May 2, 2007

REMEDIAL INVESTIGATION WORK PLAN

230 Duffy Avenue
Hicksville, Town of Oyster Bay,
Nassau County, New York

Prepared for

LONG ISLAND INDUSTRIAL, LLC
575 Underhill Boulevard
Syosset, New York 11791-3426

ROUX ASSOCIATES, INC.

Environmental Consulting & Management

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1.0 INTRODUCTION

Roux Associates, Inc. (Roux Associates), on behalf of Long Island Industrial Group One, LLC (Volunteer), has prepared this Remedial Investigation (RI) Work Plan for a site (Site) occupying 230 Duffy Avenue, Hicksville, New York (Figure 1).

1.1 Brownfields Cleanup Program Application and Environmental Work Plans

Due to the presence of contaminated groundwater at the Site, the Volunteer submitted an application to remediate the Site under the New York State Brownfield Cleanup Program (BCP) on September 24, 2004. The New York State Department of Environmental Conservation (NYSDEC) accepted this application and the Volunteer entered into a BCP agreement with the NYSDEC on May 18, 2005. The RI Work Plan was submitted as part of the BCP application and has been revised herein. The RI has been developed in accordance with the draft BCP Guide (May 2004) and the Draft DER-10 Technical Guidance for Site Investigation and Remediation (December 2002) issued by the NYSDEC. The purpose of the RI is to determine the nature and extent of contamination at the Site, characterize environmental media at the Site, qualitatively assess the potential exposure of receptors to Site contaminants, and develop any other additional data necessary to support the development of a Remedial Action Work Plan (RAWP).

1.2 RI Work Plan Document Organization

This RI Work Plan contains a background section (Section 2) describing the Site, its history, and results of previous environmental investigations; a section defining the objectives and scope of the RI (Section 3); and sections (Sections 4 and 5) describing various project operations plans (e.g., Quality Assurance/Quality Control, Health and Safety). Reporting requirements and the project schedule are discussed in Section 6. Additionally, tables are provided that summarize all previously collected environmental quality data. Finally, maps are also provided to illustrate site conditions, previous environmental data, and locations of proposed sampling efforts.

1.3 Project Team Contact Information

Roux Associates' Project Manager and Principal-In-Charge for this Site will be Mark Elmendorf, Principal Scientist. Mr. Elmendorf, who is based in Roux Associates' Islandia, New York headquarters office and can be reached at (631) 232-2600, will be responsible for day-to-day management of the project, including preparation of work plans, and scoping and directing field

activities. Daren Moss, Senior Hydrogeologist will act as Field Manager for the duration of the project, and will be responsible for implementing and directing field activities onsite.

The name and contact information for the Volunteer are provided as follows.

Mr. Jeff Cohen
Long Island Industrial Group One, LLC
575 Underhill Boulevard
Syosset, New York 11791

At this time, subcontractors for drilling, analytical, waste disposal, and other subcontracted services have not yet been selected. This information will be provided to NYSDEC immediately following contractor selection.

2.0 BACKGROUND

This section provides pertinent background information, including a description of the Site and its setting, the known history of the Site, and the results of preliminary environmental investigation work conducted at the Site.

2.1 Site Description and Setting

Property Location	
Property Name:	Office and warehouse building
Property Address:	230 Duffy Avenue
Property Town, County, State:	Hicksville, Town of Oyster Bay Nassau County, New York 11801
Property Tax Identification:	Section 11, Block G, Lot 187
Property Topographic Quadrangle:	Hicksville, New York
Nearest Intersection:	Duffy Avenue and Po Lane
Area Description:	Commercial and Industrial

A Site location map, showing topography is included as Figure 1.

Property Information	
Property Acreage:	6.76 acres
Property Shape:	Irregular
Property Use:	Office/Warehouse
Number of Buildings:	Two
Number of Stories:	One and Two
Date of Construction:	1951
Building Square Footage:	122,900 square feet
Basement/Slab-on-Grade	Partial basement
Number of Units:	Five
Ceiling Finishes:	Acoustic ceiling tiles and exposed structural elements
Floor Finishes:	Carpet, bare concrete, and ceramic and vinyl tiles

Property Information	
Wall Finishes:	Painted drywall and exposed structural elements
HVAC:	Natural gas-fired roof top units
Renovation Date:	1998
Renovation Description:	Roof of the subject building replaced
Vehicular Access:	Via Duffy Avenue
Other Improvements	Retaining wall
Property Coverage:	Footprints of the subject buildings, associated parking areas, lawn areas, and landscaping

An Environmental Data Resources, Inc. (EDR) GeoCheck® Report is provided in Appendix A, which provides information regarding elevation, groundwater flow, Federal USGS well information, Federal FRDS Public Water Supply system information, and state database well information.

2.1.1 Property Operations

According to the Owner, the site property is currently occupied by the following tenants:

Tenant	Operations
United Refrigerator	Warehouse/retail sales of refrigeration equipment
American Defense Systems	Office/R&D

No industrial or manufacturing operations were observed at the Site at the time of the property visit completed for the Phase I Environmental Site Assessment (ESA), dated July 17, 2000.

2.1.2 Utilities

Property Solutions, who completed a Phase I ESA in June 2002, was informed by Mr. Ray Auer of the Maintenance Staff of Long Island Industrial that the following companies and municipalities currently provide utility services to the Site:

Utility	Provider
Electricity:	Long Island Power Authority (LIPA)
Natural Gas:	Brooklyn Union
Sanitary Sewerage:	Nassau County Sewer
Potable Water:	Hicksville Water District
Solid Waste Removal:	Varies by Tenant

2.1.3 Topography/Hydrogeology

Review of the United States Geological Survey (USGS) 7.5-minute series topographic quadrangle map of Hicksville, New York reveals that the elevation of the Site is approximately 135 feet above mean sea level. The topography of the Site is essentially flat with only a slight grade. According to water level data for Long Island (USGS 1989), the water table at the Site is in the Upper Glacial aquifer and the regional depth to groundwater ranges from 55 to 65 feet below land surface within ½-mile of the Site. The regional groundwater flow direction is South-southeast. Local groundwater is expected to mirror local topography and migrate to the south, toward the Cedar Swamp Creek.

2.1.4 Soils

Based on a review of the United States Department of Agriculture, Soil Conservation Service's *Soil Survey of Nassau County, New York* (February 1987), soils in the area of the Site are classified as Urban land (Ug).

Urban land consists of areas where at least 85 percent of the surface is covered by asphalt, concrete, or other impervious building materials.

2.1.5 Underlying Formation

According to the *Surficial Geologic Map of New York* (1989), fluvial sand and gravel underlie the Site. Fluvial sand and gravel consists of deposits of sand and gravel with occasional laterally continuous lenses of silt. The sands and gravel were deposited by glacial activity.

2.1.6 Neighboring Properties

Review of neighboring properties from the Site and from public thoroughfares, and research of available information regarding the neighboring properties, were performed to identify evidence of environmental concern that could adversely impact the Site. The Site is located in a commercial and industrial area of Hicksville, New York.

Direction	Operations
North	Industrial/Commercial
South	Residential
East	Commercial
West	Window manufacturing

2.2 Site History

Roux Associates evaluated several information sources to determine historic uses of the property.

2.2.1 City Directories

Roux Associates contacted Mrs. Delouise, Reference Librarian of the Hicksville Public Library, requesting information on historical city directories for Hicksville, New York. According to Mrs. Delouise, no city directories are available for the Site in the Hicksville Public Library collection.

2.2.2 Aerial Photographs

Roux Associates obtained aerial photographs of the Site and surrounding area for the years 1953, 1966, 1974, and 1994 from EDR of Milford, Connecticut. The aerial photographs were reviewed for evidence of environmental concerns on or near the Site. The following is a discussion of the aerial photograph review:

1953: Review of the 1953 aerial photograph revealed that the Site was improved with a rectangular shaped building. This building was similar in orientation to the large subject building currently on the property; however, it was a little smaller. A small structure, similar in size, shape, and orientation to the small subject building, was located near the northeast corner of the large subject building. The remainder of the Site consisted of paved parking areas and lawn areas.

The adjacent properties to the north, beyond the Long Island Railroad tracks, were improved with several small structures. The adjacent properties to the south, beyond Duffy Avenue, were improved with a residential development. The adjacent property to the east was improved with a small rectangular structure similar in size, shape, and orientation to the one currently occupied by Verizon. The adjacent property to the west was improved with a large rectangular structure similar in size, shape, and orientation to the one currently occupied by PAL Windows.

1966: Review of the 1966 aerial photograph revealed that a small east portion of the Site is not depicted on the 1966 aerial photograph. A small rectangular addition was constructed on the west side of the large structure identified on the 1953 aerial photograph. The remaining areas of the Site consisted of paved parking areas.

Review of the 1966 aerial photograph revealed no major changes to the adjacent properties to the north, south, and west in comparison to the 1953 aerial photograph. The adjacent property to the east was not depicted on the 1966 aerial photograph.

1974: Review of the 1974 aerial photograph revealed no major changes to the Site or adjoining properties to the north, south, and west in comparison to the 1966 aerial photograph. The adjacent property to the east was not depicted on the 1966 aerial photograph.

1994: Review of the 1994 aerial photograph revealed no major changes to the Site or adjoining properties in comparison to the 1974 aerial photograph.

Review of the aerial photographs revealed that the subject buildings were constructed prior to 1953, with an addition constructed after 1953 and prior to 1966. No evidence of environmental concern on or adjacent to the Site was revealed during a review of the aerial photographs.

Copies of the aerial photographs are included in Appendix B.

2.2.3 Fire Insurance Maps

A Sanborn fire insurance map covering the Site for the year 1968 was obtained from EDR of Milford, Connecticut. The fire insurance map was reviewed for historical uses and evidence of environmental concern on or near the Site. The following is a discussion of the fire insurance map.

1968: Review of the 1968 fire insurance map revealed that the Site was improved with a large irregularly shaped one and two-story building, similar in size, shape, and orientation to the subject building currently occupying the property. The original construction date listed on the map was 1950, with an addition to the west side of the building constructed in 1960. The Site was labeled as Amperex Electronic Corporation, manufacturers of electronic equipment.

The adjacent property to the north, beyond the Long Island Railroad tracks, was depicted as being improved with several small commercial and residential structures. The adjacent property to the east was improved with a small one-story structure labeled the New York Telephone Company. The adjacent property to the west was improved with a large one-story structure occupied by the Sanita Paper Products Company (a manufacturer of paper cups, straws, etc.) and the Eagle Beef Cloth Company, Inc. (a manufacturer of textiles for meat) building.

Review of the fire insurance map revealed that the large subject building was constructed in 1950 and expanded in 1960. The fire insurance map revealed that the subject building was previously utilized for manufacturing electronic equipment. A copy of the fire insurance map is included in Appendix C.

2.3 Results of Previous Environmental Investigations

The following sections provide an overview of the history of bulk storage tanks and the results of previous environmental investigations at the Site.

2.3.1 Bulk Storage Tanks

Historically, Amperex operated ten underground and nine aboveground storage tanks at the Site. The aboveground storage tanks (AST) included:

Size (Gallons)	Contents	Location	Current Status
500	1,1,1-Trichloroethane	Northwest of building	Removed
150	Anhydrous ammonia	Unknown	Removed
4,000	Anhydrous ammonia	Northeast of building	Removed
1,000	Ammonia	Northeast structure	Removed
1,000	50 percent Liquid caustic	Chemical waste treatment area	Removed
7,000	Copper-chromium treatment tank	Chemical waste treatment area	Removed
7,000	Copper-chromium treatment tank	Chemical waste treatment area	Removed
7,000	Heavy metals treatment tank	Chemical waste treatment area	Removed
7,000	Heavy metals treatment tank	Chemical waste treatment area	Removed

The underground storage tanks (UST) included:

Size (Gallons)	Contents	Location	Current Status
15,000	Fuel Oil	Northeast of building	Removed in 1990
3,000	Isopropyl Alcohol	North of building	Abandoned in place, 1988
275	Gasoline	North of building	Removed in the 1990s
5,000	Sludge holding tank	Chemical waste treatment area	Removed in 2001
5,000	Sludge holding tank	Chemical waste treatment area	Removed in 2001
750	Effluent wet well	Chemical waste treatment area	Removed in 2001
750	Effluent wet well	Chemical waste treatment area	Removed in 2001
750	Effluent wet well	Chemical waste treatment area	Removed in 2001
3,300	Cyanide waste treatment tank	Chemical waste treatment area	Removed in 2001
3,300	Cyanide waste treatment tank	Chemical waste treatment area	Removed in 2001

2.3.2 Aboveground Storage Tank Closure

A Closure Plan for Hazardous Material Areas under NCDH – Article XI was completed by Amperex Electronics Company in December 1988. According to the Closure Plan, the ASTs that were to remain in-place were cleaned as follows:

- 1,000-gallon ammonia AST was to be cleaned by removing its contents by processing ammonia through the facility until the internal tank pressure was equal to atmospheric pressure.
- 1,000-gallon 50 percent liquid caustic AST was to be used in the wastewater treatment process until it was empty, and then the tank was to be rinsed with water.
- The two 7,000-gallon copper-chromium treatment ASTs and two 7,000-gallon heavy metals treatment tanks were to be emptied, cleaned with high-pressure steam, and rinsed with water.

A previous Phase I Environmental Site Assessment by Roux Associates in 2000 stated that no documentation was found to confirm that these aboveground storage tanks were cleaned according to the Amperex Closure Plan. Environmental Resources Management (ERM) did an investigation on the closure of the ASTs that stated that all of the ASTs had been removed from the property.

2.3.3 Underground Storage Tank Closure

A 15,000-gallon No. 2 fuel oil tank was removed from the Site in 1990 under the supervision of the Nassau County Department of Health (NCDH). Fuel oil impacted soil was observed by the NCDH in soil between the tank excavation and the building. Since it was not possible to remove all the contamination, Amperex was required by the NYSDEC to install groundwater monitoring wells at that time to determine the extent of the groundwater contamination.

In January 1997, a Work Plan for Underground Storage Tank Closure Investigation was completed for Philips Components by Fluor Daniel GTI. The purpose of the Work Plan was to provide guidance for the investigation of potential residual soil and groundwater impacts that may remain in the vicinity of the former 15,000-gallon fuel oil UST. An Underground Storage Tank Closure Investigation was completed by Fluor Daniel GTI on March 26, 1997. Results of that investigation showed that VOCs were found below applicable NYSDEC guidance values, and that SVOCs were detected in concentrations of 140 to 310 ppb in shallow samples but none in deeper samples. On April 7, 1997, the NYSDEC reviewed the UST investigation and concluded "we have no further requirements for this spill at this time."

The 275-gallon gasoline UST was removed in the 1990s and the 3,000-gallon isopropyl alcohol UST was abandoned in place. Documentation regarding these UST closures was not available to Roux Associates.

The remainder of the USTs were from the former Wastewater Treatment Plant. In 2001, ERM completed a tank investigation to determine if the tanks were cleaned properly as stated in their closure plan. The investigation included seven underground storage tanks (concrete vaults with manholes cover access) from the former wastewater treatment plant located on the north side of the building. Four discrete water samples were taken from four of the tanks and one composite sample was taken from the remaining three. The samples were analyzed for Volatile Organic Compounds (VOCs), Semivolatile Organic Compounds, Metals, and Polychlorinated Biphenyls (PCBs).

Analytical results indicated that minor levels of VOCs contamination were found. After the investigation was completed, each tank was pumped, cleaned, and examined. Upon examination by ERM, the structural integrity of each tank was found to be sound and no deterioration was found that could have led to migration into the environment. ERM's report states that the area of the tanks was graded and backfilled with crushed stone and capped with paving material.

2.3.4 Hazardous Waste Storage Area Closure

A letter from O'Brien and Gere Engineers, Inc. dated September 20, 1990 details the closure activities performed for the hazardous waste storage area. The Facility Closure Plan was prepared by Amperex Electronic Corporation and approved by the NYSDEC. O'Brien and Gere inspected the activities pertaining to the closure of the hazardous waste storage area. The area consisted of a metal building on a concrete slab and was located in the northeast corner of the property. All containers were reportedly removed by Amperex prior to any closure activities conducted by OBG Technical Services. In accordance with the Closure Plan, the floors, walls and ceilings of the building were dry vacuumed and then cleaned with a high pressure, low volume steam cleaning process. The rinsate was sampled and analyzed, results showed exceedances in total hydrocarbons (57,000 micrograms per liter). The building was dismantled and taken to a local landfill for disposal, while the concrete slab was broken up and sampled for metals before being brought to a landfill for disposal. Soil below the foundation was excavated to a depth of approximately five feet and sampled for VOCs and metals. The excavated soil was disposed of by Waste Conversion, Inc. at a facility in South Carolina. The area was backfilled with soil and covered with asphalt.

2.3.5 Groundwater

Clean Harbors Environmental Engineering Corporation (CHEE) completed a sampling program on June 13 and 14, 1990 which included collecting groundwater samples from six existing groundwater observation wells at the site (OW-2 to OW-7); two existing groundwater observation wells along Duffy Avenue south of the site (MW-1 and MW-2); and three newly installed groundwater observation wells (OW-1A, OW-9 and OW-10) at the site. The sampling program was conducted to evaluate groundwater conditions in the vicinity of the observation wells. The location of the observation wells is shown on Plate 1. The groundwater samples were collected with a pre-cleaned bailer and properly preserved and transported to Clean Harbors

Analytical Services, Inc., (CHAS) of Bedford, Massachusetts for laboratory analysis. The testing parameters included VOCs (USEPA Method 624). The results are presented in Table 1 and were summarized as follows:

- Groundwater samples from wells OW-1A and OW-9 had no VOCs detected above the minimum detection limits (MDLs).
- The groundwater sample from well OW-2 had an increased amount of 1,1-Trichloroethane (TCA) (19 parts per billion [ppb]), a decrease in the level of trans, 1,2-dichloroethene (not detected above the MDL) and similar concentrations of trichloroethylene (TCE) (60 ppb) and 1,1-dichloroethane (DCA [19 ppb]) compared to previous sampling rounds.
- The groundwater sample from well OW-3 had a similar concentration of Tetrachlorethene (PCE) (12 ppb) compared to previous sampling rounds.
- The groundwater sample from well OW-4 contained a trace amount of TCE and 90 ppb of Methyl-tert-butyl-ether; no VOCs were detected in previous sampling rounds.
- The groundwater sample from well OW-5 had increased amounts of TCA (12 ppb) and DCA (8 ppb), a decrease in the level of trans,-1,2-dichloroethene (not detected above the MDL) and similar concentrations of TCE (35 ppb) and PCE (130 ppb) compared to previous sampling rounds.
- The groundwater sample from well OW-6 had similar concentrations of TCE (39 ppb) and TCA (trace) compared to previous sampling rounds.
- The groundwater sample from well OW-7 had a decrease in the level of PCE (13 ppb) compared to previous sampling rounds.
- The groundwater sample from well OW-10 contained 31 ppb of TCA.
- The groundwater sample from well MW-1 had increased amounts of TCA (230 ppb), DCA (91 ppb) and TCE (58 ppb), a decrease in the level of trans-1,2-dichloroethene (not detected above the MDL) and a similar concentration of PCE (180 ppb) compared to previous sampling rounds.
- The groundwater sample from well MW-2 had an increased amount of TCA (6 ppb), and a decrease in the level of PCE (trace) compared to previous sampling rounds.

The results indicate that the site groundwater had minor levels of VOCs, primarily chlorinated solvents, as of 1990. The groundwater in the eastern portion of the site generally contained detectable concentrations of PCE, TCE, and TCA. The groundwater in the central portion of the site primarily contained detectable levels of TCE and TCA. DCA was detected in samples across

the site. The sample with the highest concentration of total VOCs, PCE, TCE, TCA, and DCA was from well MW-1 (559 ppb, 180 ppb, 58 ppb, 230 ppb, and 91 ppb respectively).

Two families of chlorinated hydrocarbons exist at the site, PCE and its natural degradation products and TCA and its natural degradation products. Natural degradation of these compounds occurs through microbial metabolism of the compounds. TCE is a degradation product of PCE and DCA is a degradation product of TCA.

In 2001, based on the above information, ERM conducted an investigation of the groundwater at the Site to determine the concentrations of the above compounds. A historic site map, from the CHEE report, was utilized to evaluate the condition of the wells on-site. Historic site information indicated that a total of twelve wells existed at the site (OW-1 through OW-10, MW-1 and MW-2).

Inspection of the on-site wells indicated that six wells existed on-site. Five of the wells OW-1, OW-5, OW-7, OW-9 and OW-10 were found as indicated on historic maps and in good condition. One well was found on the north side of the building in an area where no wells were indicated on available maps. This well was identified as OW-11 for sampling purposes. The remaining wells, OW-2, OW-3, OW-4, OW-6, OW-8, MW-1 and MW-2, were not found.

Following location of the existing site wells, each was assessed to determine whether valid information could realistically be collected from the well. The surface condition of the well was noted to determine whether the protective steel casing was intact and securely cemented in place. The condition of the surface cement seal was checked with particular attention given to noting any cracks or voids that could facilitate infiltration of surface water into the borehole annulus. The interior or each well was inspected visually to determine if the polyvinyl chloride (PVC) casing was intact and in good condition. The depths to groundwater and well bottom were measured to assess whether any build up of silt was present.

After inspection, the existing wells were developed to establish adequate hydraulic connection with the surrounding soil. Redevelopment was conducted by surging and pumping liquid/solids from the well. The field geologist determined the extent of any required redevelopment. A set of

field measured parameters was used to determine completion. A development goal was to achieve a discharge turbidity of 50 nephelometric turbidity units (NTUs) or less. Stabilization (±20 percent in four successive measurements) of well discharge turbidity, temperature, and specific conductance measurements were used as the completion criteria for this task.

ERM installed an additional well (OW-12) on the southeast corner of the property as a replacement well for wells MW-1 and MW-2 that had previously shown concentrations of VOCS and could not be located due to repaving of the area. The well was installed closest to the previous location of MW-1, which had historically shown the highest contaminate levels. The well was installed on March 23, 2001 by Talon Drilling of Trenton, New Jersey. The installation of the well was overseen by ERM. The well was installed to a depth of 69 feet below grade and constructed of 2-inch PVC. A ten-foot section of 10-slot screen was installed at the bottom of the well and backfilled with grade 2 sandpack. After installation of the well, the drilling company developed the well using a pump to less than 50 NTUs.

Two groundwater sampling events occurred at the site during 2001. The two sampling events included sampling of the six existing wells (OW-1, OW-5, OW-7, OW-9, OW-10, and OW-11) on January 9, 2001 and the new well OW-12 on April 23, 2001. A new well, OW-12, was installed to replace wells MW-1 and MW-2 which no longer existed at the site. All samples were analyzed for VOCs by NYSDEC ASP CLP Method 95-1 and for semivolatile organic compounds (SVOCs) by NYSDEC ASP CLP Method 95-2.

The results of the two sampling rounds conducted in 2001 indicate that all wells except OW-11 contain one or more VOCs above Technical and Operational Guidance Series (TOGS) 1.1.1 criteria. Tables 2 and 3 present the groundwater analytical results which are also shown on Plate 2. PCE was detected in wells OW-5, OW-7, OW-10 and OW-12 above criteria. TCE was detected in wells OW-1 and OW-9 above criteria. 1,1,1-Trichloroethane was detected above criteria in wells OW-10 and OW-12. 1,2-Dichloroethane was detected above criteria in OW-12 only. In addition, Benzo (b) fluoranthene and Bis (2-ethylexyl) phthalate were detected above criteria in wells OW-9 and OW-12 respectively.

2.3.6 Summary of Previous Environmental Sampling

The evaluation of this property is focused on historical industrial operations, which ceased over fifteen years ago. The Site has not been utilized for industrial operations since the late 1980s. Moreover, as documented in several reports, soil and groundwater sampling has been carried out several times at the property between the late 1980s and the present. In general, the historical data either demonstrates that the issues have been sufficiently addressed, as is the case with the tankage and storage areas at the property, or that the levels of constituents that are present would not be considered unusual or unexpected.

It appears that any potential contamination, which may have occurred at the Site, is historic in nature and that source control is not an issue at this time. Historic and recent groundwater sampling results at the Site have shown either a gradual decrease in the concentrations of contaminants since 1988 or a consistent level (see Tables 1, 2, and 3). The monitoring well with the highest volume levels, OW-5 at 185 ppb total VOCs, decreased to 20 ppb between 1990 and 2001.

Summary of GW Data for 1990 and 2001

CAS No.	Compound	TOGS (µg/L)	OW-1 2001	OW-1 1990	OW-5 2001	OW-5 1990
79-01-06	Trichloroethene	5	5J	ND	ND	35
127-18-04	Tetrachloroethene	5	2J	ND	20	130
71-55-6	1,1,1-Trichloroethene	5	2J	ND	20	130
75-34-3	1,1-Dichlorethane	5	ND	--	ND	8

CAS No.	Compound	TOGS (µg/L)	OW-7 2001	OW-7 1990	OW-9 2001	OW-9 1990
79-01-06	Trichloroethene	5	ND	ND	16	ND
127-18-4	Tetrachloroethene	5	8J	13	ND	ND

CAS No.	Compound	TOGS (µg/L)	OW-10 2001	OW-10 1990	OW-11 2001	OW-12 2001
71-55-10	1,1,1-Trichloroethene	5	ND	31	ND	2J

2.4 Data Usability

Previous groundwater analytical data developed by ERM were evaluated by Roux Associates for data usability purposes during the RI. The purpose (data use) of the groundwater quality data was to:

1) Provide analytical data of sufficient quality to characterize the groundwater; and
2) Provide "screening level" quality data to guide/support future RI sampling efforts.

Data were reviewed for laboratory precision, accuracy, and completeness in accordance with the Test Methods for Evaluating Solid Waste (SW-846) and the New York State Department of Environmental Conservation (NYSDEC) Analytical Services Protocol (ASP).

The laboratory data package deliverables were not, and were not intended to be, in accordance with NYSDEC ASP Category B deliverables. Therefore, the data generated by ERM should be considered qualitative and used only as "screening level" quality data to guide/support future RI sampling efforts.

3.0 RI WORK PLAN OBJECTIVES, SCOPE AND RATIONALE

3.1 Objectives and Relationship to RAWP

The objective of the RI is to determine the nature and extent of contamination at the Site, characterize environmental media at the Site, qualitatively assess the potential exposure of receptors to Site contaminants, and develop any other additional data necessary to support the development of a RAWP.

3.2 RI Scope

The scope of the RI will entail the collection of supplemental site characterization data so that, together with the historic data including groundwater sampling, the entire Site will be sufficiently characterized to support the development of the site-wide RAWP. To accomplish this, the RI will focus on the following:

- The collection of site characterization data for potential impacted areas;
- The collection of groundwater data for the entire Site;
- The performance of a soil vapor study for the Site; and
- The performance of a qualitative exposure assessment to identify exposure pathways, and evaluate contaminant fate and transport.

The scope of each component of the RI is discussed in the following subsections. Detailed field sampling procedures are provided in the FSP, Appendix D.

3.2.1 Soil Characterization At Potential Impact Areas

Forty-one borings will be drilled at locations shown in Figure 2. Soil samples will be collected using a Geoprobe. Sample locations have been biased towards areas of known or suspected industrial activity and/or former structures. Geoprobe samples will be collected continuously using either a four foot or five foot macro core sampler. Based on recent Site inspections, the outfall pit structures no longer exist or are no longer visible at the ground surface. During drilling activities, the soil boring logs will be used to determine the location and depth of the structures. Soil samples will be taken from material immediately below the bottom of the structures, and from 10 feet below the bottom of the structures. However, the sampling will be completed to allow for multiple depth collection. The areas of potential impact along with the

sampling scheme can be found on Table 4. During installation of the soil borings, the lithology will be recorded and soil will be field screened for VOCs using a PID, every two-feet.

All samples will be analyzed for the following parameters.

- Target Compound List plus 30/ Target Analyte (TCL + 30/TAL) (which includes TCL VOA + ID TICS, TCL BNA, (SVOCs) + 20, TCL Pesticides, TCL PCBs, TAL Metals, and Total Cyanide)
- Total Petroleum Hydrocarbons (TPH)
- Toxicity Characteristic Leaching Procedure (TCLP) for metals

In addition, some samples will be analyzed for metals using the Toxicity Characteristic Leaching Procedure (TCLP) method. Split samples will be collected and held at the laboratory for possible future analyses, based upon the results of the above mentioned sampling. The locations of these samples will be determined in the field.

Additional sample locations will be selected for the following:

- The results of a geophysical survey, which will be completed along the north and east sides of the building to identify potential dry wells, piping, or buried structures.
- Any additional drainage structures identified within the building.

The NYSDEC will be provided with 14 days advance notice of this potential additional sampling.

3.2.2 Soil Vapor Sampling

Locations for soil vapor sampling (Figure 2) will be biased toward the identified potential impact areas and areas within the building. All sampling will be completed following the NYSDOH "Guidance for Evaluation Soil Vapor Intrusion in New York State", dated October 2006. As shown in Figure 2, a total of sixteen sampling locations are proposed, ten from areas around the outside of the building and six from below the floor slab. An additional four (4) sample points will be selected along the south side of the building based on utility mark outs. Soil vapor samples will be collected from areas outside of the building from borings installed using a Geoprobe or manually driven method, to the target depth of five feet. Once the target depth is achieved the rods will be pulled up 2 feet, exposing a void space. New Teflon lined tubing

equipped with a threaded stainless steel fitting will be attached to the expendable soil vapor sampling point, to prevent infiltration of ambient air. The soil vapor samples will be collected using pre-cleaned six liter summa canisters with regulators calibrated to collect samples for an eight hour period. The boreholes will be allowed to collapse after the rods are removed and areas of asphalt/concrete will be properly patched. In addition, two outdoor ambient air samples will be collected. Subslab, indoor ambient and outdoor ambient air samples will be collected concurrently, over an eight-hour period during the heating season.

Prior to the collection of samples from within the building, a pre-sampling inspection will be performed to identify and minimize conditions that may interfere with the proposed testing. This inspection will seek to evaluate the type of structure, floor layout, air flows, physical conditions, and any other pertinent information. Additional details regarding the pre-sampling inspection are included in the FSP. Sample locations for sub-slab soil vapor samples have been selected based on areas of known or suspected industrial activities. Sub-slab vapor samples will be collected directly below the slab, by penetrating the floor slab using a hammer drill to create a 1-inch diameter hole in the concrete down to 6–inches below the slab. The sample tubing will be placed through this hole and will be held in place and sealed with a clay seal. The penetrations through the floor will be sealed immediately after completion using a non-shrink cement/bentonite grout. In addition, two indoor air samples will be collected using eight-hour sample periods.

All soil vapor samples sub slab vapor samples, and ambient samples will be analyzed using USEPA Method TO-15 for VOCs. Additional details regarding sampling methods are provided in the Field Sampling Plan (FSP) (Appendix D).

3.2.3 Groundwater Investigation

To characterize groundwater flow and quality conditions, the existing network of monitoring wells will be gauged and sampled.

Prior to sampling, the depth to water in each well will be measured from an established measuring point. After measuring the depth to water, the well will be purged prior to sampling to ensure that a representative sample is collected. Field parameters will be collected during

purging. Detailed procedures regarding well sampling can found in the FSP (Appendix D). All monitoring wells will be resurveyed to obtain horizontal and vertical survey coordinates. One round of water levels will be measured to provide groundwater elevation data, used to determine groundwater flow direction beneath the Site.

Groundwater samples collected from monitoring wells will be analyzed for:

- TCL VOA + ID TICS
- TAL Metals (both total and dissolved)

In addition to the groundwater samples collected from monitoring wells, groundwater samples will be collected from 8 borings installed in the locations shown on Figure-2. These samples will be collected from the top of the water table down into the aquifer using a Geoprobe^{TM} 2 foot expandable stainless steel screen. The screen is not exposed until the target depth is achieved in order to obtain a representative sample from the desired depth interval. Samples will be collected from two feet below the water table and from 15 feet below the water table, and analyzed for the same parameters as groundwater samples collected from the monitoring wells. These samples will be collected to delineate the vertical extent of contamination at the south property boundary and near former structures.

3.2.4 Qualitative Exposure Assessment

A qualitative exposure assessment (EA) will be performed following the collection of all RI data. The EA will be performed in accordance with the New York State Department of Health (NYSDOH) guidance for performing a qualitative EA (NYSDEC Draft DER-10; Technical Guidance for Site Investigation and Remediation; Appendix 3 B). As stipulated in the NYSDOH guidance, the qualitative EA will consist of "*characterizing the exposure setting (including the physical environment and potentially exposed human populations), identifying exposure pathways, and evaluating contaminant fate and transport*." The results of the qualitative EA will be provided in the RI report.

4.0 QUALITY ASSURANCE/ QUALITY CONTROL (QA/QC) PROTOCOLS

The goal of the QA/QC aspect of the RI is to ensure that suitable and verifiable data results from sampling and analysis performed. To accomplish this, a Quality Assurance Project Plan (QAPP) has been prepared and is provided as Appendix E.

5.0 HEALTH & SAFETY

A site-specific Health and Safety (H&S) Plan has been prepared for the Site and is provided in Appendix F.

6.0 REPORTING AND SCHEDULE

The following will be provided to the NYSDEC during the course of the RI work.

Progress Reports

Progress report submittals to be provided to the NYSDEC include the following.

1) Periodic reports, no less than one per month, will be required during RI activities.

2) Identification of any previously unknown contaminated media identified during RI activities will be promptly communicated to NYSDEC's project manager.

3) A Site map will be provided to identify locations discussed in progress reports provided to NYSDEC.

Remedial Action Work Plan (RAWP) and RI Summary Report

Following the completion of the RI, a RAWP will be prepared to address any remaining contamination at the Site. This RAWP will include the results of the RI for the Site. The RI section of the RAWP will include all data developed during the RI, and will meet the technical requirements of NYSDEC's Draft DER 10; Technical Guidance for Site Investigation and Remediation and the BCP Guide.

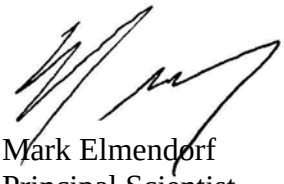
Schedule

The field portion of the RI is expected to be completed in eight weeks from when approval is granted by the NYSDEC. If approved by NYSDEC, the soil vapor sampling portion of the RI may be completed separate from the other work, to facilitate sampling with minimal impact to building tenants.

A 14-day notification will be provided to the NYSDEC prior to any field work. A draft schedule will be submitted within 14 days of BCP approval.

Respectfully submitted,

ROUX ASSOCIATES, INC.



Mark Elmendorf
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