open the manhole and evaluate the approximate direction of the piping using visual reference.

- Mark the center line of the pipe from the manhole out 20 feet in each direction. Mark a secondary line on a 20-foot offset to allow for the loss of the initial line during excavation activities.

- For the area to be excavated, saw-cut the asphalt to a clean line, remove it, and load and dispose of off-site as construction-demolition debris.

- Use a backhoe loader or tracked excavator to remove soils above and along side of the 10-foot section of storm line (5 feet on either side of the manhole). It may be necessary to

bench (remove) overburden soils on both sides of the manhole above the pipe to prevent excessive pressure on the manhole structure and potential bank failure.

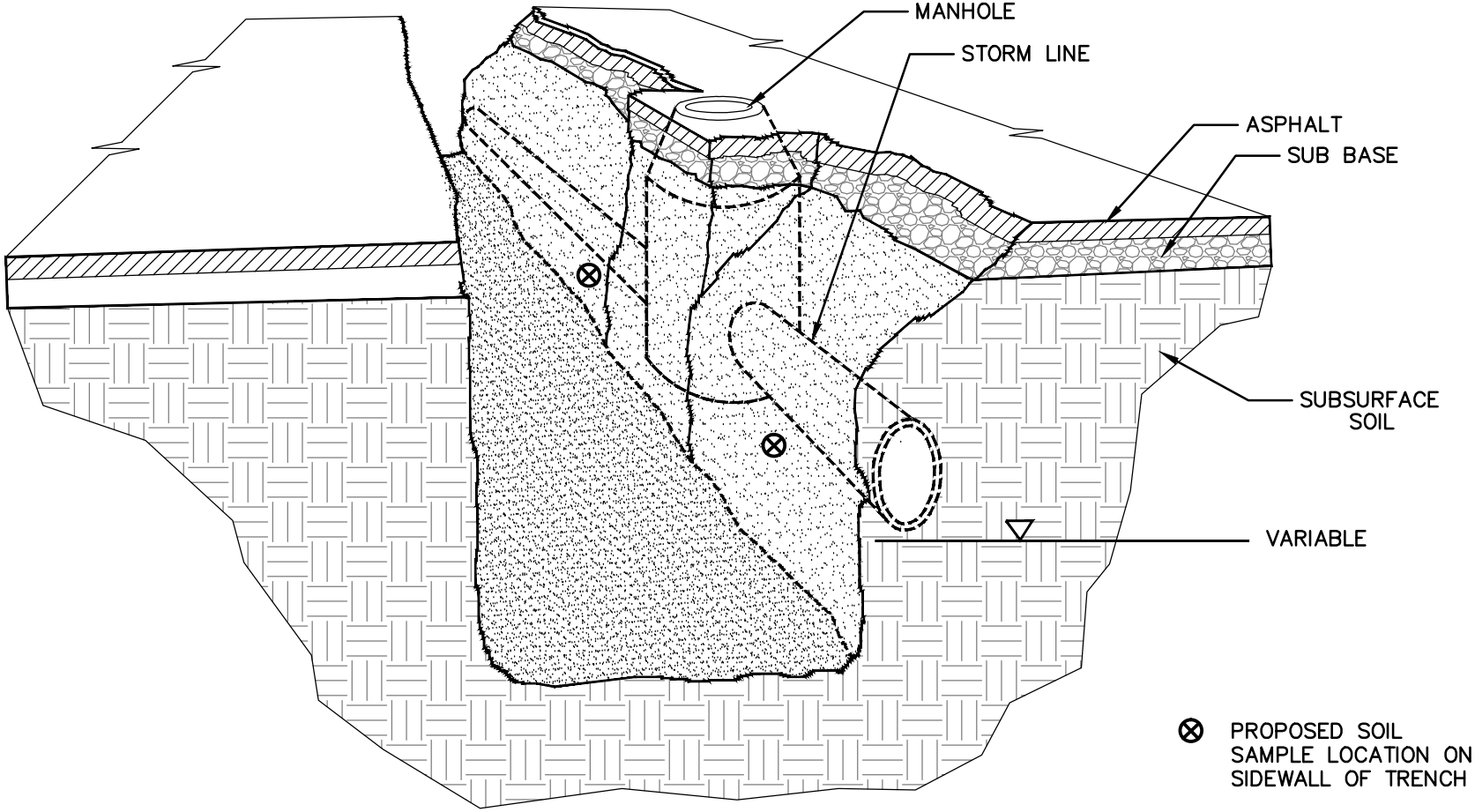
- Excavate a trench (test pit) the width of the backhoe bucket to a depth 1 foot below the storm line so that the bottom of the trench immediately adjacent to the storm line (this material should represent the bedding material) can be exposed and soil samples obtained.

  — At some locations, it is likely that groundwater will be encountered above the invert elevation of the pipe. In this case, the trench depth will extend 1 foot below the groundwater table. The trench will be left open for 24 hours so that groundwater can equilibrate in the trench and be observed for a visible sheen or the presence of non-aqueous phase liquid (NAPL). Soil samples will not be obtained from the sidewall of the trench above the piping invert elevation. However, trench water will be sampled as described in Table 2-2 below.

- The excavation will be close enough to the storm line to expose the side of the line without undercutting it (i.e., the structural integrity of the line will not be compromised by removing the supporting underlying soils). The compressive overburden above the piping will be removed for the length of the excavation (**Figure 2-1 — Proposed Trench Excavation Detail & Sample Locations (typ)**).

- Obtain 2 soil samples, approximately 2 feet on either side of the manhole, approximately 6 to 12 inches directly beneath the storm drain (i.e., bedding material). Soil samples will be submitted to Accutest Laboratories in Dayton, New Jersey (New York Certification 11791), for Total PCB analysis using USEPA Method 8082. The turn-around-time (TAT) on samples sent to the lab will be expedited to minimize the length of time the trench is left open.

- Once the soil samples have been obtained, the excavation will continue downward until groundwater is reached. The excavation depth of the trench will extend approximately 1 foot below the groundwater table. The trench will be left open for 24 hours so that groundwater can equilibrate in the trench and be observed for a visible sheen or accumulation of NAPL. A groundwater sample will be obtained if the soil sample analysis finds PCBs above the industrial SCO of 25 mg/kg or if a visible sheen or NAPL is observed. Groundwater samples will be analyzed for Total PCBs and for VOCs using USEPA Method 8260B. If NAPL is present, sample will be obtained for fingerprint analysis to determine its composition.



TRENCH EXCAVATION (TYPICAL)

FIGURE 2-1
PROPOSED TRENCH EXCAVATION DETAIL
AND SOIL SAMPLE LOCATIONS
PHASE 2 PCB INVESTIGATION WORKPLAN
CARRIER FACILITY, THOMPSON ROAD
SYRACUSE, NEW YORK

REQUESTED BY:	MH
DRAWN BY:	WM
DWG DATE:	10/25/10
DWG NO:	0888808989

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- Overburden soils (those above the storm line) will be stockpiled on the ground surface close to the excavation area. Soils at or below the top of storm line will be stockpiled on minimum 6 mil polyethylene sheeting adjacent to the excavation area. Any open excavations will be stabilized to prevent sloughing and any remaining stockpiled soils will be covered with minimum 6 mil polyethylene sheeting.

- The excavation will be backfilled with existing soils if PCB concentrations are less than 25 mg/kg. Low compressive flowable fill may be used to replace any bedding material that sloughs into the excavation. If PCB concentrations in soil are greater than 25 mg/kg, the excavation will be backfilled with clean soils/stone (following adherence to Table 2-1 paths forward as presented below). The overburden soils will be used to complete the backfill. PCB-containing soils will be disposed of in accordance with applicable regulations.

- Following completion of excavation and backfill activities, the cut will be replaced with 4-inch base material and 2-inch topcoat.

2.3 Soil Sampling Techniques

Grab Samples from Trench Excavation

A stainless steel hand auger with 5 to 8 feet of extension rod will be used to obtain soil samples from the bottom and/or sidewall of the excavation trench. This method will allow for safe sample collection from the ground surface. The hand auger will be extended to the target sample area and used to collect the sample of the bedding materials. Soil samples will be submitted to Accutest Laboratories for Total PCB analysis using USEPA Method 8082.

The hand auger will be decontaminated with a deionized water and Alconox mixture and rinsed with deionized water.

DPT Soil Sampling

If necessary, a DPT drilling rig will be employed to conduct the expanded subsurface investigation along the storm line. At each location along the storm line, the asphalt pavement will be cored using an asphalt coring machine to provide an access point for the rig. Once coring is complete, the DPT drilling rig will advance steel rods containing acetate sleeves that will allow collection of the soil column encountered. The DPT rig is a hydraulically powered soil-probing machine that uses static force and percussion to advance small diameter sampling tools into the subsurface for collecting soil core and groundwater samples. A closed-piston sampling tool with plastic liner will

be used for soil sample collection. From the ground surface, the sampler is advanced 48 or 60 inches (depending on the sampling tool length) and retrieved from the borehole with the first sample. The plastic sleeve and soil core are removed, a new sleeve is installed, and the sampler is inserted back down the same hole to collect a sample from the next interval.

Soil and Headspace Logging — DPT Sampling

The soil column will be evaluated at 2-foot intervals and split for description purposes and field screening using a photoionization detector. After the soil has been in the sealable plastic bag or glass jar for a sufficient amount of time, the volatile organic vapor concentration will be measured from the headspace of each bag or jar. The concentrations will be recorded in the field logbook or on soil boring logs for each boring. Descriptions of the soils encountered will also be placed on soil boring logs and/or recorded in the field logbook.

Only the bottom-most soil sample from the soil column (at approximately 0 to 1 foot below bedding material) will submitted to the to Accutest Laboratories for Total PCB analysis

Trench Groundwater Sampling

If soil sampling data and/or visual observation of accumulated groundwater indicate the need for grab sample from the trench (see Table 2-2 for explanation of sampling decision), a sample will be obtained using a poly-propylene disposable bailer or peristaltic pump and transferred to a sample bottle. Otherwise, groundwater sampling via temporary or permanent groundwater monitoring wells is not proposed as part of this storm line bedding material investigation.

Samples will be submitted to Accutest Laboratories for Total PCBs and for VOCs using USEPA Method 8260B.

2.4 Decision Framework

Tables 2-1 and 2-2 summarize some of the actions that may occur in the field for some of the primary possible outcomes. Not all potential findings and paths forward can be summarized in this work plan, and some work stoppage may be necessary to discuss findings with NYSDEC prior to continuing field investigations.

Table 2-1
Paths Forward Based on Soil Sampling

1. If PCBs are found in soils at concentrations <25 ppm, no further investigative actions are warranted. In this case, Carrier will propose a deed notice, environmental easement, or other mechanism to restrict future use of this area, as necessary.

2. If PCBs in soils are found at concentrations >25 ppm, then Carrier will conduct further investigation as necessary to define extent of PCB impact. Trenching will not be used to expand the investigation. Instead, Carrier will use a direct push technology (DPT) rig to advance soil borings along the storm line at 10-foot intervals. The borings will be advanced to approximately 1 foot below the storm line invert elevation or just above the groundwater table, whichever is shallower. The direction of the investigation (i.e., up the storm line and/or down the storm line) will be determined by the soil samples obtained from the trench.

   Upon completion of these investigation activities, Carrier will evaluate remedial options and make a recommendation on managing the PCB-containing soils as part of a comprehensive (focused) Corrective Measures Study (CMS).

3. If groundwater is encountered above the piping invert elevation, the soil sampling protocol on either side of the manhole will not be implemented. Instead, sampling will focus immediately on groundwater. A groundwater sample will be obtained and submitted to the laboratory for VOC analysis using USEPA Method 8260b and Total PCB analysis using USEPA Method 8082.

Table 2-2
Paths Forward Based on Trench Water Sampling

1. After groundwater has accumulated in the excavation, if the soil excavation sample results are <25 ppm for PCBs, a water sample will not be collected, unless upon visual inspection, a visible sheen or free-product are noted, in which case the water will be sampled and submitted to the laboratory for VOC and Total PCB analysis. If possible, a sample of free-product will be obtained for finger-print analysis.

2. After groundwater has accumulated in the excavation, if the soil excavation sample results are >25 ppm for PCBs, then a water sample will be collected and submitted to the laboratory for Total PCB and VOC analysis.

3. If PCBs are detected in any water sample, the lab will be instructed to filter the sample through a 40-micron filter and re-analyze for dissolved PCBs.

4. If laboratory analysis indicates PCBs or VOCs in groundwater, the excavation will be backfilled and no further actions will be taken as the facility currently operates an end-of-pipe air stripper that removes VOCs prior to discharge to Sanders Creek. Carrier also operates an end-of-pipe PCB treatment system that removes PCBs prior to discharge. Outfalls 001 and 002 also have a barrier wall and recovery well system that collects groundwater in the bedding material and discharges it back to the storm line system upgradient of both treatment systems. Further discussion on the potential migration of PCBs in bedding material groundwater (if found) and possible corrective actions is discussed in Section 2.2.

5. If laboratory analysis indicates VOC or PCB-related NAPL, then Carrier will conduct further investigation as necessary to define extent of impact. This investigation will not occur during this mobilization, but after existing data and historical information can be reviewed and an appropriate investigation plan can be developed. Upon completion of these investigation activities, Carrier will evaluate remedial options and make a recommendation on managing the PCB-containing soils as part of a comprehensive (focused) CMS.

3.0 OUTFALL BEDDING MATERIAL INVESTIGATION — TECHNICAL APPROACH

As mentioned above, Carrier historically discharged storm water from its network of storm lines to Sanders Creek via nine outfalls. These outfalls were consolidated into two current outfalls (001 and 002) in 1997 as part of an outfall consolidation project designed to capture and route storm water in the storm lines in Drainage Basins 001 and 002 to an air stripper treatment system in the northeast corner of former Building TR-3. Outfalls 001, 002, 003, and 004 were consolidated into a single outfall at 002 and Outfalls 005, 006, and 007 were similarly consolidated into a single outfall at 001. Outfalls 008 and 009 discharged upgradient of Outfall 001, and were not included in the outfall consolidation project, but were abandoned in place. A historical figure (**Appendix A — 2001 Carrier Former Outfalls Figure**) dated May 3, 2001 indicates the following:

- Outfalls 001, 003 and 004 were abandoned in place, with the storm piping/headwall remaining. The storm piping and headwall at 002 was completed removed. New manholes 9, 10, 11 and 12 were installed as part of the consolidation project. The old storm lines proceeding north from these manholes were terminated outside the new manhole.

- Outfalls 005, 008, and 009 were abandoned in place, while the storm piping and headwall at 006 and 007 were completely removed. Manholes 203 and 181 were terminated in the manhole and capped watertight. The old storm lines proceeding north from manholes 5 and 7A (formerly 181) were terminated outside the new manhole.

Based on this information, Carrier will attempt to locate the former outfalls 001, 003, 004, and 005 and place a temporary well in the bedding material to obtain a groundwater sample. Former Outfalls 008 and 009 are upgradient of Outfall 001 and are not part of the drainage basins discharging to the permitted outfalls. Temporary wells will not be installed at these locations.

As mentioned in Section 1.2, Carrier obtained groundwater samples monitoring wells MW-17 and MW-18, which are installed in the bedding material of Outfalls 002 and 001, respectively. Carrier analyzed the groundwater samples from MW-17 and MW-18 for Total PCBs using USEPA Method 8082. The data from this sampling event was submitted to NYSDEC on August 20, 2010, in a report entitled *Corrective Measures Update, Site-Wide Groundwater Monitoring Report (EnSafe, August 2010)*. PCBs were not detected in either sample. No additional sampling of these wells will be performed as part of this investigation.

Temporary Well Installation at Former Outfalls

The following describes the general approach that will be used to install the temporary wells in the bedding material of the abandoned outfalls. It is likely that the outfall piping was laid directly on native soil, and that no granular bedding material (e.g., sand or gravel) was used.

- Field personnel will visually locate former Outfalls 001, 003, 004, and 005. Once located, the drill crew will be instructed on the approximate location and where to begin drilling and temporary well installation activities. A DPT drilling rig will be employed to install the temporary wells. The soil boring will be advanced as close the storm line as possible without making contact, though because the line is abandoned, avoidance of it is not critical.

- At each proposed temporary well location, the soil column will be evaluated at 2-foot intervals from ground surface to groundwater (estimated to be 4 feet bgs). The 2-foot soil sample will be split for description purposes and field screening using a photoionization detector (PID). The maximum depth of each DPT soil boring is not expected to exceed 10 feet as the depth to groundwater is estimated to average approximately 4 feet along the creeks southern edge.

- A temporary 1-inch diameter monitoring well constructed of polyvinyl chloride (PVC) materials will be installed in the borehole and will be used to collect grab groundwater samples at each location. The temporary monitoring wells will be installed with the DPT rig using a double push rod system of inner and outer rods. One section of inner rod will be fitted with a drive point and inserted into a section of outer rod. The drive point on the inner rod prevents soil from entering the outer rod as the rod string is pushed into the ground. New inner and outer rods are added as the rod string is advanced into the ground. Once the target depth is reached, the inner rods will be removed, leaving the outer rods in place to hold the hole open during temporary well installation.

  If the cohesiveness of the soil allows the hole to stay open when the rods are removed, single rods may be used instead of the dual-rod system. Use of single rods instead of dual rods will expedite temporary well installation.

- The 1-inch diameter PVC temporary well screen and riser materials will be lowered through the outer rods to the bottom of the hole. The length of well screen will depend on the total depth of the boring, with no less than 5 feet of screen and no more than 10 feet of screen being used. Once the temporary well is in place, a sand filter pack will be poured through the rods as they are slowly pulled to approximately 2 feet above the temporary well screen, allowing the sand filter pack to form around the screen.

- After the DPT rods have been pulled above the screened interval, the remaining portion of the hole will be sealed to ground surface with granulated bentonite, which will be slowly poured down the annulus as the rods are pulled from the hole. The bentonite granules in the vadose zone will be hydrated with deionized water. All temporary wells will be completed flush with ground surface and sealed with water-tight caps. The temporary wells will be abandoned in accordance with NYSDEC regulations, after groundwater results have been received and evaluated.

- After allowing the temporary wells to equilibrate overnight, groundwater samples either will be collected using dedicated, disposable bailers or a peristaltic pump at each temporary well or will be collected using a length of new dedicated polyethylene tubing attached to a peristaltic pump by which the water can be drawn up into the tubing.

- Groundwater samples will be submitted to the laboratory and analyzed for Total PCBs using USEPA Method 8082.

Carrier will conduct a one-time sampling of the temporary wells installed during the scheduled field activities and will abandon the wells in accordance with NYSDEC standards once data has been received and reviewed.

If laboratory analysis indicates PCB in bedding material groundwater, then Carrier may conduct further investigation to determine the source of PCBs in the bedding material. This investigation will not occur during this mobilization, but after existing data and historical information can be reviewed and an appropriate investigation plan can be developed. Upon completion of these investigation activities, Carrier will evaluate remedial options and make a recommendation on managing bedding material groundwater as part of a comprehensive (focused) CMS.

4.0 HEALTH AND SAFETY PLAN AND IDW

All field activities will be conducted in compliance with the site-specific health and safety plan, to be prepared prior to conducting activities outlined in this work plan. The health and safety plan will be prepared by EnSafe specifically for the activities described herein.

Investigation derived wastes (IDW) generated during the field activities will be placed in Department of Transportation-approved drums, logged, properly labeled, and stored on the site. Analytical data from the investigation will be used for characterization, as practicable.

5.0 IMPLEMENTATION SCHEDULE

The schedule for the storm line excavation activities outlined in this work plan is as follows:

Proposed Schedule	
Submit Work Plan to NYSDEC	➔ July 8, 2011
NYSDEC Review and Approval	➔ August 22, 2011 (approximately 45 days after submittal)
Preparation and Mobilization for Field Activities	➔ Following NYSDEC approval of work plan
Completion of Field Investigation Activities	➔ 30 days after mobilization
Report generated for submittal to NYSDEC	➔ 60 days after completion of field activities

Note: Dates are conditional based upon approval date of work plan, investigation findings, and other factors.

Appendix A
2001 Carrier Former Outfalls Figure

Old Outfalls # 001, 003, 004, 005, 008, 009 are abandoned in place (storm piping / headwall still exist

Old Outfalls # 002, 006, 007 Storm piping / headwall were completely removed

New MH 7 and existing CB 203 were terminated in manhole and capped watertight

New MH 5, 7A, 9, 10, 11, 12. Old Storm lines proceeding north from these M.H were terminated outside new M.H.

Date 5/3/2001
J. Kembrey