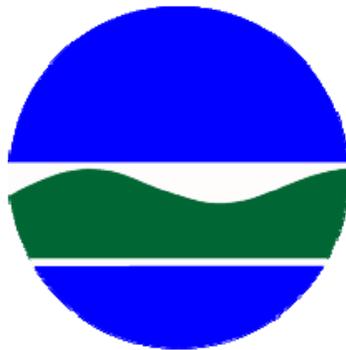


Department of Environmental Conservation

Division of Environmental Remediation

**Site Investigation &
Remedial Action Report
Riverview Industrial Center
Town of Tonawanda, Erie County
Site Number 9-15-225
Spill Number 0902367**

October 2010



New York State Department of Environmental Conservation

Site Investigation & Remedial Action Report

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Prepared by



New York State Department of
Environmental Conservation

Division of Environmental Remediation
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Table of Contents

Page

EXECUTIVE SUMMARY

1. INTRODUCTION

1.1	Site History.....	1
1.2	Project Background.....	1
1.3	Site Investigation Work Plan.....	2
1.4	Remedial Action.....	2

2. SITE INVESTIGATION ACTIVITIES

2.1	Soil Boring Installation.....	4
2.2	Sub-surface Soil Sampling.....	4
2.3	Surface Soil Sampling.....	4
2.4	Surface Water Sampling.....	4
2.5	Groundwater Monitoring Wells.....	4
2.6	Groundwater Sampling.....	5
2.7	Underground & Aboveground Storage Tank Sampling.....	5
2.8	Oil/Water Separator, Site Sewer and Mechanic Pit Water Sampling.....	5
2.9	Oil/Water Separator, Site Sewer, Containment Dike, and Drainage Ditch Sediment Sampling.....	5
2.10	Site Survey.....	5
2.11	Data Validation.....	6

3. SITE INVESTIGATION RESULTS

3.1	Sub-surface Soil Sampling.....	6
3.2	Surface Soil Sampling.....	6
3.3	Surface Water Sampling.....	7
3.4	Groundwater Sampling.....	7
3.5	Underground & Aboveground Storage Tank Sampling.....	8
3.6	Oil/Water Separator, Site Sewer and Mechanics Pit Water Sampling.....	8
3.7	Oil/Water Separator, Site Sewer, Containment Dike and Drainage Ditch Sediment Sampling.....	8
3.8	Fill Area.....	10
3.9	Supplemental Investigation.....	10

4. Areas of Concern

4.1	Underground Storage Tanks.....	11
4.2	Former Truck Loading Rack.....	11
4.3	Dike Sediments.....	11
4.4	Site Sewer.....	11
4.5	Fill Area.....	11
4.6	Recommendations.....	11

5.	REMEDIAL ACTION	
5.1	Initial Scope of Work.....	12
5.2	Expanded Scope of Work	12
6.	Former Product Pipelines	
6.1	Arco Pipeline.....	14
6.2	Ashland Pipeline.....	14
7.	CONCLUSIONS and RECOMMENDATIONS	

FIGURES

- 1 Site Location Map
- 2 Aerial Photo
- 3 Survey Map
- 4 Surface Soil Samples, Monitoring Well, Soil Boring and Test Pit Location Map
- 5 Topographic Survey
- 6 Remedial Action Areas

APPENDICES

- A. Investigation Work Plan(DVD)
- B. Investigation Report (DVD)
- C. Remedial Action Report (DVD)
- D. Asbestos Inspection Report (DVD)
- E. Data Usability Summary Report (DVD)
- F. Daily Inspection Reports (DVD)
- G. Site Photo's (DVD)
- H. Former Tank Farm SPCC Plan(DVD)
- I ARCO (Atlantic) Pipeline Correspondence

Executive Summary

The Riverview Industrial Center is a 25.2 acre site that was a former oil storage facility licensed under the New York State Department of Environmental Conservation (NYSDEC) Major Oil Storage Facility (MOSF) program.

The Riverview Industrial Center has remained vacant and underutilized since the early 1990's. Historical records indicate that there were at one time approximately 11 above ground storage tanks with an estimated combined storage capacity of 11,8000,000 gallons. Significant suspected belowground infrastructure existed on site including underground storage tanks, oil/water separator, site sewers and underground product piping.

In December 2007, Erie County prepared and submitted an application to the NYSDEC for the Environmental Restoration Program (ERP) seeking funds to investigate the site for future development as a commercial/light industrial use consistent with existing zoning regulations. Due to insufficient funding remaining in the ERP grant program, the application was not accepted and was put on hold until the program was refunded.

To complete the site investigation, the NYSDEC received grant funding through the USEPA Targeted Site Assessment (TSA) program. With the TSA funds, the NYSDEC Division of Environmental Remediation Region 9 office prepared an investigation Scope of Work and hired a contractor through the NYSDEC Spill Response Investigation and Remediation standby contracts. The investigation began in May 2009 and was completed in August 2009. An Investigation Report was prepared detailing the results of the investigation work and was submitted to the NYSDEC in March 2010. The Investigation report is attached as Appendix B.

During the course of the investigation, significant petroleum contamination, including free product, was found. Due to the amount of petroleum present and the proximity to the Niagara River, the NYSDEC began an immediate remedial action to address the contamination. A contractor was hired through the NYSDEC Spill Response and Containment standby contracts to perform the remedial work at the direction of the NYSDEC Region 9 staff. Remedial work

began in September 2009 and was substantially complete by December 2009. Additional remedial work was performed in March/April 2010 to investigate and remediate an abandoned product delivery pipeline that was off-site on an adjacent property.

The scope of the remedial work expanded significantly during the cleanup effort. A total of 14 underground storage tanks were found and removed including the contaminated soil and petroleum products found in the tanks. Only four tanks were known to exist prior to the remedial work. In addition, the site sewer contained petroleum product and was made from cement asbestos material requiring additional inspection and monitoring during the removal. An abandoned underground product delivery pipeline was discovered that contained approximately 500 gallons of gasoline.

Confirmation samples were collected from the remediated areas to assess the level of cleanup achieved. The confirmation samples, in general, indicated that the remaining soil in the remediated areas met the NYSDEC Part 375 SCO's for commercial use. However there remains residual contamination on site that was not address during the remedial activity. Contaminated sediments are present in the flooded former containment dikes and a fill/disposal area was identified in the southern portion of the developed site. The fill /disposal area contains construction and demolition debris along with general waste materials associated with the former tank farm operation. A former petroleum delivery pipeline that connected to the Arco pipeline is also thought to exist in the southern portion of the site.

Additional remedial work is required to drain the flooded dikes, remove the contaminated sediments from the dike areas and to remove and properly dispose of the material in the fill area. In addition however slight, the presence of additional underground storage tanks and/or contaminated soil cannot be ruled out.

Finally, it is recommended that an environmental easement be placed on the property that limits the redevelopment to commercial/light industrial and includes the development of a Site Management Plan to guide future owners or tenants on the proper procedures to follow if contamination and/or abandoned underground tanks are discovered in the future.

1. INTRODUCTION

1.1 Site History - The Riverview Industrial Center (Site) is a 25.2 acres abandoned oil storage facility which has remained vacant and underutilized since the early 1990's. The license to store petroleum through the New York State Major Onshore Storage facility program was revoked by the NYSDEC in November 1989. The site is bordered on the north by River Road and the Niagara River, the south by vacant wooded land and the Enbridge Energy Tonawanda Station, to the east by an abandoned former steel recycling facility and to the west by Riverview Commerce Park. Property uses in the area are typically commercial and recreational. (Refer Figure 1). The parcel approximates an elongated "C" shape with only the portion abutting River Road having been developed. The developed portion of the site contained a two story 10,460 sf vacant building, truck racks along River Road and one large 5,000,000 gallon aboveground oil storage tank. The Town of Tonawanda razed the site building, loading rack and abandoned large storage tank during the summer of 2009. Historical records indicate that there were 11 above ground tanks at one time with an estimated combined storage capacity of 11,8000,000. Earthen dikes can still be identified on site, which were the containment structures for the former above ground storage tanks. Significant belowground infrastructure existed on site including an estimated 10,000 gallon heating oil tank adjacent to the building, 2 - 3,000 gallon gasoline/diesel tanks in the northwest area of the site, an oil/water separator and 4,000 gallon holding tank for the site sewer located behind the tank farm area. In addition a site drainage system runs down the center of the site and numerous underground piping systems were present.

1.2 Project Background - In December 2007, Erie County prepared and submitted an application to the NYSDEC for the Environmental Restoration Program (ERP) seeking funds to investigate the abandoned and underutilized site for future development as a commercial/light industrial use consistent with existing zoning regulations. Due to the state fiscal problems the application was not accepted.

To complete the site investigation, the NYSDEC received grant funding through the USEPA Targeted Site Assessment (TSA) program. With the TSA funds, the NYSDEC Division of Environmental Remediation Region 9 office prepared an investigation work plan and hired a

contractor through the NYSDEC Spill Response Investigation and Remediation standby contracts. Op-Tech Environmental and Services Inc. was hired to conduct the investigation at the Riverview Industrial Center site. The investigation began in May 2009 and was completed in August 2009. An Investigation Report was prepared detailing the results of the investigation work and was submitted to the NYSDEC in March 2010.

During the course of the investigation, significant contamination including petroleum product, was found associated with the site's abandoned underground storage tanks, truck loading area, oil water separator and site sewer. Due to the amount of petroleum contamination present and the proximity to the Niagara River, the NYSDEC began an immediate remedial action to address the contamination. Op-Tech Environmental Services Inc. was hired through the NYSDEC Spill Response and Containment standby contracts to perform the remedial work at the direction of the NYSDEC Region 9 staff. Remedial work began in September 2009 and was substantially complete by December 2009. Additional remedial work was performed in March/April 2010 to investigate and remediate an abandoned product delivery pipeline that was off-site on an adjacent property

1.3 Site Investigation Work Plan – A Site Investigation Work Plan was prepared by the NYDEC Region 9 staff in March 2009. The work plan required the collection of samples from surface soil, sub-surface soil, surface water, groundwater and various waste materials that were expected to be encountered during the course of the investigation. The Site Investigation Work Plan can be found in Appendix A, while the Investigation Report can be found in Appendix B of this report.

1.4 - Remedial Action – During the course of the investigation, significant soil contamination including free products were discovered. A spill file was opened (0902376) and when the efforts to contact the last known previous owners were unsuccessful, remedial action began in September 2009. The remedial action was substantially completed by December 2009. Additional work was performed in March /April 2010 along the east property line to assess the condition of a former product delivery pipeline. The pipeline was off-site on adjacent property. Access to investigate and remediate the former pipeline was granted by the property owner in March 2010. The Remedial Action report can be found in Appendix C of this report.

2 SITE INVESTIGATION ACTIVITIES

Investigation activities began on May 4 2009 and included the following: detailed property and topographic survey, test pit excavations, soil boring using direct push methods, monitoring well installation, re-development of 4 existing site wells and collection of environmental samples for chemical analysis. A detailed asbestos survey of the structure located on the site was not performed. The asbestos inspection was performed as part of the Town of Tonawanda building demolition project that removed the building and the remaining abandoned large aboveground storage tank. These investigation activities are described in more detail in the Site Investigation Work Plan found in Appendix A, and in the Investigation Report found in Appendix B of this report.

The Department hired Op-Tech Environmental Services Inc. through the Standby Investigation & Remediation Contracts to complete the Site Investigation. The following investigation activities were completed by Op-Tech:

- Prepared a detailed site map, including topography, and the location of all test pits, soil borings, and existing and new monitoring wells ;
- Advance 46 soil borings using direct-push technology to collect soil samples up to 8' below ground surface (bgs);
- Excavated 21 test pits to a approximately 10' bgs;
- Installed four monitoring wells with locking caps to a maximum depth of 25 feet bgs;
- provided a geologist to complete stratigraphy logs and well construction diagrams during the soil boring, test pit and well installation activities;
- collected 22 surface soil samples;
- collected to 3 surface water samples;
- collected 8 groundwater samples from the existing and new monitoring wells ;
- collected water, sediment and samples from two storm sewer manhole ;
- collected water, sediment/sludge and NAPL samples from oil/water separator ;
- collected water, sludge and product sample 14 from each underground storage tanks;

- provided technician during the site investigation program to collect samples, complete the appropriate paper work, and transport the samples and paper work to the analytical laboratory; and
- Provide technician and appropriate equipment to develop the four existing and four new monitoring wells installed during the Site Investigation.

2.1 Soil Boring Installation – To evaluate the sub-soil conditions, a total of 42 soil borings were advanced using direct push soil sampling technology and 21 test pits were excavated using a backhoe. The soil borings and test pits were advanced into native soil and samples were collected based on visual observation and screening with a photo ionization detector (PID). Samples were not collected from all soil borings and test pits. Refer Figures 3 & 4 for soil boring and test pit locations.

2.2 Sub-surface Soil Sampling – A total of 38 samples were collected from the soil borings, monitoring well installation and test pits to assess sub-soil contamination. The sub-surface soil samples were analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), pesticides, polychlorinated bi-phenyls (PCBs) and inorganic compounds (metals).

2.3 Surface Soil Sampling – A total of 22 surface soil samples were collected to assess the surface soil contamination. The surface soil samples were analyzed for VOCs, SVOCs, pesticides, PCBs and metals. Refer to Figures 3 & 4 for surface soil sample locations.

2.4 Surface Water Sampling - A total of 4 surface water samples were collected to assess the surface water contamination. Surface water samples were collected from three flooded containment dike areas and from the surface runoff into the western drainage ditch system. The surface water samples were analyzed for VOCs, SVOCs, pesticides, PCBs and metals. Refer to Figure 4 for the surface water sample locations.

2.5 Groundwater Monitoring Wells – Four new groundwater monitoring wells were installed to a depth of approximately 30 feet below the ground surface to intercept the first water bearing zone for contamination. Five existing monitoring wells were found on site. MW-02 located along River Road was found to be damaged and un-usable. Due to its location MW-02 was removed and a new

well installed, MW-2R, to provide down gradient groundwater data. MW-03 was also found to be damaged and un-usable. Due to nearby existing wells, MW-03 was not needed and was removed and the boring grouted. MW-01, MW-04 and MW-09 were re-developed and sampled. Refer to Figure 3 & 4 for the groundwater Monitoring well locations.

2.6 Groundwater Sampling - A total of 8 groundwater samples were collected to assess the groundwater contamination. The groundwater samples were analyzed for VOCs, SVOCs, pesticides, PCBs and metals.

2.7 Underground and Above Ground Storage Tank Sampling – Four underground storage tanks (USTs) and one Above Ground Storage tank (AST) were known to exist at the time of the investigation. Tank contents included water and Non Aqueous Phase Liquid (NAPL). The NAPL was analyzed for VOCs, SVOCs, PCBs, Metal's and if NAPL was present, for petroleum identification. Pesticides were not analyzed for in the NAPL matrix.

2.8 Oil/Water Separator, Site Sewer and Mechanics Pit Water Sampling – A total of 4 water samples were collected from the Oil/Water Separator (O/WS), two site sewer man holes and the former building mechanics pit. The samples were analyzed for VOCs, SVOCs, pesticides, PCBs and metals.

2.9 Oil/Water Separator, Site Sewer, Containment Dike and Drainage Ditch Sediment Sampling – A total of seven sediment samples were collected from the O/WS (SED-6), MH-1 (SED-2), MH-2 (SED-5), two drainage ditch locations (SED-03-OF & SED-4) and the central (SS-1) and southern dike areas (SED-8-26). The samples were analyzed for VOCs, SVOCs, pesticides, PCBs and metals.

2.10 Site Survey – Site surveys that included property boundaries, sample locations and topography were provided by Wm. Schutt and Associates, P.C. Please refer to Figures 1 Boundary Survey, Figure 2 Monitoring Well, Test Pit and Soil Boring Locations and Figure 3 Topography for site survey information.

2.11 Data Validation – Sample data collected during the investigation was analyzed by Test America Inc and a Data Usability Summary Report (DUSR) was prepared by Valu-Data of WNY LLC. Please refer to Appendix E on the included CD for the complete DUSR and Appendix C Remedial Action report for the raw analytical data.

3 SITE INVESTIGATION RESULTS

As a result of the site investigation activities performed by Op-Tech a report was prepared and submitted in March 2010 that described the investigation performed and data gathered during the investigation. Please refer to Appendix B on the included CD for the complete investigation report. Tables and figures illustrating the location of the samples and data are found in Appendix A. The following is a summary of the investigation results:

3.1 Sub-surface Soil Sampling – A total of 38 samples were collected from the soil borings, monitoring well installation and test pits to assess sub-soil contamination. VOCs were detected in 24 of the 38 samples in concentrations that ranged from non-detect to a maximum 223,710 ug/kg . Acetone, benzene, methylbenzene, toluene and total xylenes exceeded the NYSDEC Part 375 Soil Cleanup Objectives (SCOs) for unrestricted use. SVOCs were detected in 22 of the 38 samples in concentrations that ranged from non-detect to 134,240 ug/kg. Benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)Fluoranthene, chrysene and naphthalene were detected at levels exceeding the NYSDEC Part 375 SCOs for unrestricted use. Pesticide compounds were detected in 20 of the 38 samples in concentrations that ranged from non-detect to 509 ug/l. There were no detections exceeding the NYSDEC Part 375 SCOs for unrestricted use. PCBs were detected in 5 of the 38 samples in concentrations that ranged from non-detect to 20,000 ug/kg. PCB concentrations at TP-6 exceeded the NYSDEC Part 375 SCOs for unrestricted use. Metal concentrations in the 38 sub-soil samples are consistent with expected background concentrations and do not exceed the NYSDEC Part 375 SCOs for unrestricted use.

3.2 Surface Soil Sampling – A total of 22 surface soil samples were collected to assess the surface soil contamination. The surface soil samples were analyzed for VOCs, SVOCs, pesticides, PCBs and metals. VOCs were detected in 3 of the 22 samples in concentrations that ranged from non-detect to a maximum 50.0 ug/kg . Acetone exceeded the NYSDEC Part 375 Soil Cleanup

Objectives (SCOs) for unrestricted use. SVOCs were detected in 20 of the 22 samples in concentrations that ranged from non-detect to a maximum 11,000 ug/kg. Seven SVOC compounds exceeded the NYSDEC Part 375 SCOs for unrestricted use. Pesticides were detected in 9 of the 22 samples in concentrations that ranged from non-detect to 120 ug/l. Two pesticide compounds exceeded the NYSDEC Part 375 SCOs for unrestricted use. PCBs were detected in 2 of the 22 samples in concentrations that ranged from non-detect to 100 ug/kg. PCB surface soil concentrations did not exceed the NYSDEC Part 375 SCOs for unrestricted use. Metal concentrations in the 22 surface samples are consistent with expected background concentrations and do not exceed the NYSDEC Part 375 SCOs for unrestricted use.

3.3 Surface Water Sampling - A total of 4 surface water samples were collected to assess the surface water contamination. Surface water samples were collected from three flooded containment dike areas and from the surface runoff into the western drainage ditch system. The surface water samples were analyzed for VOCs, SVOCs, pesticides, PCBs and metals. VOCs were detected in 3 of the 4 samples in concentrations that are below NYSDEC Division of Water TOGS 1.1.1 guidance values. SVOCs were not detected in the surface water samples. Pesticide compounds were detected in 3 of the 4 samples in concentrations that are below NYSDEC Division of Water TOGS 1.1.1 guidance values. PCBs were not detected in the surface water samples. Metal concentrations in the 4 surface water samples are consistent with expected background concentrations and do not exceed the NYSDEC Division of Water TOGS 1.1.1 guidance values.

3.4 Groundwater Sampling - A total of 8 groundwater samples were collected to assess the groundwater contamination. The groundwater samples were analyzed for VOCs, SVOCs, pesticides, PCBs and metals. VOCs were detected in 4 of the 8 samples in concentrations that ranged from non-detect to 6.6 ug/l. Detected VOC concentrations are below NYSDEC Division of Water TOGS 1.1.1 guidance values. An SVOC compound, bis-(2-ethylhexyl) phthalate, was detected in MW-008 at 3.1 ug/l which is below the NYSDEC Division of Water TOGS 1.1.1 guidance value. Pesticide compounds were detected in 5 of the 8 samples and ranged from non-detect to a maximum 0.068 ug/l. Endosulfan I in MW-05 exceeded the NYSDEC Division of Water TOGS 1.1.1 guidance values. PCBs were not detected in any of the groundwater samples. Six metals exceeded the NYSDEC Division of Water TOGS 1.1.1 guidance values.

3.5 Underground and Above Ground Storage Tank Sampling – As suspected, VOCs and SVOCs were detected in the NAPL matrix found in the tanks. No PCBs were detected and metals were within expected concentrations.

3.6 Oil/Water Separator, Site Sewer and Mechanics Pit Water Sampling – VOCs were not detected in any samples collected from the O/WS, manholes or mechanics pit. SVOCs were not detected in the O/WS and MH-2 and were detected at 2.9 ug/l in the mechanic's pit and 22.36 ug/l in MH-1. Four SVOC compounds exceeded the NYSDEC Division of Water TOGS 1.1.1 guidance values at MH-1. One pesticide compound, gamma Chlordane, was detected in sample OWS-1 and MH-1 below the NYSDEC Division of Water TOGS 1.1.1 guidance values. PCBs were not detected in the O/WS, MH-2 and the mechanic's pit. PCB concentration in MH-1 was detected at 0.33 ug/kg which is above the TOGS guidance values. Metals were detected in all samples at expected background concentrations.

3.7 Oil/Water Separator, Site Sewer, Containment Dike and Drainage Ditch Sediment Sampling – A total of seven sediment samples were collected from the O/WS (SED-6), MH-1 (SS-1), MH-2 (SED-5), two drainage ditch locations (SED-03-OF & SED-4) and the central (SED-2) and southern dike areas (SED-8-26). The samples were analyzed for VOCs, SVOCs, pesticides, PCBs and metals.

- a. **Drainage Ditch** - The two drainage ditch sediment samples results found that only xylenes, at an estimated value of 5.2 ug/kg in SED-4. VOC compounds detected in the drainage ditches did not exceed the unrestricted SCOs. Several SVOCs were detected ranging from non-detect to 2,300 ug/kg. The SVOCs were predominately found in the sediment adjacent to the O/WS discharge (SED-4). Several SVOCs exceeded the unrestricted SCOs at SED-4 and included benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, Chrysene, dibenzo(a,h)anthracene and indeno(1,2,3-cd)Pyrene. The fence line ditch (SED-3-OF) SVOC concentrations did not exceed the unrestricted SCOs. No pesticides or PCBs were to exceed the unrestricted SCOs in either ditch sediment sample. Metals were detected in all

samples and arsenic, copper, manganese, nickel and zinc were found to exceed the unrestricted SCOS.

- b. **Dike Sediments** – Two samples were collected representing the flooded dike sediments. Sample SED-2 was collected from a dike drain in the central site area and Sample SED-8-26 was collected from the south western dike area. The VOC compounds detected ranged from a concentration of non-detect to 220ug/kg. Acetone at 79ug/kg exceeded the unrestricted SCO in SED-2. Several SVOCs were detected in ranging from non-detect to 220,000ug/kg in SED-2. Several SVOCs exceeded the unrestricted SCOs in SED-2 and included benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, Chrysene, dibenzo(a,h)anthracene, fluoranthene, indeno(1,2,3-cd)Pyrene, phenanthrene and Pyrene. Pesticides were not detected in SED-8-26 and ranged from non-detect to 130ug/kg for 4,4' DDT in SED-2. 4,4'-DDT exceeded the unrestricted SCO. PCBs were not detected in SED-8-26 and ranged from non-detect to 290 ug/kg in SED-2, which exceeds the unrestricted SCO. Metals were detected in all samples with nickel at 37.9 mg/kg, exceeding the unrestricted SCO.
- c. **Site Sewers** - Samples of sediments found in two site sewer manholes were collected. Sample SS-1 was collected from MH-1 which was located near the northwest corner of the former building. Sample SED-5 was collected from MH-2 was located adjacent to the oil/water separator at the south end of the former tank farm area. The VOC compounds detected in man holes ranged from a concentration on non-detect to 14 ug/kg and included acetone, benzene, carbon disulfide and xylenes. None of the VOCs detected in the man holes exceeded the unrestricted SCOs. SVOCs were detected in the man holes ranging from a concentration of non-detect to 1,000 ug/kg. None of the SVOCs detected in the manhole sediments exceeded the unrestricted SCOs. Pesticides were not detected in SED-5 while sediments in SS-1 were detected ranging from non-detect to 2.2 ug/kg. None of the pesticides detected in the manhole sediments exceeded the unrestricted SCOs. PCBs were not detected in the manhole sediments. Metals were detected in the manhole sediments generally at expected concentration levels. Manganese at 4,560 mg/kg and Zinc at 138 mg/kg exceeded the unrestricted SCOs.

- d. **Oil/Water Separator** – One sample, SED-6, was collected from the sediment in the former O/WS south of the former tank farm. VOC compounds detected in SED-6 ranged from non-detect to 44 ug/kg. None of the VOCs detected in SED-6 exceeded the unrestricted SCOs. Several SVOCs were detected in SED-6 ranging from non-detect to 3800 ug/kg. None of the SVOCs detected in SED-6 exceeded the unrestricted SCOs. Pesticides were detected ranging from non-detect to 96 ug/kg. None of the pesticides detected in SED-6 sediments exceeded the unrestricted SCOs. PCBs were not detected in the SED-6 sediments. Metals were detected in the SED-6 sediment generally at expected concentrations. Lead at 74.3 mg/kg and zinc at 150 mg/kg exceeded the unrestricted SCO's.

3.8 Fill Area – Test Pits TP-3, TP-4, TP-5 and TP-6 were excavated in area discovered to be a general fill area. Fill material with petroleum odor, construction debris, scrap steel etc was identified. Sample data from the test pits indicated that VOCs ranged from non-detect, to 45,000 ug/kg in the waste material. Acetone, benzene, methylbenzene, isopropylbenzene and xylenes exceeded the unrestricted SCOs.

3.9 Supplemental Investigation – During the demolition of the site facilities by the Town of Tonawanda a suspected area of drum disposal was uncovered in the former Tank 4 dike area. A supplemental investigation that included a series of test pits was conducted in the area to assess area. No buried drums or other waste materials were found during this supplemental investigation. It was determined that the drums found were used as former pipe supports for the facility infrastructure. The drums were filled with concrete and placed in the ground and subsequently covered with soil.

4.0 AREAS OF CONCERN

Based on the results of the investigation several areas of concern were identified on site which included:

4.1 Underground Storage Tanks – The four known underground storage tanks were found to contain varying amounts of water and petroleum products. Analysis of soil and observation of soil borings and test pits indicated that petroleum contamination was present outside of the tanks.

4.2 Former Truck Loading Rack Area - The soil in the former truck loading rack area was found to be grossly contaminated with petroleum products. Test pits in this area indicated the presence of significant amounts of free product in the soil.

4.3 Dike Sediments – Sediments in the flooded dike are contaminated with petroleum products. Sample collection generated a significant sheen and objectionable odors from the sediments.

4.4 Site Sewer – The site sewer and associated soil around the pipe was found to contain significant amounts of petroleum product.

4.5 Fill Area – The investigation identified a fill area in the south west corner of the former tank farm area that contained oily debris, construction debris and general material from the former tank farm operation.

4.6 Recommendations - The investigations identified these areas of concern on the Riverview Industrial Center site. Several of the areas of concern were “grossly contaminated” with petroleum products and required immediate action. “Grossly Contaminated” was identified as evidence of free product in the sample matrix or by visual observation. To address the grossly contaminated areas the NYSDEC opened a spill file (Spill #0902367) and hired a state oil spill cleanup contractor to remediate the underground storage tanks, truck loading rack area and site sewer. The dike sediments and fill area did not exhibit the “grossly contaminated” petroleum products and were left for future action.

5.0 REMDIAL ACTION

To address the contamination found at the Riverview Industrial Center site the NYSDEC hired Op-Tech Environmental Services Inc. through the Oil and Hazardous Materials Spill Fund to remove the grossly contaminated soils and underground storage tanks and associated liquids. Spill #0902367 was opened to facilitate the cleanup work. Remedial action was initiated in September 2009 and was substantially complete by December 2009. Additional work to assess a steel product delivery line that was found off site was performed in March and April 2010. The spill file was closed in July 2010 as not achieving standards as residual petroleum contamination is still present, most notably in the dike sediments and remaining sewer line. The Site remedial Action report dated February 19, 2010 is found in Appendix C on the attached CD.

5.1 Initial Scope of Work - The initial scope of work included the areas identified in the investigation and included:

- Removal and disposal of 4 underground storage tanks and associated contaminated soil,
- Removal and disposal of oil/water separator and associated contaminated soil,
- Removal and disposal of former truck fueling rack contaminated soil,
- Removal and disposal of site sewer containing free petroleum product
- Removal and disposal of excavation remedial water and petroleum products ,
- Collection and analysis of confirmation samples in the remediated areas, and
- Backfill and restoration of all excavations to approximately pre-remedial conditions.

5.2 Expanded Scope of Work - The scope of the remedial effort rapidly expanded as additional areas of concern were found requiring remedial work. These included:

- Two underground storage tanks under the former building floor slab containing petroleum products and water. Tank 6 was a compartmentalized tank that consisted of six individual rectangular box tanks each able to hold up to 3500 gallons for a total capacity of 21000 gallon. Tank 6 was full of water and petroleum products. The six boxes were side by side

under the former floor and were joined together for support. Tank 7 was found just north of Tank 6 under the building floor slab and was an approximate 1000 gallon standard tank. Tank 7 also contained water and petroleum products.

- Two underground storage tanks, tanks 8 and 9 each approximately 1000 gallons were found in the former truck fueling rack during the soil excavation. The tanks were partially filled with sand but still contained petroleum products and contaminated water.
- Additional grossly contaminated soil was found in a former foundation area along the west property line. The removal of this soil also uncovered Tank 10. Tank 10 was approximately 500 gallons and contained water and petroleum product.
- The site sewer was found to be made of asbestos containing materials during removal of the sewer line and associated contaminated soil. An independent asbestos inspector was hired and asbestos abatement procedures were employed during the sewer removal. In addition, the amount of sewer pipe required to be removed was expanded with the discovery of petroleum products in the pipeline under the former building foundation.
- Removal and disposal of a 6" diameter steel product delivery line that contained raw gasoline type product. The line was removed up to the eastern property line. After securing access to the adjoining property additional work was performed in March and April 2010 on the 6" steel pipe line to assess the impact on the adjoining property. Test pits were dug and the pipeline opened to remove any residual gasoline. Test pits did not indicated the presence of grossly contaminated soil around the pipe nor was any residual gasoline found in the pipe. The pipeline was not removed and remains in place.
- All excavated areas were backfilled and restored to approximate pre-remedial conditions. The excavations were backfilled with available site soil and imported recycled concrete fill.

6 FORMER PRODUCT PIPELINES

Two petroleum product delivery pipelines are known to have served the site when the tank farm was in operation. The former Arco pipeline enters the facility from the south and is located underground until it connected with the facility at the former manifold house in the central part of the former tank farm.

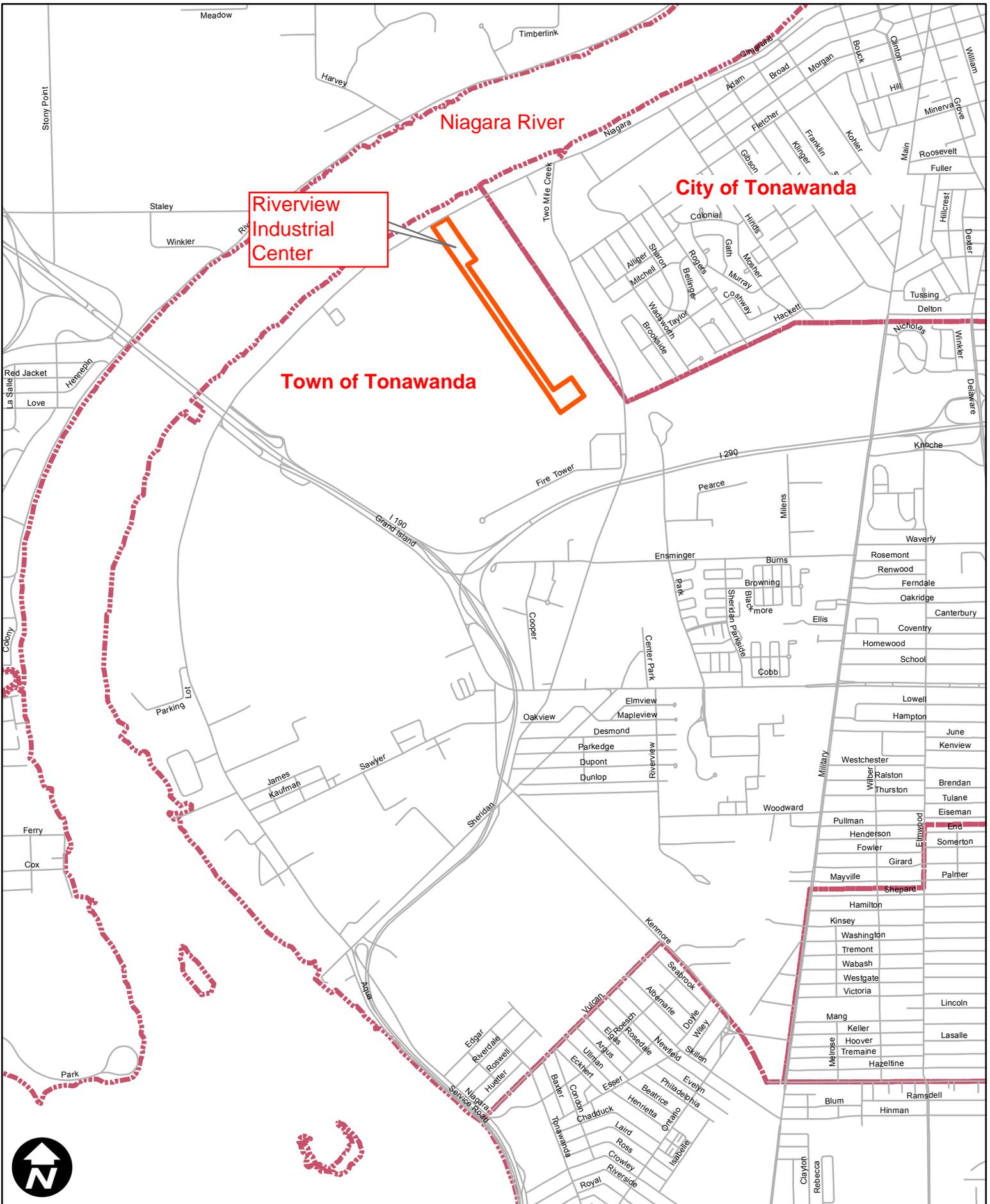
6.1 Arco Pipeline - The Arco line was not found during the investigation or remedial action at the site. Available documentation indicates that the gasoline in the former Arco pipeline into the former tank farm was removed and the pipeline flushed with water in October 1987 to facilitate pipeline upgrades. Operation at the Tank farm ceased in November 1989 with the revocation of the Major On-Shore Facility License. Anecdotal information indicates that the Arco pipeline was not put back into service after the pipeline was flushed. The current operator of the now Sunoco pipeline has no information on the operation of the pipeline into the former tank farm and has disconnected the remains of the former line during the summer of 2009. All information indicates that the buried Arco pipeline still exists on the site and the presence of petroleum products in or around the pipe cannot be discounted.

6.2 Ashland Pipeline - The Ashland pipeline enters the facility from the north along the eastern property line. The former Ashland pipeline was removed during the remedial action to the eastern fence line. The Ashland pipeline was found to exit the site and parallels the eastern property line approximately 8' into the adjacent property. Test pits and investigation into the remaining Ashland pipeline did not indicate the presence of grossly contaminated soil or free petroleum product. The portion of the pipeline on the adjacent property was not removed.

7 CONCLUSIONS AND RECOMMENDATIONS

The remedial work completed by the NYSDEC through the Spill and Hazardous Materials Response contracts removed areas of identified “grossly contaminated” soils. Confirmation samples document that satisfactory cleanup levels were achieved in the excavated areas. Residual contamination is known to be present on site in the dike sediments, fill area and remaining site sewer. No remedial work was implemented in these areas as “grossly” contaminated soil was not found in these areas. In addition it is suspected that an abandoned product delivery pipeline is still present that linked the site to the former Arco Pipeline to the south. Available documentation indicates that the line was flushed with water in 1987. A second product delivery line that connected to the Ashland pipeline was removed on site with remnants remaining on the adjacent property to the east. Due to the nature of the former site use, other areas of contamination that were not discovered during the site investigation and remedial action may exist on the property. Therefore, it is recommended that a Site Management Plan be required that includes a soil management plan and use restriction limiting future site development to commercial. An Environmental Easement identifying this restriction should be prepared and filed with the Erie County Clerk. A generic Site Management Plan and Environmental Easement templates that can be modified to fit the site conditions can be found at <http://www.dec.ny.gov/chemical/48236.html>.

Figures



5335 River Road (SBL: 52.06-3-10)
 Riverview Industrial Complex
 Town of Tonawanda, NY 14150
 SITE LOCATION MAP

 Riverview Industrial Complex
 Municipal Boundaries

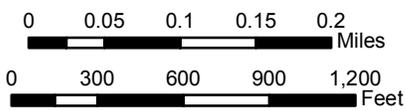
Figure 1

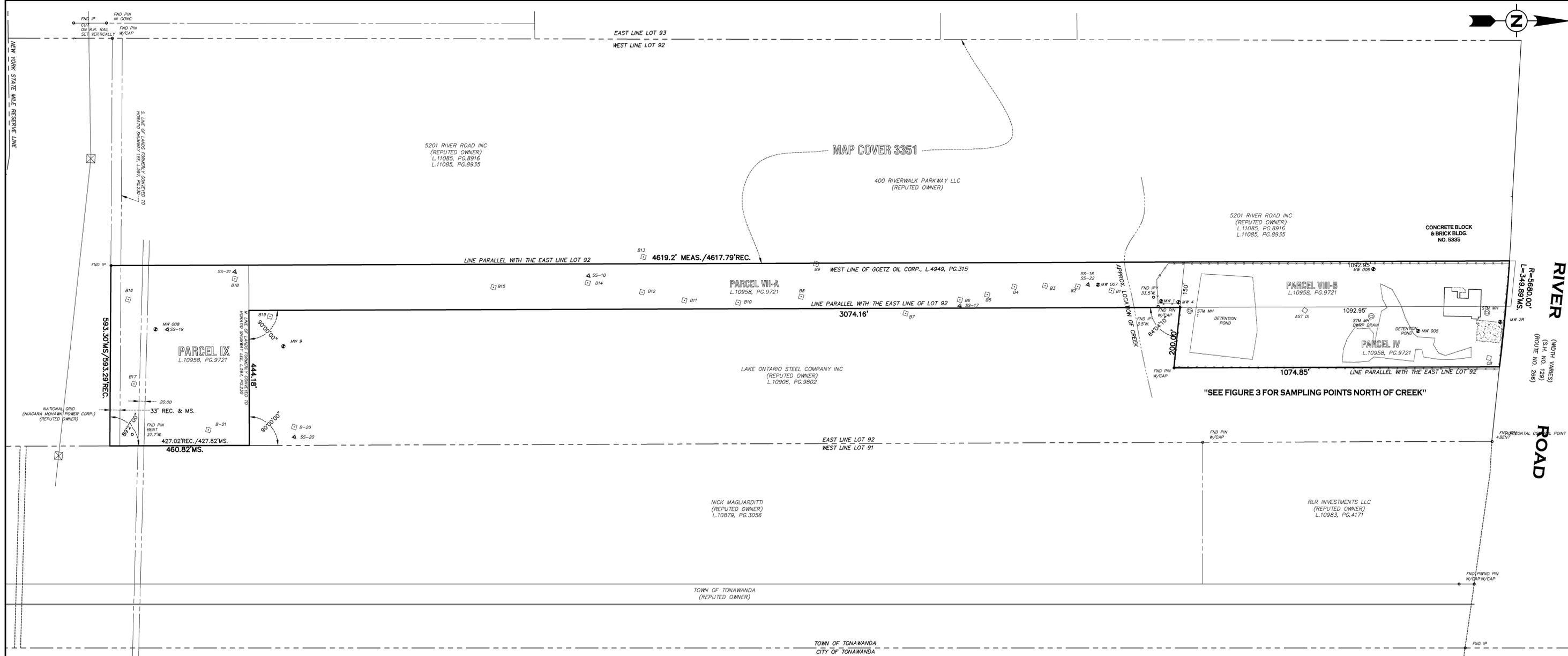


5335 River Road (SBL: 52.06-3-10)
 Riverview Industrial Complex
 Town of Tonawanda, NY 14150

-  Parcels
-  Riverview Industrial Complex
-  Municipal Boundaries

Figure 2





POINT #	ELEVATION	POINT #	ELEVATION	POINT #	ELEVATION	POINT #	ELEVATION
B1	580.95	SB 1	597.62	MW 1	592.20	TP 1	588.64
B2	587.03	SB 2	597.78	MW 4	589.28	TP 2	588.72
B3	592.31	SB 3	597.77	MW 005	597.81	TP 3	590.54
B4	595.56	SB 4	597.78	MW 006	600.13	TP 4	580.53
B5	595.73	SB 5	598.64	MW 007	584.32	TP 4P	589.90
B6	595.52	SB 6	598.25	MW 008	603.08	TP 5	589.79
B7	597.96	SB 7	597.94	MW 9	603.12	TP 6	590.05
B8	598.83	SB 8	598.25	DWRP DRAIN	592.20	TP 7	590.37
B9	598.96	SB 9	597.78	SEPNW	588.26	TP 8	590.96
B10	597.16	SB 10	597.06	SEPNW	588.15	TP 9	591.87
B11	594.75	SB 11	598.26	SS-1	593.52	TP 10	594.85
B12	587.64	SB 12	598.04	SS-2	597.24	TP 11	599.80
B13	589.14	SB 13	597.42	SS-3	594.00	TP 12	592.76
B14	594.77	SB 14	598.02	SS-4	597.90	TP 13	593.47
B15	597.66	SB 15	597.90	SS-5	594.06	TP 14	597.04
B16	600.99	SB 16	598.32	SS-6	592.75	TP 15	596.77
B17	598.75	SB 17	597.60	SS-7	593.54	TP 16	593.00
B18	599.57	SB 18	597.79	SS-8	594.62	TP 17	587.57
B19	600.53	SB 19	597.84	SS-9	599.39	TP 18	594.42
B20	598.60	SB 20	597.68	SS-10	593.46	TP 19	597.94
B21	599.87	SB 21	594.57	SS-11	594.90	TP 20	598.94
				SS-12	597.67	TP 21	597.50
				SS-13	589.71		
				SS-14	590.49		
				SS-15	598.83		
				SS-16	589.20		
				SS-17	579.72		
				SS-18	592.31		
				SS-19	595.52		
				SS-20	598.96		
				SS-21	587.64		
				SS-22	597.66		
					599.57		

BENCHMARK TABLE (DATUM NAVD '88)

DESIGNATION	ELEVATION	DESCRIPTION
1	573.77	NGS MONUMENT "TRAMP USLS" PID-060150
2	600.02	TOP SHUT OFF NUT, FIRE HYDRANT LOCATED IN FRONT OF BUILDING NO.5335 RIVER ROAD

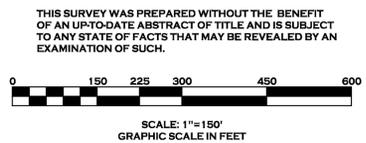
NOTES

1. MONITORING WELLS ELEVATIONS ARE THE TOP OF THE PVC CASING PIPE
2. SEE FIGURE 3 FOR SAMPLING POINTS NORTH OF THE CREEK

LEGEND

- ▲ SURFACE SOIL SAMPLE POINT (SS-1)
- SOIL BORE HOLE (SB-1)
- TEST PIT (TP-1)
- MONITORING WELL (MW-1)
- SURFACE WATER SAMPLE POINT (SW-1)
- SEDIMENT SAMPLE POINT (SED-1)

DRAWING REVISIONS		
ITEM	DATE	DESCRIPTION
1	02/04/2010	REVISED PER NYSDEC COMMENTS



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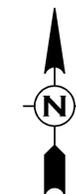
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DRAWN BY:	CJM
CHECKED BY:	GCW
DATE:	08/31/2009
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TOWN OF TONAWANDA
COUNTY OF ERIE, STATE OF NEW YORK
 PART OF LOT 92 MILE RESERVE
 HOLLAND LAND COMPANY'S SURVEY

5335 RIVER ROAD
BOUNDARY & TOPOGRAPHIC SURVEY

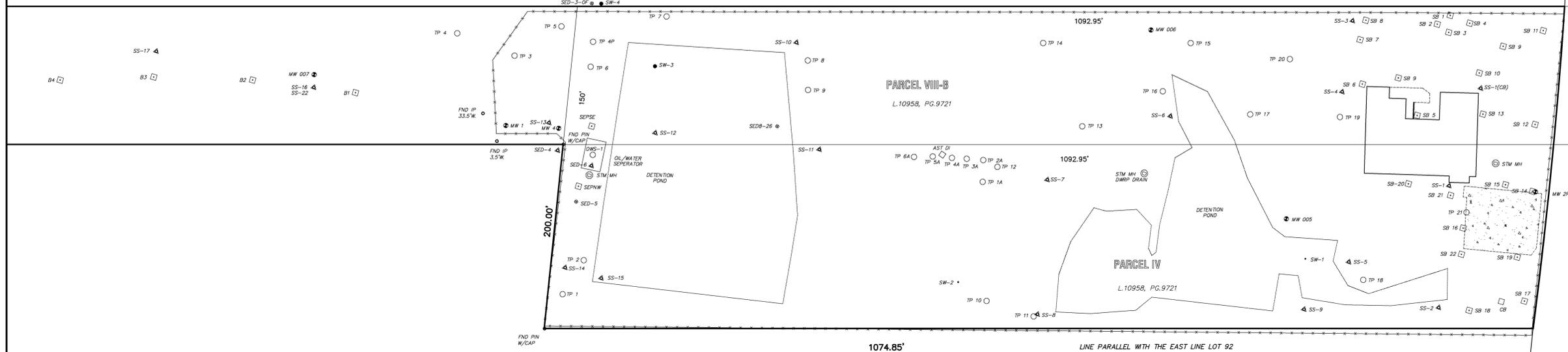
ENGINEERING
LAND SURVEYING
 WM. SCHUTT & ASSOCIATES, P.C.
 37 CENTRAL AVE.
 LANCASTER, NY 14086-2143
 PH: 716-663-5961
 FAX: 716-663-0169
 WWW.WMSCHUTT.COM

FIGURE 3
 DRAWING SCALE: 1"=150'
 SURVEY FILE/C:09065-02
 WSA PROJECT NO. 09065



5201 RIVER ROAD INC
(REPUTED OWNER)
L.11085, PG.8916
L.11085, PG.8935

CONCRETE BLOCK
& BRICK BLDG.
NO. 5335



RIVER
R=5680.00'
L=349.89 MS.
ROAD (ROUTE NO. 286)
(S.H. NO. 129)
(NOTHING VARIES)

POINT # ELEVATION

TP 1	588.64
TP 2	588.72
TP 3	590.54
TP 4	580.53
TP 4P	589.90
TP 5	589.79
TP 6	590.05
TP 7	590.37
TP 8	590.96
TP 9	591.67
TP 10	594.85
TP 11	599.80
TP 12	592.76
TP 13	593.47
TP 14	597.04
TP 15	596.77
TP 16	593.00
TP 17	597.57
TP 18	594.42
TP 19	597.04
TP 20	598.94
TP 21	597.50

BENCHMARK TABLE (DATUM NAVD '88)

DESIGNATION	ELEVATION	DESCRIPTION
1	573.77	NGS MONUMENT "RAMP USLS" PID-060150
2	600.02	TOP SHUT OFF NUT, FIRE HYDRANT LOCATED IN FRONT OF BUILDING NO.5335 RIVER ROAD

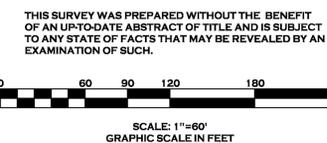
NOTES

1. TEST PITS TP 1A THRU TP 6A ARE ASSOCIATED WITH DRUM INVESTIGATION "ADDENDUM REPORT"

LEGEND

- ▲ SURFACE SOIL SAMPLE POINT (SS-1)
- SOIL BORE HOLE (SB-1)
- TEST PIT (TP-1) & (TP-1A)
- MONITORING WELL (MW-1)
- SURFACE WATER SAMPLE POINT (SW-1)
- ◻ SEDIMENT SAMPLE POINT (SED-1)

DRAWING REVISIONS		
ITEM	DATE	DESCRIPTION
1	02/04/2010	REVISED PER NYSDEC COMMENTS



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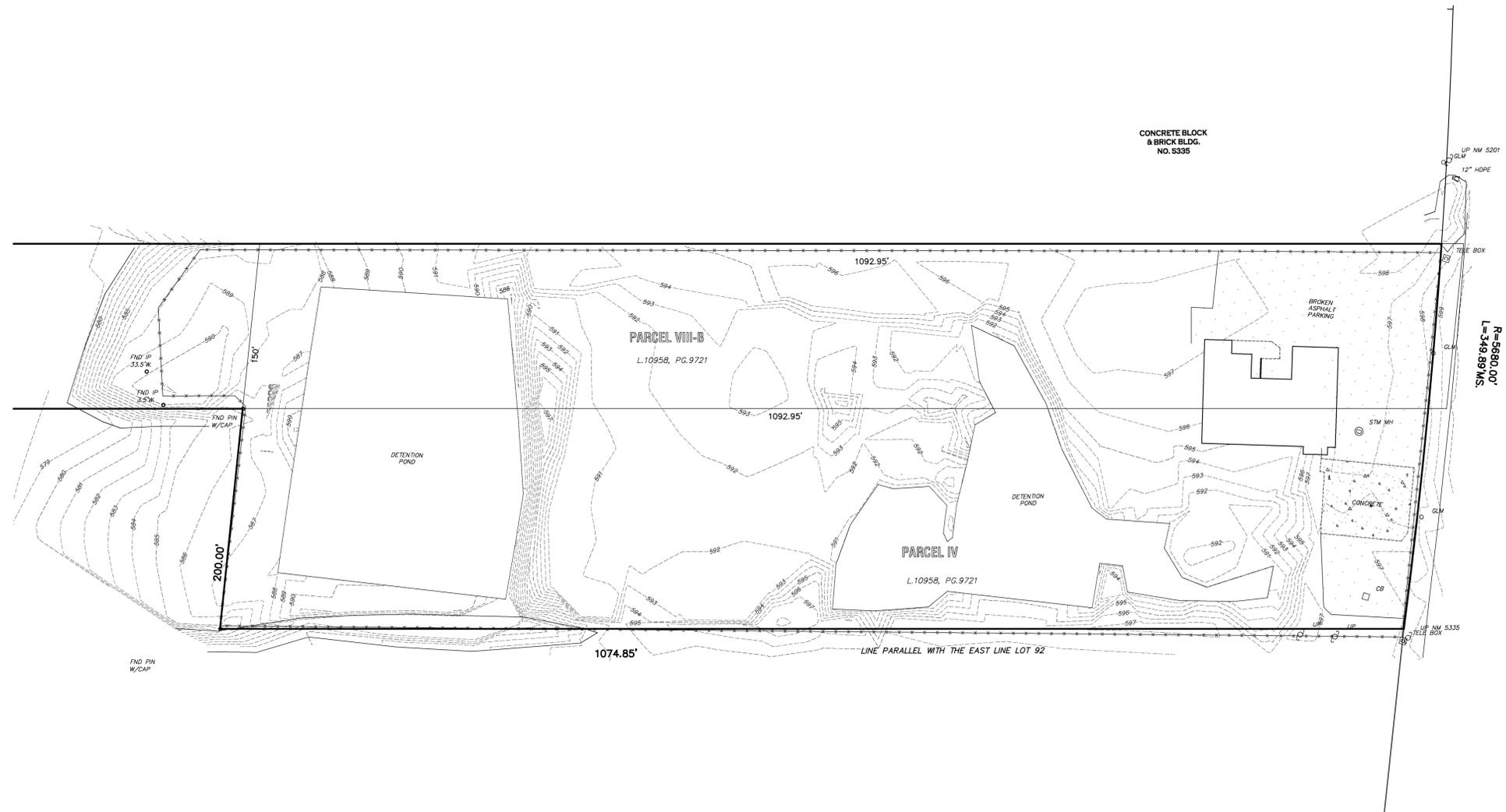
**TOWN OF TONAWANDA
COUNTY OF ERIE, STATE OF NEW YORK
PART OF LOT 92 MILE RESERVE
HOLLAND LAND COMPANY'S SURVEY**

**5335 RIVER ROAD
BOUNDARY & TOPOGRAPHIC SURVEY**

**ENGINEERING
LAND SURVEYING**
WM. SCHUTT & ASSOCIATES, P.C.
37 CENTRAL AVE.
LANCASTER, NY 14086-2143
PH. 716-683-5961
FAX 716-683-0169
WWW.WMSCHUTT.COM

FIGURE 4

DRAWING SCALE: 1"=60'
SURVEY FILE: C/09065-02
WSA PROJECT NO. 09065



RIVER
(WIDTH Varies)
(S.H. NO. 129)
(ROUTE NO. 289)
ROAD

LEGEND

- ANTENNA/DISH
- BENCHMARK
- BOLLARD
- CATCH BASIN
- CLEANOUT
- COMMUNICATIONS BOX
- COMMUNICATIONS MANHOLE
- COMMUNICATIONS MARKER
- COMMUNICATIONS VAULT
- CONIFEROUS SHRUB
- CONIFEROUS TREE
- CUT
- DECIDUOUS SHRUB
- DECIDUOUS TREE
- DRILL/AUGER HOLE
- ELECTRIC MANHOLE
- ELECTRIC METER
- END SECTION
- FILLER CAPS
- FLAG POLE
- FLOOD LIGHT
- GAS LINE MARKER
- GAS MANHOLE
- GAS METER
- GAS SERVICE VALVE
- GAS VALVE
- GUY WIRE
- HANDICAP PARKING
- HYDRANT
- PROPERTY MONUMENT (AS DESCRIBED)
- LIGHT POLE
- MAILBOX
- MONUMENT AS DESCRIBED
- OIL LINE MARKER
- PHONE BOOTH
- PIPE OUTLET
- POST
- POWER VAULT
- RAILROAD CONTROL BOX
- SANITARY SEWER MANHOLE
- SCUPPER
- SIGN (SINGLE POLE)
- SIGN (DOUBLE POLE)
- SIGN (TRIPLE POLE)
- SIGNAL POLE
- SIGNAL POLE (WITH TRAFFIC UTILITY BOX)
- STORM SEWER MANHOLE
- TRAFFIC CONTROL BOX
- TRAFFIC PULLBOX
- UNKNOWN MANHOLE
- UTILITY BOX
- UTILITY POLE
- UTILITY POLE WITH LIGHT
- WATER MANHOLE
- WATER METER
- WATER SERVICE VALVE
- WATER VALVE
- WELL
- WELL YARD DRAIN

- BERM
- CENTERLINE OF ROAD
- CENTERLINE OF DITCH
- FENCE (CHAINLINK)
- FENCE (WOOD)
- GAS MAIN
- GUIDE RAIL (BOX BEAM)
- GUIDE RAIL (W BEAM)
- OVERHEAD WIRES
- LOT LINE
- PARCEL LINE
- RIGHT OF WAY LINE
- SANITARY SEWER LINE
- STORM SEWER LINE
- TREE LINE
- UNDERGROUND CONDUIT
- UNDERGROUND ELECTRIC
- WATER MAIN

BENCHMARK TABLE (DATUM NAVD '88)

DESIGNATION	ELEVATION	DESCRIPTION
1	573.77	NGS MONUMENT "RAMP USLS" PID-060150
2	600.02	TOP SHUT OFF NUT, FIRE HYDRANT LOCATED IN FRONT OF BUILDING NO.5335 RIVER ROAD

MONITORING WELLS ELEVATIONS ARE THE TOP OF THE PVC CASING PIPE

DRAWING REVISIONS		
ITEM	DATE	DESCRIPTION



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SCALE: 1"=60'
GRAPHIC SCALE IN FEET

DESIGNED BY:

DRAWN BY: CJM

CHECKED BY: GCW

DATE: 08/31/2009

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PART OF LOT 92 MILE RESERVE
HOLLAND LAND COMPANY'S SURVEY

**5335 RIVER ROAD
BOUNDARY & TOPOGRAPHIC SURVEY**

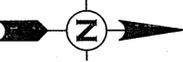
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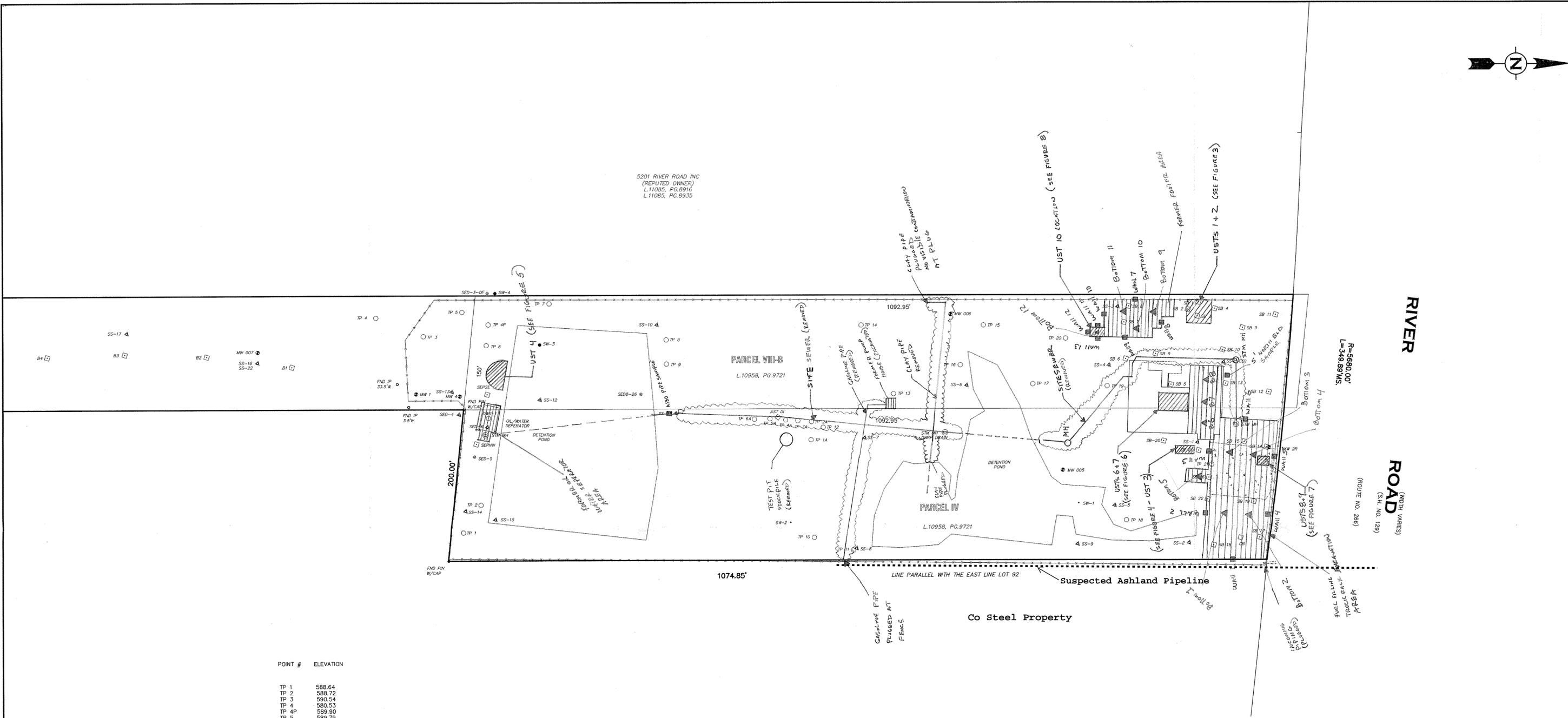
FIGURE 5

1"=60'

SURVEY FILE: C/09065-04
WSA PROJECT NO. 09065



5201 RIVER ROAD INC
(REPUTED OWNER)
L.11085, PG.8916
L.11085, PG.8935



POINT #	ELEVATION
TP 1	588.64
TP 2	588.72
TP 3	590.54
TP 4	580.53
TP 4P	589.90
TP 5	589.79
TP 6	590.05
TP 7	590.37
TP 8	590.96
TP 9	591.67
TP 10	594.85
TP 11	599.80
TP 12	592.76
TP 13	593.47
TP 14	597.04
TP 15	596.77
TP 16	593.00
TP 17	597.57
TP 18	594.42
TP 19	597.94
TP 20	598.94
TP 21	597.50

BENCHMARK TABLE (DATUM NAVD '88)

DESIGNATION	ELEVATION	DESCRIPTION
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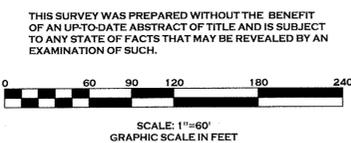
NOTES

- TEST PITS TP 1A THRU TP 6A ARE ASSOCIATED WITH DRUM INVESTIGATION "ADDENDUM REPORT"

LEGEND

- ▲ SURFACE SOIL SAMPLE POINT (SS-1)
- SOIL BORE HOLE (SB-1)
- TEST PIT (TP-1) & (TP-1A)
- MONITORING WELL (MW-1)
- SURFACE WATER SAMPLE POINT (SW-1)
- SEDIMENT SAMPLE POINT (SED-1)
- ▲ POST EXCAVATION BOTTOM SAMPLE
- POST EXCAVATION SIDE WALL SAMPLE
- ▨ UST EXCAVATION AREA
- ▨ SITE CONTAMINATION EXCAVATION AREA

DRAWING REVISIONS		
ITEM	DATE	DESCRIPTION
1	02/04/2010	REVISED PER NYSDEC COMMENTS



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FIGURE 6

DRAWING SCALE: 1"=60'
SURVEY FILE: C/09065-02
WSA PROJECT NO. 09065

Appendices

Included on attached DVD

Appendix A - Investigation Work Plan
Appendix B - Investigation Report
Appendix C - Remedial Action Report
Appendix D - Asbestos Inspection Report
Appendix E - Data Usability Summary Report
Appendix F - Daily Inspection Reports
Appendix G - Site Photo's
Appendix H - Former Tank Farm SPCC Plan
Appendix I – ARCO (Atlantic) Pipeline Correspondence