

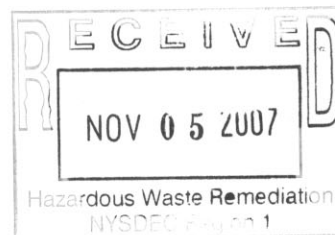
ROUX ASSOCIATES INC



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October 19, 2007

Mr. Jamie Ascher
Engineering Geologist 2
New York State Department of Environmental Conservation
Division of Environmental Remediation
Region One - Building 40 - SUNY
Stony Brook, New York 11790-2356



Re: Former Thyphin Steel, Inc. Plant
Groundwater Contamination Summary Report
Manorhaven, New York

Dear Mr. Ascher:

Roux Associates, Inc. (Roux Associates) and Remedial Engineering, P.C. (Remedial Engineering), on behalf of MBA-Manorhaven, have conducted investigation and remedial activities at the former Thyphin Steel Facility in Manorhaven, New York (Site) since 1999. Roux Associates recently performed preliminary Membrane Interface Probe (MIP) and confirmatory sampling activities at the Site. This report summarizes the results of these activities, as well as historic investigation and remedial activities completed at the Site and the current understanding of the groundwater conditions beneath the Site.

The recent investigation activities utilized qualitative and quantitative methods to further define the groundwater contamination present beneath the Site, and identify potential source areas, if any, were present. Although dissolved groundwater contamination was documented, a conventional source area (i.e., contaminated soil or discharge structure) was not identified during the investigation activities. However, it was observed that elevated concentrations of dissolved concentrations are present in isolated locations of the formation trapped as pore fluid, predominantly below 20 feet below land surface (ft bls). The results of the most recent investigation activities, as well as a summary of historical findings, are presented below.

Remedial Investigation Activities - 1999 - 2001

Following initial site assessment activities conducted by other environmental firms, Roux Associates completed preliminary soil and groundwater sampling activities during 1999 and 2000. Roux Associates confirmed that dissolved chlorinated volatile organic compound (CVOC) groundwater contamination was present beneath the Site. Following the initial investigation activities, a remedial investigation was completed in 2001. The

results of the investigation were submitted to the New York State Department of Environmental Conservation (NYSDEC) in Roux Associates' November 16, 2001 *Site Investigation Results Report*. The remedial investigation consisted of geophysics, excavating numerous trenches and test pits, soil, groundwater, and soil gas sampling activities. Following a thorough investigation throughout the entire site, no source areas for groundwater contamination were identified.

During the investigation, the subsurface beneath the Site was observed to be fairly uniform, fine to coarse sand. The sand strata becomes increasingly finer-grained below 20 ft bls. Between 20 and 30 ft bls, the sand strata is medium to fine-grained, becoming relatively tight below 30 ft bls. The aquifer extends to a maximum depth of approximately 60 ft bls. Below this sand strata is a confining unit composed of silt and clay. Depth to groundwater beneath the Site is approximately 10 ft bls. Groundwater flows in a southerly direction, with only minor tidal influence (i.e., less than 0.2 feet fluctuation) detected within monitoring wells located along the eastern portion of the Site, adjacent to Manhasset Bay. The three vertical groundwater zones identified underlying the Site are identified as shallow, intermediate, and deep aquifers. The shallow aquifer monitoring wells are typically screened from 8 to 18 ft bls and, based on geologic observations mentioned above, the shallow aquifer extends to 20 ft bls. The intermediate aquifer monitoring wells are screened from 30 to 50 ft bls; however, based upon geologic observations and analytical data, the interval between 20 and 60 ft bls is considered part of the intermediate aquifer. The deep aquifer is present beneath the silt/clay confining unit and monitoring wells within this zone are typically screened from 105 to 125 ft bls.

During the remedial investigation, groundwater grab samples were collected from temporary points via Geoprobe and hydropunch sampling techniques, and a monitoring well network was installed and sampled to evaluate groundwater conditions. Dissolved CVOC contamination was detected beneath the central and southern portion of the Site, within the shallow and intermediate aquifers. There was no contamination detected within the deep aquifer. Within the shallow aquifer, relatively low concentrations of COVCs were detected, typically ranging from non-detect to less than 100 parts per billion (ppb). Within the intermediate aquifer, a wide range of CVOC concentrations were observed from non-detect to a maximum of 5,500 ppb; however, no source areas were identified.

Remediation Activities – 2001 - 2006

To address the shallow groundwater contamination in the vicinity of MW-33S and MW-31S, an air sparge/soil vapor extraction (AS/SVE) system was installed in July 2003 and began operation in August 2003. The AS/SVE system was operated until August 2004. During this approximate eight-month operational period, the AS/SVE system was effective at reducing CVOC concentrations in monitoring wells MW-31S and MW-33S to the NYSDEC groundwater standards. As a result, the AS/SVE system was temporarily shutdown. The AS/SVE system was re-started in July 2005 as part of

additional onsite investigation activities consisting of the collection of groundwater samples from existing monitoring wells and temporary points. The purpose of the additional onsite investigation was to evaluate the performance of the existing AS/SVE system and to determine if additional areas required remediation in the shallow aquifer. Following the collection of these additional groundwater samples it was determined that the AS/SVE system would be expanded to address the MW-35S area and other adjacent areas of impact to enhance the overall effectiveness of the AS/SVE system. The expanded AS/SVE system was started in December 2005, and system performance groundwater sampling activities were completed in May, July, and October of 2006. The groundwater sampling activities conducted in October 2006 included the sampling of select air sparge points, in addition to monitoring wells, to provide further groundwater quality data.

Contaminant concentrations from one of the largest areas (MW-33S) have remained low and at or near NYSDEC standards. Contaminant concentrations in groundwater collected from the other two target areas (i.e., MW-31S and MW-35S) have shown a decreasing trend during operation of the AS/SVE system but rebounded (i.e., increase to levels above the NYSDEC groundwater standard) during temporary shutdown periods, suggesting that the AS/SVE system is approaching its limit of technological effectiveness. Based upon the evaluation of historic and the 2006 sampling results, it was hypothesized that a previously undetected source area maybe present in the vicinity of these three areas. It was believed that one possible source would be CVOCs that are sorbed on to finer-grained formations within the subsurface. If contamination was present in higher concentrations, sorbed to the soil, it would provide a source for the dissolved groundwater concentrations. The presence of a source area would have explained the rebounding of the CVOC concentrations that has been observed within the groundwater samples collected from monitoring wells located adjacent to the existing AS/SVE system. As discussed below, additional investigation activities were performed, but no source area was identified.

Recent Qualitative and Quantitative Investigation Activities - 2007

To define the horizontal and vertical extent of the speculated source areas, a new qualitative screening technology was proposed that has the capability to define the heterogeneity within the geologic formations and, simultaneously, identify the relative magnitude of contamination present within these formations in real time. The proposed screening technology included the use of a membrane interface probe (MIP) in conjunction with an electrical conductivity probe (ECP).

Following the NYSDEC's approval of Roux Associates' February 27, 2007 *OU-1 Membrane Interface Probe Investigation Scope of Work*, the MIP investigation was completed from April 23 to April 26, 2007 and consisted of the completion of 16 MIP borings upgradient and adjacent to the AS/SVE system, to an average depth of 30 ft bls. The locations of the MIP borings are shown on Figure 1.

The qualitative results of the MIP investigation indicated the presence of two areas where elevated concentrations of VOCs are present, in the vicinity of MIP borings MP-9 and MP-15. At each of these locations, the highest concentrations of VOCs were identified in the intermediate aquifer (i.e., 20 and 24 ft bls, respectively). At only one of these locations, MP-9, elevated concentrations of VOCs were also identified within the shallow aquifer at a depth interval of 15-20 ft bls. MIP borings completed upgradient of MP-9 and MP-15 exhibited relatively low VOC results, and MIP borings that were completed downgradient exhibited progressively lower and deeper VOC results with distance. It was hypothesized that if contamination were present in higher concentrations and sorbed to the soil in these two areas, it would provide a source for the diminishing dissolved groundwater concentrations detected downgradient.

To confirm the qualitative screening results produced by the MIP investigation with quantitative analytical data, and to further define the geologic conditions beneath the Site, Roux Associates prepared the *Confirmatory Investigation Scope of Work* dated June 29, 2007, which was also approved by the NYSDEC. During the confirmatory investigation, soil and groundwater samples were collected at various depths at eight previous MIP boring locations, including MP-1, MP-4, MP-9, MP-11, MP-14, and MP-15. Two additional soil borings were completed within the two suspected source areas, in the vicinity of MIP borings MP-9 and MP-15, and these were identified as MP-9B and MP-15B, respectively. A summary of the analytical results is shown in Table 1. Analytical results of the soil samples indicated that, at half of the sampling locations, no VOCs were detected and, where detected, the VOC concentrations were low. The highest concentration of VOCs in the soil samples was observed in MP-9B and collected at 20 ft bls, with trichloroethylene (TCE) detected at only 46 ppb. Contrary to what we expected, the data again indicated that no soil source areas are present.

The qualitative MIP returns matched comparatively well with the quantitative groundwater data. The intervals where low MIP returns were observed corresponded with dissolved groundwater concentrations ranging from non-detect to less than 10 ppb. It was observed that the moderate MIP returns corresponded to groundwater concentrations ranging from 30 ppb to 150 ppb, while depth intervals where MIP returns exceeded the calibration range (i.e., off-scale returns) corresponded to the highest analytical groundwater results, ranging from 700 ppb to 4,200 ppb. These analytical results also matched well with historic groundwater data collected in these areas.

The results of all but one (MP-4) of the recent shallow groundwater samples indicated that CVOCs were either not detected or detected at relatively low concentrations (i.e., less than 10 ppb). This is consistent with the MIP returns, which showed that only relatively low concentrations or no detections of CVOCs were present at the water-table. This is also consistent with recent groundwater data from monitoring wells, which indicates that elevated CVOC concentrations are only present at in the shallow aquifer at one isolated location, MW-35S, located adjacent to MP-4. Groundwater samples collected at deeper intervals indicated that the intermediate groundwater (i.e., 20-50 ft

bls) contains elevated concentrations of CVOCs. The highest contaminant concentration was observed in the groundwater sample collected at MP-9B at 20 ft bls, with a TCE concentration of 4,200 ppb.

As has been observed during past groundwater investigations and sampling events, irregular results were also detected. Groundwater samples were collected at MP-9, MP-9B, and MP-1 at 20 ft bls, with TCE concentrations of 11 ppb, 4,200 ppb, and 830 ppb, respectively. These three sampling points were located in a roughly linear pattern, less than 15 feet apart from each other. The recent and historical highly variable nature (both vertically and horizontally) of the CVOc concentrations indicate that, in addition to the conventional dissolved groundwater contamination, disproportionately high concentrations of VOCs are trapped as pore fluid in isolated portions of the formation. It is possible that this pore fluid acts as a source area for the conventional dissolved groundwater plume and also results in the occasional anomalously high groundwater concentrations that have been observed during historic sampling events. Most likely due to subtle differences in the formation, the pore fluid became stagnant and remained at relatively high concentrations within localized portions of the formation. This pore fluid contains dissolved groundwater contamination that is most likely similar in concentrations with what existed following the historical undocumented releases to the subsurface. These pore fluid areas were observed to be located upgradient of the dissolved plume and in the vicinity of historical operations.

There was only a relatively small area within the shallow aquifer where pore fluid was identified, located in the vicinity of MP-9. The pore fluid area identified within the intermediate aquifer is larger, located within the vicinity of MP-9 and MP-15, and has not been fully delineated. The dissolved impacts within the shallow aquifer are isolated and minimal, with increasingly higher concentrations observed within the intermediate intervals, including the dissolved plume extending downgradient, to the south.

Summary of Findings

The analytical sampling activities confirmed that the qualitative MIP screening technology is capable of identifying groundwater contamination and differentiating between high and low dissolved CVOc concentrations. It also clearly shows that no soil contamination source area is present beneath the Site, but rather stagnant contaminated pore fluid is present within isolated portions of the formation.

Based on the latest groundwater sampling results, the sand strata within the upper intermediate aquifer found at 20 to 30 ft bls is not naturally amendable to supporting degradation (i.e., high dissolved oxygen, low amounts of carbon) as evidenced by the continued detection of the parent compounds (i.e., TCE) with minor detections of the degradation products (e.g., 1,2-dichloroethene). Although the sandy soil in the shallow aquifer has been amenable to AS/SVE, the groundwater concentrations have reached asymptotic levels, suggesting that the continued operation of the AS/SVE system will no longer be as effective as during the initial operational phase. Therefore, an alternative

Mr. Jamie Ascher
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technology (e.g., *in situ* chemical oxidation) may be appropriate to aggressively oxidize the CVOCs in the pore fluid in selected locations in the shallow aquifer (less than 20 ft bls) and in the 20 to 30 ft bls zone. As the use of the chemical oxidant would preclude the need for the AS/SVE system, existing air sparge points would likely be utilized for injections subsequently leading to the permanent shutdown of the AS/SVE system. The application of the chemical oxidant as a final polishing step for the shallow aquifer and also as an alternative approach to enhanced reductive dechlorination (ERD) for the intermediate aquifer, as originally proposed in Roux Associates' *Remedial Action Work Plan*, will be further evaluated following completion of the additional MIP delineation activities proposed. Accompanying this document, Roux Associates has submitted a *Supplemental MIP Investigation Workplan* that is designed to further delineate the dissolved groundwater contamination within the shallow and intermediate aquifer and to obtain additional data for evaluating remedial alternatives.

If you have any questions or need additional information, please do not hesitate to contact the undersigned at 631-232-2600.

Sincerely,

ROUX ASSOCIATES, INC.



Christopher Proce
Project Hydrogeologist/
Project Manager



Joseph D. Duminuco
Principal Hydrogeologist/
Vice President

cc: Richard Thypin, MBA-Manorhaven LLC
Andrew Giaccia, Chadbourne & Parke LLP
Charles J. McGuckin, P.E., Remedial Engineering, P.C.

Table 1. Summary of Volatile Organic Compounds in Soil, Former Thyphin Steel, Inc., Manorhaven, New York

Parameter (Concentrations in ug/kg)	Designation: Sample Date: Sample Depth (ft bls):	MP-1 8/1/2007 17	MP-4 8/6/2007 23	MP-4 8/6/2007 26	MP-4 8/6/2007 29	MP-9 8/2/2007 16	MP-9 8/2/2007 22
1,1,1-Trichloroethane		6.5 U	6 U	6.2 U	6.2 U	6.1 U	6.1 U
1,1,2,2-Tetrachloroethane		6.5 U	6 U	6.2 U	6.2 U	6.1 U	6.1 U
1,1,2-Trichloroethane		6.5 U	6 U	6.2 U	6.2 U	6.1 U	6.1 U
1,1-Dichloroethane		6.5 U	6 U	6.2 U	6.2 U	6.1 U	6.1 U
1,1-Dichloroethene		6.5 U	6 U	6.2 U	6.2 U	6.1 U	6.1 U
1,2-Dichloroethane		6.5 U	6 U	6.2 U	6.2 U	6.1 U	6.1 U
1,2-Dichloropropane		6.5 U	6 U	6.2 U	6.2 U	6.1 U	6.1 U
2-Butanone		13 U	12 U	12 U	12 U	12 U	12 U
2-Hexanone		13 U	12 U	12 U	12 U	12 U	12 U
4-Methyl-2-pentanone		6.5 U	6 U	6.2 U	6.2 U	6.1 U	6.1 U
Acetone		7.2 J	17 J	21 J	13 J	24 U	24 U
Benzene		6.5 U	6 U	6.2 U	6.2 U	6.1 U	6.1 U
Bromodichloromethane		6.5 U	6 U	6.2 U	6.2 U	6.1 U	6.1 U
Bromoform		6.5 U	6 U	6.2 U	6.2 U	6.1 U	6.1 U
Bromomethane		6.5 U	6 U	6.2 U	6.2 U	6.1 U	6.1 U
Carbon disulfide		0.93 J	6 U	6.2 U	6.2 U	6.1 U	6.1 U
Carbon tetrachloride		6.5 U	6 U	6.2 U	6.2 U	6.1 U	6.1 U
Chlorobenzene		6.5 U	6 U	6.2 U	6.2 U	6.1 U	6.1 U
Chloroethane		6.5 U	6 U	6.2 U	6.2 U	6.1 U	6.1 U
Chloroform		6.5 U	6 U	6.2 U	6.2 U	6.1 U	6.1 U
Chloromethane		6.5 U	6 U	6.2 U	6.2 U	6.1 U	6.1 U
cis-1,2-Dichloroethene		6.5 U	6 U	6.2 U	6.2 U	6.1 U	6.1 U
cis-1,3-Dichloropropene		6.5 U	6 U	6.2 U	6.2 U	6.1 U	6.1 U
Dibromochloromethane		6.5 U	6 U	6.2 U	6.2 U	6.1 U	6.1 U
Ethylbenzene		6.5 U	6 U	6.2 U	6.2 U	6.1 U	6.1 U
Methylene chloride		5.3 JB	7.4 J*B	8 J*B	7.1 J*B	4.1 JB	6.3 JB
Styrene		6.5 U	6 U	6.2 U	6.2 U	6.1 U	6.1 U
Tetrachloroethene		6.5 U	6 U	6.2 U	6.2 U	6.1 U	6.1 U
Toluene		6.5 U	6 U	6.2 U	6.2 U	6.1 U	6.1 U
trans-1,2-Dichloroethene		6.5 U	6 U	6.2 U	6.2 U	6.1 U	6.1 U
trans-1,3-Dichloropropene		6.5 U	6 U	6.2 U	6.2 U	6.1 U	6.1 U
Trichloroethene		16	6 U	6.2 U	6.2 U	6.1 U	6.1 U
Vinyl chloride		6.5 U	6 U	6.2 U	6.2 U	6.1 U	6.1 U
Xylenes (total)		6.5 U	6 U	6.2 U	6.2 U	6.1 U	6.1 U

* - MS or MSD exceeds the control limits

B - The analyte was found in an associated blank, as well as in the sample.

E - Compound concentration exceeds the upper level of the calibration range of the instrument for that specific analysis.

J - Indicates an estimated value.

M - Manual integrated compound.

U - Analyzed for but not detected.

Table 1. Summary of Volatile Organic Compounds in Soil, Former Thyphin Steel, Inc., Manorhaven, New York

Parameter (Concentrations in ug/kg)	Designation: Sample Date: Sample Depth (ft bls):	MP-9 8/2/2007 26	MP-9B 8/2/2007 22	MP-11 8/6/2007 25	MP-14 8/6/2007 23	MP-15 8/1/2007 16	MP-15 8/1/2007 20
1,1,1-Trichloroethane		6.3 U	6.1 U	6 U	5.9 U	5.9 U	6.3 U
1,1,2,2-Tetrachloroethane		6.3 U	6.1 U	6 U	5.9 U	5.9 U	6.3 U
1,1,2-Trichloroethane		6.3 U	6.1 U	6 U	5.9 U	5.9 U	6.3 U
1,1-Dichloroethane		6.3 U	6.1 U	6 U	5.9 U	5.9 U	6.3 U
1,1-Dichloroethene		6.3 U	6.1 U	6 U	5.9 U	5.9 U	6.3 U
1,2-Dichloroethane		6.3 U	6.1 U	6 U	5.9 U	5.9 U	6.3 U
1,2-Dichloropropane		6.3 U	6.1 U	6 U	5.9 U	5.9 U	6.3 U
2-Butanone		13 U	12 U	12 U	12 U	12 U	13 U
2-Hexanone		13 U	12 U	12 U	12 U	12 U	13 U
4-Methyl-2-pentanone		6.3 U	6.1 U	6 U	5.9 U	5.9 U	6.3 U
Acetone		5.4 J	5.1 J	14 J	15 J	7.3 J	25 U
Benzene		6.3 U	6.1 U	6 U	5.9 U	5.9 U	6.3 U
Bromodichloromethane		6.3 U	6.1 U	6 U	5.9 U	5.9 U	6.3 U
Bromoform		6.3 U	6.1 U	6 U	5.9 U	5.9 U	6.3 U
Bromomethane		6.3 U	6.1 U	6 U	5.9 U	5.9 U	6.3 U
Carbon disulfide		6.3 U	2.3 J	6 U	5.9 U	5.9 U	6.3 U
Carbon tetrachloride		6.3 U	6.1 U	6 U	5.9 U	5.9 U	6.3 U
Chlorobenzene		6.3 U	6.1 U	6 U	5.9 UM	5.9 U	6.3 U
Chloroethane		6.3 U	6.1 U	6 U	5.9 U	5.9 U	6.3 U
Chloroform		6.3 U	6.1 U	6 U	5.9 U	5.9 U	6.3 U
Chloromethane		6.3 U	6.1 U	6 U	5.9 U	5.9 U	6.3 U
cis-1,2-Dichloroethene		6.3 U	6.1 U	6 U	5.9 U	5.9 U	6.3 U
cis-1,3-Dichloropropene		6.3 U	6.1 U	6 U	5.9 U	5.9 U	6.3 U
Dibromochloromethane		6.3 U	6.1 U	6 U	5.9 U	5.9 U	6.3 U
Ethylbenzene		6.3 U	6.1 U	6 U	5.9 U	5.9 U	6.3 U
Methylene chloride		4.7 JB	4 JB	6.9 J*B	6 J*B	4.4 JB	4.6 JB
Styrene		6.3 U	6.1 U	6 U	5.9 U	5.9 U	6.3 U
Tetrachloroethene		6.3 U	6.1 U	6 U	5.9 U	5.9 U	6.3 U
Toluene		6.3 U	6.1 U	6 U	5.9 U	5.9 U	6.3 U
trans-1,2-Dichloroethene		6.3 U	6.1 U	6 U	5.9 U	5.9 U	6.3 U
trans-1,3-Dichloropropene		6.3 U	6.1 U	6 U	5.9 U	5.9 U	6.3 U
Trichloroethene		6.3 U	46	6 U	5.9 U	4.2 J	6.3 U
Vinyl chloride		6.3 U	6.1 U	6 U	5.9 U	5.9 U	6.3 U
Xylenes (total)		6.3 U	6.1 U	6 U	5.9 U	5.9 U	6.3 U

* - MS or MSD exceeds the control limits

B - The analyte was found in an associated blank, as well as in the sample.

E - Compound concentration exceeds the upper level of the calibration range of the instrument for that specific analysis.

J - Indicates an estimated value.

M - Manual integrated compound.

U - Analyzed for but not detected.

Table 1. Summary of Volatile Organic Compounds in Soil, Former Thypin Steel, Inc., Manorhaven, New York

Parameter (Concentrations in ug/kg)	Designation:	MP-15	MP-15B
	Sample Date:	8/2/2007	8/1/2007
	Sample Depth (ft bls):	24	20
1,1,1-Trichloroethane		6.3 U	6.7 U
1,1,2,2-Tetrachloroethane		6.3 U	6.7 U
1,1,2-Trichloroethane		6.3 U	6.7 U
1,1-Dichloroethane		6.3 U	6.7 U
1,1-Dichloroethene		6.3 U	6.7 U
1,2-Dichloroethane		6.3 U	6.7 U
1,2-Dichloropropane		6.3 U	6.7 U
2-Butanone		13 U	13 U
2-Hexanone		13 U	13 U
4-Methyl-2-pentanone		6.3 U	6.7 U
Acetone		25 U	9.1 J
Benzene		6.3 U	6.7 U
Bromodichloromethane		6.3 U	6.7 U
Bromoform		6.3 U	6.7 U
Bromomethane		6.3 U	6.7 U
Carbon disulfide		6.3 U	6.7 U
Carbon tetrachloride		6.3 U	6.7 U
Chlorobenzene		6.3 U	6.7 U
Chloroethane		6.3 U	6.7 U
Chloroform		6.3 U	6.7 U
Chloromethane		6.3 U	6.7 U
cis-1,2-Dichloroethene		6.3 U	6.7 U
cis-1,3-Dichloropropene		6.3 U	6.7 U
Dibromochloromethane		6.3 U	6.7 U
Ethylbenzene		6.3 U	6.7 U
Methylene chloride		8.3 JB	4.3 JB
Styrene		6.3 U	6.7 U
Tetrachloroethene		4.4 J	1.5 J
Toluene		6.3 U	6.7 U
trans-1,2-Dichloroethene		6.3 U	6.7 U
trans-1,3-Dichloropropene		6.3 U	6.7 U
Trichloroethene		3.3 J	6.7 U
Vinyl chloride		6.3 U	6.7 U
Xylenes (total)		6.3 U	6.7 U

* - MS or MSD exceeds the control limits

B - The analyte was found in an associated blank, as well as in the sample.

E - Compound concentration exceeds the upper level of the calibration range of the instrument for that specific analysis.

J - Indicates an estimated value.

M - Manual integrated compound.

U - Analyzed for but not detected.

Table 2. Summary of Metals Detected in Soil, Former Thypin Steel, Inc. Facility, Manorhaven, New York.

Parameter (Concentrations in ug/kg)	Designation: Sample Date: Sample Depth (ft bls):	MP-15 8/1/2007 20	MP-9 8/2/2007 22
Iron		11200	7210
Manganese		246	67.9

ug/kg - Micrograms per kilogram
 ft bls - Feet below land surface

Table 3. Summary of Wet Chemistry Detected in Soil, Former Thypin Steel, Inc., Manorhaven, New York

Parameter (Concentrations in ug/kg)	Designation:		MP-4		MP-9		MP-9		MP-9B		MP-11	
	Sample Date:	Sample Depth (ft bls):	8/6/2007	8/6/2007	8/2/2007	8/2/2007	8/2/2007	8/2/2007	8/2/2007	8/2/2007	8/6/2007	8/6/2007
Chemical Oxygen Demand		17	NS	NS	NS	244 U	NS	NS	NS	NS	NS	NS
Chloride			NS	NS	NS	12.2 U	NS	NS	NS	NS	NS	NS
Hexavalent Chromium			NS	NS	NS	1 U	NS	NS	NS	NS	NS	NS
Nitrate Nitrite as N			NS	NS	NS	1.2 U	NS	NS	NS	NS	NS	NS
Sulfate			NS	NS	NS	39	NS	NS	NS	NS	NS	NS
Total Organic Carbon		1820	763	395	339	260	1410	435	580	589		

U - Non-Detected

B - Estimated result. Result is less than RL.

NS - Not sampled

Table 3. Summary of Wet Chemistry Detected in Soil, Former Thypin Steel, Inc., Manorhaven, New York

Parameter (Concentrations in ug/kg)	Designation:		MP-15		MP-15B	
	MP-14	MP-15	MP-15	MP-15	MP-15	MP-15B
	8/6/2007	8/1/2007	8/1/2007	8/2/2007	8/1/2007	8/1/2007
Sample Date:	23	16	20	24	20	20
Sample Depth (ft bls):						
Chemical Oxygen Demand	NS	NS	251 U	NS	NS	NS
Chloride	NS	NS	12.6 U	NS	NS	NS
Hexavalent Chromium	NS	NS	0.55 B	NS	NS	NS
Nitrate Nitrite as N	NS	NS	1.3 U	NS	NS	NS
Sulfate	NS	NS	16.7	NS	NS	NS
Total Organic Carbon	355	7120	651	3960	1020	

U - Non-Detected

B - Estimated result. Result is less than RL.

NS - Not sampled

Table 4. Summary of Volatile Organic Compounds in Groundwater, Former Thyphin Steel, Inc., Manorhaven, New York

Parameter (Concentrations in ug/L)	Designation:	MP-1	MP-11	MP-11	MP-14	MP-14
	Sample Date:	8/1/2007	8/6/2007	8/6/2007	8/2/2007	8/2/2007
	Sample Depth (ft bls):	17-18	13-14	24-25	23-24	9-10
1,1,1-Trichloroethane		5 U	5 U	5 U	5 U	5 U
1,1,2,2-Tetrachloroethane		5 U	5 U	5 U	5 U	5 U
1,1,2-Trichloroethane		5 U	5 U	5 U	5 U	5 U
1,1-Dichloroethane		5 U	5 U	0.7 JM	5 U	5 U
1,1-Dichloroethene		4.7 J	5 U	5 U	5 U	5 U
1,2-Dichloroethane		5 U	5 U	5 U	5 U	5 U
1,2-Dichloropropane		5 U	5 U	5 U	5 U	5 U
2-Butanone		10 U	2.1 J	10 U	10 U	10 U
2-Hexanone		10 U	10 U	10 U	10 U	10 U
4-Methyl-2-pentanone		10 U	10 U	10 U	10 U	10 U
Acetone		2.5 J	12	7.5 J	10 U	2.4 J
Benzene		5 U	5 U	5 U	5 U	5 U
Bromodichloromethane		5 U	5 U*	5 U*	5 U	5 U
Bromoform		5 U	5 U	5 U	5 U	5 U
Bromomethane		5 U	5 U	5 U	5 U	5 U
Carbon disulfide		5 U	5 U	5 U	5 U	5 U
Carbon tetrachloride		5 U	5 U	5 U	5 U	5 U
Chlorobenzene		5 U	5 U	5 U	5 U	5 U
Chloroethane		5 U	5 U*	5 U*	5 U	5 U
Chloroform		5 U	5 U	5 U	5 U	5 U
Chloromethane		5 U	5 U	5 U	5 U	5 U
cis-1,2-Dichloroethene		38	5 U	0.84 J	1.4 J	5 U
cis-1,3-Dichloropropene		5 U	5 U	5 U	5 U	5 U
Dibromochloromethane		5 U	5 U	5 U	5 U	5 U
Ethylbenzene		5 U	5 U	5 U	5 U	5 U
Methylene chloride		5 U	5 U	5 U	5 U	5 U
Styrene		5 U	5 U	5 U	5 U	5 U
Tetrachloroethene		5 U	5 UM	1.2 J	13	4.2 J
Toluene		5 U	0.3 J	0.34 J	5 U	5 U
trans-1,2-Dichloroethene		0.53 J	5 U	5 U	5 U	5 U
trans-1,3-Dichloropropene		5 U	5 U	5 U	5 U	5 U
Trichloroethene		830	13	6.7	6.9	2.6 J
Vinyl chloride		5 U	5 U	5 U	5 U	5 U
Xylenes (total)		5 U	5 U	5 U	5 U	5 U

ft bls - Feet below land surface

µg/L - Micrograms per liter

* - MS or MSD exceeds the control limits

B - The analyte was found in an associated blank, as well as in the sample.

E - Compound concentration exceeds the upper level of the calibration range of the instrument for that specific analysis.

J - Indicates an estimated value.

M - Manual integrated compound.

U - Analyzed for but not detected.

Table 4. Summary of Volatile Organic Compounds in Groundwater, Former Thy-pin Steel, Inc., Manorhaven, New York

Parameter (Concentrations in ug/L)	Designation: Sample Date: Sample Depth (ft bls):	MP-15 8/1/2007 20-21	MP-15 8/1/2007 9-10	MP-15B 8/1/2007 20-21	MP-4 8/2/2007 10-11	MP-4 8/2/2007 26-27
1,1,1-Trichloroethane		3.1 J	5 U	44	5 U	5 U
1,1,2,2-Tetrachloroethane		5 U	5 U	5 U	5 U	5 U
1,1,2-Trichloroethane		5 U	5 U	5 U	5 U	5 U
1,1-Dichloroethane		5 U	5 U	8.4	5 U	5 U
1,1-Dichloroethene		5 U	5 U	1.2 J	5 U	3.2 J
1,2-Dichloroethane		5 U	5 U	5 U	5 U	5 U
1,2-Dichloropropane		5 U	5 U	5 U	5 U	5 U
2-Butanone		10 U	10 U	10 U	10 U	10 U
2-Hexanone		10 U	10 U	10 U	10 U	10 U
4-Methyl-2-pentanone		10 U	10 U	10 U	10 U	10 U
Acetone		10 U	4.2 J	10 U	3.7 J	3.5 J
Benzene		5 U	5 U	5 U	5 U	5 U
Bromodichloromethane		5 U	5 U	5 U	5 U	5 U
Bromoform		5 U	5 U	5 U	5 U	5 U
Bromomethane		5 U	5 U	5 U	5 U	5 U
Carbon disulfide		5 U	5 U	5 U	5 U	5 U
Carbon tetrachloride		5 U	5 U	7.2	5 U	5 U
Chlorobenzene		5 U	5 U	5 U	5 U	5 U
Chloroethane		5 U	5 U	5 U	5 U	5 U
Chloroform		5 U	5 U	5 U	5 U	5 U
Chloromethane		5 U	5 U	5 U	5 U	5 U
cis-1,2-Dichloroethene		3.9 J	5 U	47	3.4 J	29
cis-1,3-Dichloropropene		5 U	5 U	5 U	5 U	5 U
Dibromochloromethane		5 U	5 U	5 U	5 U	5 U
Ethylbenzene		5 U	5 U	5 U	5 U	5 U
Methylene chloride		5 U	5 U	5 U	5 U	5 U
Styrene		5 U	5 U	5 U	5 U	5 U
Tetrachloroethene		31	5.2	51	5 U	0.81 J
Toluene		5 U	5 U	5 U	5 U	5 U
trans-1,2-Dichloroethene		5 U	5 U	1.6 J	5 U	0.69 J
trans-1,3-Dichloropropene		5 U	5 U	5 U	5 U	5 U
Trichloroethene		27	9.1	130	91	770
Vinyl chloride		5 U	5 U	5 U	5 U	1.6 J
Xylenes (total)		5 U	5 U	5 U	5 U	5 U

ft bls - Feet below land surface

µg/L - Micrograms per liter

* - MS or MSD exceeds the control limits

B - The analyte was found in an associated blank, as well as in the sample.

E - Compound concentration exceeds the upper level of the calibration range of the instrument for that specific analysis.

J - Indicates an estimated value.

M - Manual integrated compound.

U - Analyzed for but not detected.

Table 4. Summary of Volatile Organic Compounds in Groundwater, Former Thy-pin Steel, Inc., Man-orhaven, New York

Parameter (Concentrations in ug/L)	Designation:	MP-9	MP-9	MP-9B	MW-2	MW-24
	Sample Date:	8/2/2007	8/2/2007	8/2/2007	8/7/2007	8/7/2007
	Sample Depth (ft bls):	10-11	20-21	20-21	-	-
1,1,1-Trichloroethane		5 U	5 U	5 U	2 J	5 U
1,1,2,2-Tetrachloroethane		5 U	5 U	5 U	5 U	5 U
1,1,2-Trichloroethane		5 U	5 U	5 U	5 U	5 U
1,1-Dichloroethane		5 U	5 U	5 U	0.7 JM	5 UM
1,1-Dichloroethene		5 U	5 U	49	5 U	5 U
1,2-Dichloroethane		5 U	5 U	5 U	5 U	5 U
1,2-Dichloropropane		5 U	5 U	5 U	5 U	5 U
2-Butanone		10 U	10 U	10 U	10 U	10 U
2-Hexanone		10 U	10 U	10 U	10 U	10 U
4-Methyl-2-pentanone		10 U	10 U	10 U	10 U	10 U
Acetone		2.3 J	10 U	10 U	10 UM	10 U
Benzene		5 U	5 U	5 U	5 U	5 U
Bromodichloromethane		5 U	5 U	5 U	5 U	5 U
Bromoform		5 U	5 U	5 U	5 U	5 U
Bromomethane		5 U	5 U	5 U	5 U	5 U
Carbon disulfide		5 U	5 U	5 U	5 U	5 U
Carbon tetrachloride		5 U	5 U	5 U	5 U	5 U
Chlorobenzene		5 U	5 U	5 U	5 U	5 U
Chloroethane		5 U	5 U	5 U	5 U	5 U
Chloroform		5 U	5 U	5 U	5 U	5 U
Chloromethane		5 U	5 U	5 U	5 U	5 U
cis-1,2-Dichloroethene		5 U	5 U	200	1.5 J	0.78 J
cis-1,3-Dichloropropene		5 U	5 U	5 U	5 U	5 U
Dibromochloromethane		5 U	5 U	5 U	5 U	5 U
Ethylbenzene		5 U	5 U	5 U	5 U	5 U
Methylene chloride		5 U	5 U	5 U	5 U	5 U
Styrene		5 U	5 U	5 U	5 U	5 U
Tetrachloroethene		5 U	5 U	0.71 J	5.8	5 UM
Toluene		5 U	5 U	5 U	5 U	5 U
trans-1,2-Dichloroethene		5 U	5 U	6.5	5 UM	5 U
trans-1,3-Dichloropropene		5 U	5 U	5 U	5 U	5 U
Trichloroethene		4.3 J	11	4200	5.8	43
Vinyl chloride		5 U	5 U	18	5 U	5 U
Xylenes (total)		5 U	5 U	5 U	5 U	5 U

ft bls - Feet below land surface

µg/L - Micrograms per liter

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E - Compound concentration exceeds the upper level of the calibration range of the instrument for that specific analysis.

J - Indicates an estimated value.

M - Manual integrated compound.

U - Analyzed for but not detected.

Table 4. Summary of Volatile Organic Compounds in Groundwater, Former Thypin Steel, Inc., Manorhaven, New York

Parameter (Concentrations in ug/L)	Designation: Sample Date: Sample Depth (ft bls):	MW-29S 8/7/2007 -	MW-31S 8/7/2007 -	MW-33S 8/7/2007 -	MW-35S 8/7/2007 -
1,1,1-Trichloroethane		5 U	5 U	5 U	5 U
1,1,2,2-Tetrachloroethane		5 U	5 U	5 U	5 U
1,1,2-Trichloroethane		5 U	5 U	5 U	5 U
1,1-Dichloroethane		5 U	5 UM	5 UM	5 UM
1,1-Dichloroethene		5 U	5 U	5 U	5 U
1,2-Dichloroethane		5 U	5 U	5 U	5 U
1,2-Dichloropropane		5 U	5 U	5 U	5 U
2-Butanone		10 U	10 U	10 U	10 U
2-Hexanone		10 U	10 U	10 U	10 U
4-Methyl-2-pentanone		10 U	10 U	10 U	10 U
Acetone		10 UM	10	10 UM	1.7 J
Benzene		5 U	5 U	5 U	5 U
Bromodichloromethane		5 U	5 U	5 U	5 U
Bromoform		5 U	5 U	5 U	5 U
Bromomethane		5 U	5 U	5 U	5 U
Carbon disulfide		5 U	5 UM	5 U	5 U
Carbon tetrachloride		5 U	5 U	5 U	5 U
Chlorobenzene		5 U	5 U	5 U	5 U
Chloroethane		5 U	5 U	5 U	5 U
Chloroform		5 U	5 U	5 U	5 U
Chloromethane		5 U	5 U	5 U	5 U
cis-1,2-Dichloroethene		5 U	5 UM	1.9 J	6.1
cis-1,3-Dichloropropene		5 U	5 U	5 U	5 U
Dibromochloromethane		5 U	5 U	5 U	5 U
Ethylbenzene		5 U	5 U	5 U	5 U
Methylene chloride		5 U	5 U	5 U	5 U
Styrene		5 U	5 U	5 U	5 U
Tetrachloroethene		0.61 J	0.96 J	5 U	5 U
Toluene		5 U	5 U	5 U	5 U
trans-1,2-Dichloroethene		5 U	5 U	5 UM	5 UM
trans-1,3-Dichloropropene		5 U	5 U	5 U	5 U
Trichloroethene		5 U	1.2 J	6.2	120 D
Vinyl chloride		5 U	5 U	5 U	5 U
Xylenes (total)		5 U	5 U	5 U	5 U

ft bls - Feet below land surface

µg/L - Micrograms per liter

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B - The analyte was found in an associated blank, as well as in the sample.

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J - Indicates an estimated value.

M - Manual integrated compound.

U - Analyzed for but not detected.

Table 4. Summary of Metals in Groundwater, Former Thypin Steel, Inc., Manorhaven, New York

Parameter (Concentrations in ug/L)	Designation:		MP-9	
	MP-15	MP-15	MP-9	MP-9
Sample Date:	8/1/2007	8/1/2007	8/2/2007	8/2/2007
Sample Depth (ft bls):	20-21	20-21FILTERED	20-21	20-21FILTERED
Iron	393000	200 U	780	780
Manganese	8300	2700	340	340

ft bls - Feet below land surface

ug/L - Micrograms per liter

U - Analyzed for but not detected.

Table 4. Summary of Wet Chemistry in Groundwater, Former Thypin Steel, Inc., Manorhaven, New York

Parameter (Concentrations in ug/L)	Designation: Sample Date: Sample Depth (ft bls):	MP-15 8/1/2007 20-21	MP-9 8/2/2007 20-21
Alkalinity		214	390
Chemical Oxygen Demand		21.4	34.6
Chloride		2.9	8.3
Chromium (+6)		0.01 UH	0.01 UH
Nitrate Nitrite as N		0.62 H	1.8 H
Sulfate		460	108
TOC Average Quads		3.8	10.2

ft bls - Feet below land surface

ug/L - Micrograms per liter

U - Analyzed for but not detected.

H - Sample was prepped or analyzed beyond the specified holding time