New York State Voluntary Cleanup Program
Final Remedial Report

for

303 Woodward Avenue
Town of Tonawanda
Town Job #2651

Volume 1 of 2

Prepared For

Town of Tonawanda
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and

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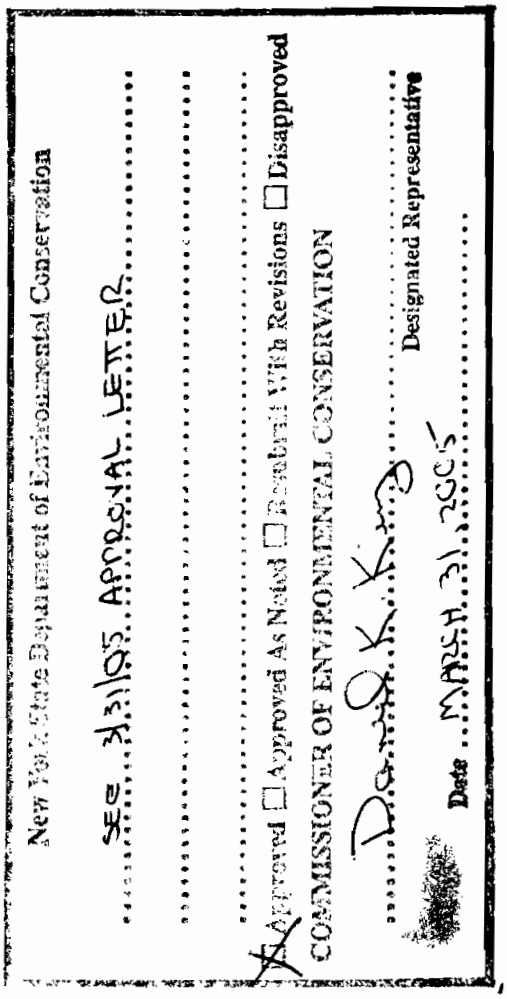

EnSol Project #: 04-0008
September 2004

Final Remedial Report
303 Woodward Ave.

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Executive Summary

The Excelsior Steel Ball Company, located at 303 Woodward Avenue in the Town of Tonawanda, is a former steel ball bearing manufacturing facility that has been remediated by the Town under a Voluntary Cleanup Agreement (Site #V00685-9, Index #B9-0648-03-10) with the New York State Department of Environmental Conservation (NYSDEC).

The property had deteriorated and become unsafe since it ceased operations in the late 1990s. The 2.19-acre parcel (SBL 65.12-1-1) was abandoned after the death of the owner in 2001. In October 2003 a court order was granted to the Town of Tonawanda to enter the "premises to perform environmental testing and to demolish said structure if it is deemed unsafe." The purpose of the project was to implement a site clean up, including building demolition, environmental investigation, remediation and restoration to accommodate commercial or industrial reuse of the property.

EnSol has prepared this **Final Remedial Report** to document remedial activities performed at the property and document the environmental conditions at the site prior to putting the property back in service.

A pre-demolition environmental investigation was performed to identify environmental concerns in preparation for demolition and disposal of the site buildings and their contents. The investigation characterized the underlying soil conditions, located an underground storage tank area, localized PCB sources, and surveyed potential asbestos-containing material. Soil samples were collected in order to determine the nature and extent of soil contamination.

Prior to building demolition, all obvious waste materials including drums, paints, oils, propane tanks, asbestos-containing material, transformer carcasses and PCB electrical equipment were containerized and collected for disposal. Petroleum-contaminated soil excavated from the tank area was disposed at the Tonawanda Landfill. Demolition of site buildings was performed in March 2004.

After demolition and removal of the site buildings was completed, a **Site Characterization Plan (or Remedial Action Work Plan)** was developed in order to confirm that the contaminated soil found during the pre-demolition site investigation was properly removed. The **Plan** proposed the following:

- Field screening and limit-of-excavation sampling
- Soil and groundwater sampling to characterize the site conditions
- Preparation of a final report

The data that was collected after demolition and removal of site structures and equipment was reviewed and an Interim Remedial Measures (IRM) report was submitted to NYSDEC. Levels of RCRA 8 Metals exceeded TAGM 4046 cleanup objectives in all but one sample taken from the upper two feet of the soil outside of the building footprints. The IRM proposed the additional excavation of two feet of material based on this data.

DEC reviewed the IRM and agreed that the proposed additional excavation and placement of two feet of clean fill in areas outside of the building footprints (approximately 70% of the site) would sufficiently remediate the site. The work was performed in June 2004.

Finalization of the Voluntary Cleanup Agreement requires the imposition of institutional controls regarding future use of the property in consideration of contaminants that remain on

site after remediation. These institutional controls are to be in the form of the following deed restrictions:

- A soils management plan will be required for any excavation exceeding a depth of two feet, and
- An annual report must be prepared by the property owner and submitted to the NYSDEC Region 9 office

This **Final Remedial Report** documents that the site has been remediated to the degree acceptable to the New York State Department of Environmental Conservation (NYSDEC) and the New York State Department of Health (DOH) for the proposed end use. The groundwater data shows that the site will not contribute to future groundwater contamination in the area. Therefore, a groundwater monitoring program is not required for final site closure.

1.0 Introduction

EnSol has prepared this **Final Remedial Report** to document remedial activities performed at 303 Woodward Avenue by the Town of Tonawanda and Erie County under the New York State Voluntary Clean-up Program (VCP). The property at 303 Woodward Avenue has been remediated under a Voluntary Cleanup Agreement (Site #V00685-9, Index #B9-0648-03-10) with the New York State Department of Environmental Conservation (NYSDEC). A copy of the VCP application has been provided as **Attachment 1**.

Parties involved in the development and implementation of the project included the Town of Tonawanda, County of Erie, Erie County Industrial Development Agency (ECIDA), New York State Department of Health and New York State Department of Environmental Conservation. The purpose of the project was to implement a site clean up, including building demolition, environmental investigation, remediation and restoration to accommodate commercial/industrial reuse of the property. EnSol, Inc. was retained by the Town of Tonawanda to perform these activities, and to prepare documentation of these activities for submittal to NYSDEC, for activities which confirm that contaminated materials located at 303 Woodward Avenue were properly sampled, characterized and removed for proper disposal. Copies of these documents are included as appendices to this report.

2.0 Background

The site is a former steel ball bearing manufacturing facility (The Excelsior Steel Ball Company) that dates back to 1887. The Excelsior Steel Ball Company was founded and operated by the Roughead family of Tonawanda. Activities at the site, typical of metal working facilities, ceased in the late 1990's. The site is characteristic of brownfield sites in that the structures and equipment associated with the past manufacture of steel ball bearings remained on site. The 2.19-acre property originally included three structures used for manufacturing, maintenance and storage. A topographic survey of site conditions prior to site clean up and restoration is provided on Sheets 2-1 and 2-2, Building Demolition. The 25,000 sft main structure **(Bldg. 1)** was the manufacturing facility that housed metalworking equipment, machine shop area, heat treating equipment, inventory storage, shipping and office areas. There were two auxiliary structures on site located to the north and east of the main structure **(Bldgs. 2 and 3)**. They appeared to have been used for facility maintenance and storage. The auxiliary buildings were approximately 6,400 and 1,400 sft in area. Photographs of the structures at the site prior to cleanup activities (Photos 1 – 3) are provided in **Attachment 2**. As shown in the site photographs, the structures were extremely dilapidated.

After the death of Mr. David G. Roughead in 2001, the site was abandoned and the buildings quickly succumbed to neglect, weather and vandalism. Town officials were concerned about property deterioration and several fires that made the site unsafe to the public. In October 2003, the Town of Tonawanda Deputy Attorney, representing the Town, petitioned the State of New York Supreme Court to allow the Town of Tonawanda to enter the "premises to perform environmental testing and to demolish said structure if it is deemed unsafe." His affidavit attested to the deteriorated condition of the property and presence of various hazardous materials. The property was also in tax arrears with the possibility of foreclosure by Erie County, and would be transferred to the Erie County Industrial Development Agency after foreclosure. The respondent had no objection to the petition, and an order was granted by the Court. Attached to the affidavit are sworn affirmations by Patrick Cunningham, Building and Fire Inspector for the Town, and James Jones, Project Engineer for the Town, which attest to the property's deteriorating and unsafe condition, and measures that should be undertaken to protect the public welfare. The court order, affidavit and affirmations are provided as **Attachment 3**.

There are no known air emissions, water discharge or underground storage tank permits issued for the site according to New York State DEC records. The site is not a listed hazardous waste site or on any EPA NPL listing. The site is located adjacent to the Praxair (Linde) facility in the Town of Tonawanda and, as such, has been investigated by the US Department of Energy for possible radioactive surface contamination originating from the Manhattan Engineering District (MED) activities as part of the Formerly Utilized Sites Remedial Action Program (FUSRAP). A report issued by Oak Ridge National Laboratory in 1997 states that "all radionuclide concentrations and radioactivity levels found on the property are below current guidelines". There have been no other previous environmental investigations or remedial efforts initiated at the site.

3.0 Description of Work

3.1 Pre-Demolition Site Investigation Work Plan

The **Pre-Demolition Site Investigation Work Plan** was developed in order to accomplish the following goals:

1) Determine if the demolition of 303 Woodward Ave. will create hazardous waste.
2) Quantification and analysis of the transformers on site for proper removal and disposal
3) Estimation of amount and type of bulk liquid in the two identified tanks on site, one underground and one above ground.
4) Testing of the soil below the floors within the buildings for proper disposal at the Tonawanda Landfill.
5) Testing of the wood flooring for proper disposal at the Tonawanda Landfill.

A copy of the **Pre-Demolition Site Investigation Work Plan** is provided as **Appendix A**.

3.2 Pre-Demolition Site Investigation

A pre-demolition environmental investigation was performed to identify environmental concerns in preparation for demolition and disposal of the site buildings and their contents. The Investigation characterized the underlying soil conditions, the underground storage tank (UST) area, localized PCB sources, and surveyed potential asbestos-containing material (ACM). Soil samples were collected in order to determine the nature and extent of soil contamination. The pre-demolition site investigation was performed in October and November 2003. A letter report entitled **Pre-Demolition Site Investigation** was submitted to the Town of Tonawanda by EnSol in December 2003. A copy of the **Pre-Demolition Site Investigation** is provided as **Appendix B**.

A bid package for building demolition, material removal and disposal, and backfill was prepared by the Town of Tonawanda. The bids were reviewed and Donald J. Braasch Construction, Inc. was contracted to perform these activities. Bid documents are on file at the Town of Tonawanda Technical Support Department.

3.3 Excavation of USTs and Contaminated Soil

Environmental Service Group (ESG) removed one 5,000-gallon UST, one 8,000-gallon UST, and one 500-gallon aboveground storage tank (AST) from the site in January 2004. The location of the tanks is indicated on **Figure 2 – Sample Location Plan**. According to ESG and NYSDEC records, the tanks contained #2 and #6 fuel oil. All tanks were cut, cleaned and transported to a metal recycler. Tank bottoms were placed in drums and disposed. All piping was cleaned and removed.

Contaminated soil was found in the UST area and 570 tons was excavated for off-site disposal at the Tonawanda Landfill. NYSDEC assigned spill number: 0375414 to the site in December 2003. Verification sample results from the tank excavation floor and walls met TAGM 4046 cleanup levels. Tank excavation dimensions are shown on **Figure 1, UST Excavation**. Based on the analytical results, EnSol was satisfied that contaminated material was removed to the furthest extent practicable and requested that NYSDEC give the site a "closed" status. The excavation was backfilled with clean soil. The tank closure report, **Excavation of USTs and Contaminated Soil**, was prepared to document tank and soil removal and testing and was submitted to NYSDEC on Feb. 3, 2004. A copy of the report is included as Attachment 3 of

Appendix C, Site Characterization Plan. NYSDEC has stated that formal certification of the tank closure will be provided with approval of the final remedial report.

3.4 Utility Trench

In December 2003 a seven-foot deep T-shaped trench was encountered in the south portion of the small garage/storage building (Bldg. 3). The trench was constructed from brick and block. The location of the trench is shown on **Sheet 2-1**. A substantial amount of water was in the bottom of the trench, but no piping or other material was found. Analysis of a sample of the water determined that it was not hazardous and a permit to discharge the water into the Town of Tonawanda sewer system was obtained in January 2004. According to the permit (#569-S), approximately 15,000 – 20,000 gallons was discharged. A sketch of the trench dimensions, laboratory data and discharge permit are provided in **Attachment 4**. The trench was backfilled with clean soil during the demolition phase of the site closure.

3.5 Asbestos Survey and Removal

A survey of potential asbestos-containing material was completed by LiRo-Kassner, Inc. in February 2004. Sources of friable ACM included pipe insulation (Photo 4), furnace gaskets and debris. Asbestos abatement was performed by Peerless Environmental Control, Inc. under a subcontract to Braasch. A total of 80 pounds of asbestos-containing material was removed from the structures on site prior to demolition. The materials were sent to the BFI Landfill in Niagara Falls for final disposal. The asbestos survey has been included as **Appendix D**. Documentation associated with the asbestos abatement and disposal is available for review at the Town of Tonawanda Technical Support Department.

3.6 Waste Removal

Prior to building demolition, all removable solid and liquid waste including any hazardous materials, drums, paints, oils, and propane tanks, were containerized and collected for disposal by Clean Harbors Environmental Services Inc. Transformer carcasses and PCB electrical equipment were removed form the site by ESG. A total of 22 potential PCB transformers and electrical equipment were sampled. Analytical results from one transformer, T-1, indicated a concentration above the TOSCA acceptable limit. This transformer was disposed by ESG at Environmental Recycling in Bowling Green, Ohio. The disposal manifest for Transformer T-11 is provided as **Attachment 5**.

3.7 Demolition

Demolition of site buildings was performed in March 2004 (Photos 6 – 8). Three structures, including the main manufacturing building and concrete footer (~25,000 sft), a large wooden storage building (~6,400 sft) and a brick garage/storage building (1,400 sft), were demolished. The demolition materials, which consisted of brick, metal, wood, concrete and miscellaneous debris, were either scrapped for recycle or disposed in the Tonawanda Landfill. Approximately 4,500 tons of demolition debris was hauled to the landfill for disposal by Braasch Construction. In addition, two feet of contaminated soil was removed below building footprints. No basements or crawlspaces were encountered during building demolition. The pre-demolition investigation sample results were used to determine the depth of soil to be removed in order to meet the site clean up objectives.

3.8 Site Characterization Plan

A soil sampling and analysis program was implemented subsequent to demolition in order to confirm that the contaminated soil found during the pre-demolition site investigation was properly removed to meet criteria for the intended reuse of the site. A **Site Characterization Plan (or Remedial Action Work Plan)**, which detailed these activities, was prepared for the Town of Tonawanda by EnSol in March 2004. The **Site Characterization Plan** included the following:

- Field screening and limit-of-excavation sampling in areas where buildings were located
- Soil and groundwater sampling to characterize the site conditions outside of building perimeters
- Preparation of a final report that includes tabulated analytical results, laboratory data and a figure showing all sample locations.

A copy of the **Site Characterization Plan** has been included as **Appendix C**.

4.0 Sampling and Analysis Plan

4.1 Field Screening and Limit-of-Excavation Sampling

The objective of the field screening and sampling of the material was to confirm that the contaminated soil had been removed to the degree acceptable to the NYSDEC and DOH for the proposed end use and to document the environmental conditions at the site prior to putting the property back in service. A representative of EnSol, Inc. performed the field screening and limit-of-excavation soil sampling between March 15 and March 22, 2004. After building demolition was complete and the debris was removed, approximately two to three feet of suspected contaminated soil was excavated from the building footprints to depths indicated on the plans, based on the results of the pre-demolition site investigation. Braasch Construction excavated and hauled the soil to the Town of Tonawanda landfill for final disposal.

The in-situ material under the buildings was then screened using a PID. A total of 38 PID readings were taken and recorded on PID Logs, which are provided as **Attachment 6**. The field screening was performed on a 25-foot grid and the material was excavated to a depth such that the readings were less than 50 ppm. The locations of the field screening are indicated on **Figure 2 – Sample Location Plan**. All PID readings were found to be below 50 ppm.

The limit-of-excavation samples were taken on an approximate 50-foot grid as depicted on **Figure 2**. A total of eleven (11) limit-of-excavation composite samples were taken within the building footprints (see sample locations, **Figure 2**). Each sample consisted of five (5) grab samples collected after the removal of approximately two feet of material, as described above. Each composite sample was then placed into a glass sample jar for analysis. After the samples were taken, building footprint areas were backfilled with two feet of No. 2 Crusher Run stone to the finish grade of 605' (Photo 11). The stone was obtained from LaFarge's Niagara County quarry.

The limit-of-excavation samples were sent to PSC Analytical Services and analyzed for RCRA 8 Metals, Total Volatile Organics (8021 STARS list) and Semi-Volatile Organics (8270 STARS list). In addition, one sample (S5 TCLP) was analyzed using the Toxicity Characteristic Leaching Procedure (TCLP) for RCRA 8 Metals. Laboratory data is provided in **Attachment 7 – Analytical Results**. All results were compared to TAGM (Technical Administrative Guidance Memorandum) 4046 soil cleanup objectives and are summarized in **Table 1 – Initial Surface Soils Sample Analysis.**

Samples S1 through S11 contained levels of semi-volatile contaminants and metals that exceeded TAGM 4046 cleanup levels:

- Benzo(a)anthracene, Benzo(a)pyrene and Dibenzo(a,h)anthracene were present in all samples except S4 and S9.
- Benzo(b)fluoranthene was present in S1 – S3, S5, S8, S10 and S11.
- Chrysene was present in S1 – S3, S5, S6, S8, S10 and S11.
- Benzo(k)fluoranthene was present in S1, S2, S5, S8, S10 and S11.
- Chromium was present in S1 – S11.
- Arsenic was present in S1 – S3.
- Mercury was present in S4 and S11.
- Cadmium was present in S2.

This type of contamination is typical of former brownfield sites that were used for metalworking and manufacturing activities.

4.2 Soil and Groundwater Sampling

A sampling and analysis program was developed in order to characterize the sub-surface site conditions outside of areas impacted by manufacturing activities i.e., outside the building and tank footprint areas. The **Site Characterization Plan** (Section 4.0) proposed collection of five soil boring samples and installation of three groundwater monitoring wells.

Quality Assurance/Quality Control

Quality assurance (QA) and quality control (QC) measures were employed to ensure that the data collected from the site be of sufficient known quality for the use for which the data are obtained. USEPA's SW-846 (*Test Methods for Evaluating Solid Waste Physical/Chemical Methods*) was used to provide guidance for the sampling that was performed at the site. Field QC measures included calibration of equipment, field sampling protocols, sample handling, and project documentation (i.e., field records, boring logs, chain-of-custody, etc.). Laboratory QC measures included appropriate sample holding times, project documentation, analysis of duplicate samples, analytical blanks and matrix spikes. Both laboratories that were used (Paradigm Environmental Services and PSC Environmental Services) have current ELAP certifications. Adherence to these procedures assures that the quality of the analytical data is acceptable. Therefore, the determination of remedial measures for the site can be made with confidence.

Soil Borings

On April 6, 2004 representatives of EnSol, Inc. and Zebra Environmental installed seven borings at the site. The number of borings was modified in the field by a representative of NYSDEC (Kevin Glaser), who observed all field activities. The boring locations are depicted on **Figure 2 - Sample Location Plan**. A representative of EnSol noted all boring locations, documented material from the borings, and monitored the material with the PID. A boring log was prepared for each location (see **Attachment 8**).

Thirteen samples were taken from the seven soil borings at the site at predetermined depths as requested by the NYSDEC. Each sample was placed into a glass sample container and sent to PSC Analytical Services for analysis. The samples were analyzed for RCRA 8 Metals and Semi-Volatile Organics (8270 STARS list). All results were compared to TAGM 4046 soil cleanup objectives and are summarized in **Table 2 – Soil Boring Sample Analysis**. Laboratory data is provided in **Attachment 7 - Analytical Results**.

Following review of the data by the involved parties, additional samples were taken on April 21 at Areas 8 and 9 to provide a broader characterization of the upper two feet of soil at the site. The samples were analyzed for RCRA 8 Metals.

The following samples contained levels of semi-volatile contaminants and metals above the TAGM 4046 cleanup levels:

- Benzo(a)anthracene was present in GW-1, SB-2A, SB-3A, SB-4A, SB-5A, SB-5C, SB-5D and SB-7A.
- Benzo(b)fluoranthene, Chrysene and Dibenzo(a,h)anthracene were present in SB-2A, SB-3A, SB-4A, SB-5A, SB-5C, SB-5D and SB-7A.
- Benzo(k)fluoranthene was present in SB-2A, SB-3A, SB-4A, SB-5A, SB-5D and SB-7A.

- Benzo(a)pyrene was present in SB-2A, SB-2B, SB-3A, SB-4A, SB-5A, SB-5D, SB-7A and SB-7B.

Levels of RCRA 8 Metals exceeded the cleanup objectives in all samples except SB-6A. Chromium, the most pervasive of these, was found at levels ranging from 18.0 ppm in SB-4B to 510.0 ppm in SB-5B. Levels of cadmium, mercury and arsenic exceeded the cleanup objectives in the majority of samples.

Monitoring Wells

On April 6, 2004 representatives of EnSol, Inc. and Zebra Environmental installed three monitoring wells at the site. The wells were installed to a depth of 12' below grade. Each well was constructed of one-inch diameter Schedule 40 PVC and was fitted with a 10' 0.010" slotted screen. A representative of EnSol noted all monitoring well locations, documented material from the monitoring well borings, and monitored the material with the PID. A boring log was prepared for each location (see **Attachment 8**). One soil sample was taken from location GW-1 and was analyzed for RCRA Metals, Total Volatile Organics (8021 STARS list) and Semi-Volatile Organics (8270 STARS list).

Groundwater was encountered at wells GW-1 and GW-2. Groundwater was found at well GW-3 but at a level too low to obtain a laboratory sample. Water levels were calculated using the elevation of the top of the casing (TOC) and the depth to water from the top of the well casing. Water elevations are tabulated below:

Well	TOC Elev.	Depth to water	GW Elev.
GW-1	608.41	4.9	603.5
GW-2	607.40	9.1	598.3
GW-3	606.86	10.9	596.0

Two water samples were collect from well locations GW-1 and GW-2. Sample GW-1 was analyzed for RCRA 8 Metals and Total Volatile Organics (8021 STARS list) and Sample GW-2 was analyzed for RCRA 8 Metals, Total Volatile Organics (8021 STARS list) and Semi-Volatile Organics (8270 STARS list). The results were compared to NYSDEC TAGM 4046 Soil cleanup objectives to protect GW quality and are summarized in **Table 3 – Groundwater Sample Analysis**. Laboratory data is provided in **Attachment 7 - Analytical Results**.

5.0 Interim Remedial Measures – Additional Excavation

EnSol prepared an Interim Remedial Measures (IRM) report, which was submitted to Mr. Dan King of NYSDEC on May 21, 2004. The IRM presented the data that was collected after demolition and removal of site structures and equipment (described above in Section 2.5), and proposed additional excavation of material based on this data, specifically the elevated levels of semi-volatile compounds and RCRA 8 metals detected in the samples from zero to two feet deep.

In order to characterize the material for disposal at the Town of Tonawanda Landfill, additional sampling was performed. On May 24, 2004, additional samples were collected from Areas 4, 5, 7, 8 and 9. Each sample was a composite of five grab samples taken from the upper two feet of soil. The samples were analyzed using the Toxicity Characteristic Leaching Procedure (TCLP) for RCRA 8 Metals. The results are summarized in **Table 4**. Test results indicated that the material meets the criteria for disposal at the Town of Tonawanda Landfill. Laboratory data is provided in **Attachment 7 – Analytical Results**.

The IRM was reviewed and approved by NYSDEC in a letter dated June 8, 2004, which stated that the proposed additional excavation and placement of two feet of clean fill in areas 4, 5, 7, 8 and 9 would sufficiently remediate the site. The TCLP data indicates that the fill material remaining in areas 5 and 7 at depths of three to ten feet "is not a characteristic hazardous waste . . ."

A second IRM letter to NYSDEC, dated June 11, 2004, was prepared as a supplement to the May 21 IRM letter. It documented the removal of two feet of soil from the areas indicated on **Figure 3 - Additional Excavation Areas**, which was based on the TCLP analysis. The IRM also outlined several measures to be included in the final remedial report to ensure the integrity and appropriateness of the interim remedial actions. These measures include the following, which are discussed in detail below:

- Soil Management Plan (SMP)
- Institutional Controls (Deed Restrictions)
- Site Reporting Requirements

The IRM letters and NYSDEC approval are included in **Attachment 9** - Correspondence.

6.0 Final Remediation

Additional excavation of material was performed between June 10 and June 15, 2004. A two-foot thick layer of soil was removed from site areas 4, 5, 7, 8 and 9 - indicated on **Figure 3**. Approximately 3,124 tons of material from the site was disposed at the Town of Tonawanda landfill. Disposal manifests are on file at the Town of Tonawanda Technical Support Department.

The excavated areas (4, 5, 7, 8 and 9) were then backfilled to the finish grade of 605' with certified soil material obtained from Town of Tonawanda landfill stockpiles (Photos 12 and 13). Three samples of the backfill material were analyzed in order to confirm that it was suitable for use at the Woodward Avenue site. The samples were analyzed for TCLP RCRA 8 Metals, Total Volatile Organics (8021B STARS) and Semi-Volatile Organics (8270C STARS). Laboratory analytical data is provided in **Attachment 7**.

Due to compaction of the stone from hauling operations, additional soil was placed within the footprint of the frame storage building to a depth of approximately six inches. The areas that were backfilled with soil material were top coated with a 2" layer of compost, also obtained from Town sources. The compost was then covered with a layer of hay mulch. Photos 14, 15 and 16 depict final site conditions.

All soil removal, transport and backfill was performed by Donald J. Braasch Construction, Inc., excavation contractor. A representative of EnSol observed all site activities. Monitoring well GW-2, located within the proposed excavation area, was not damaged. Backfill activities were completed on June 25, 2004. Final elevations, which verify the thickness of the stone and soil cover, are shown on the topographic survey completed by the Town of Tonawanda, provided as **Sheet SR-1**, Soil Replacement Summary. A final Topographic and Boundary Survey by TVGA (Map No. 58921) is included as **Sheet 1 of 1**. The property boundary survey is also presented on the sheet. The Proposed Legal Description of the property is included with the survey.

As stated above, DEC reviewed and agreed with the plan to excavate the upper two feet of material. The groundwater data (Table 3) shows that metals contamination is not present in the groundwater. DEC concluded, "analysis of groundwater samples from site monitoring wells suggests that no leaching from the fill is occurring." Migration of residual contamination off-site is not of concern. The site will not contribute to future groundwater contamination in the area. Therefore, a groundwater monitoring program is not required for final site closure.

7.0 Response to NYSDEC comments

NYSDEC accepted the **Site Characterization Plan** (March 2004) and presented several comments in a letter dated May 11, 2004. These comments are addressed as follows:

1. Sample quality assurance and quality control procedures were performed in accordance with EPA SW-846, *Test Methods for Evaluating Solid Waste Physical/Chemical Methods*. Laboratory QA/QC measures are available from PSC Analytical Services and Paradigm Environmental Services upon request. PSC Analytical Services' ELAP certification number is 10756. Paradigm Environmental Services' ELAP certification number is 10958.
2. The disposal manifest for Transformer T-11 is provided as **Attachment 5**.
3. Information regarding the depth of the limit-of-excavation samples and the type of sampling has been incorporated into *Section 2.4 Field Screening and Limit-of-Excavation Sampling.*

8.0 Long-Term Site Management

As evidenced by the sampling and analysis, a two-foot cover of clean fill material would provide appropriate remediation of the site for the intended future use. As outlined in the Interim Remedial Measures to NYSDEC, the following measures will ensure the integrity and appropriateness of the remedial actions.

8.1 Institutional Controls

The property at 303 Woodward Avenue has been remediated by the Town of Tonawanda and Erie County under a Voluntary Cleanup Agreement (Site #V00685-9, Index #B9-0648-03-10) with the New York State Department of Environmental Conservation (NYSDEC). Finalization of the Agreement requires the imposition of institutional controls regarding future use of the property in consideration of contaminants that will remain on site subsequent to remediation. These institutional controls consist primarily of deed restrictions specifically prohibiting the use of the property for anything other than commercial/industrial activities without an express written waiver from the NYSDEC. In addition, the use of groundwater as a source for potable or industrial water without NYSDEC approval and proper treatment is strictly prohibited.

Additional provisions associated with the protecting the integrity of the remedial actions at the site include the Soils Management Plan and Site Reporting Requirements generally outlined in the following paragraphs.

8.2 Soils Management Plan

The remedial alternative selected for the voluntary cleanup at 303 Woodward Avenue included the placement of a two-foot layer of stone over the building footprint areas and a two-foot layer of clean soil over the remaining portions of the site that needed remediation. The purpose of the stone/soil cover was to eliminate potential exposures to original site soils that contain contaminants at levels below hazardous criteria. These contaminants include RCRA metals and semi-volatile compounds.

Future use of the site should preclude, wherever possible, excavation or disturbance of the remedial cover. Should any excavation be required where the depth of excavation exceeds two feet, a soils management plan would be required to minimize the risk of exposures, contaminant migration and to ensure proper soil disposal. The soils management plan must be submitted to the NYSDEC for approval prior to excavation. A soils management plan would include the following (as a minimum):

- The use of personal protective equipment by excavation workers to prevent exposures,
- The implementation of runoff control techniques,
- The implementation of dust monitoring and control techniques,
- Contingency plans for encountering suspected hazardous waste,
- The implementation of decontamination techniques for excavation equipment,
- Minimum of one foot of cover (clean fill, asphalt, soil) for excavated material that remains on site,
- Sample collection, and analysis, at a NYSDEC approved laboratory for soils destined for off-site disposal,

- Soil transportation and disposal at an appropriate NYSDEC approved landfill as dictated by soil sample results,
- Provisions for the restoration of the remedial cover to original pre-disturbance condition.

8.3 Site Reporting Requirements

To verify adherence to the stipulations and criteria in place for the reuse of 303 Woodward Avenue, an annual report must be prepared by the property owner and submitted to the NYSDEC Region 9 office. The annual report shall provide information on compliance with the soil management plan and stone/soil cover maintenance provisions as stated above. The report should include any soil sample results completed in the preceding year, along with a description of any soil disturbance and cover restoration conducted as part of the reuse of the site.

9.0 Engineer's Certification

I certify that the remedial activities at 303 Woodward Avenue were completed in accordance with the Department-approved Site Characterization Plan (Remedial Action Work Plan) and were personally witnessed by me or by a person under my direct supervision.

EnSol, Inc.

John B. Battaglia, P.E. 9/28/04

New York State PE License Number 070389 Date

FIGURES

BY PJC DATE 1/29/04

CHKD. BY _____ DATE _____

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Environmental Solutions
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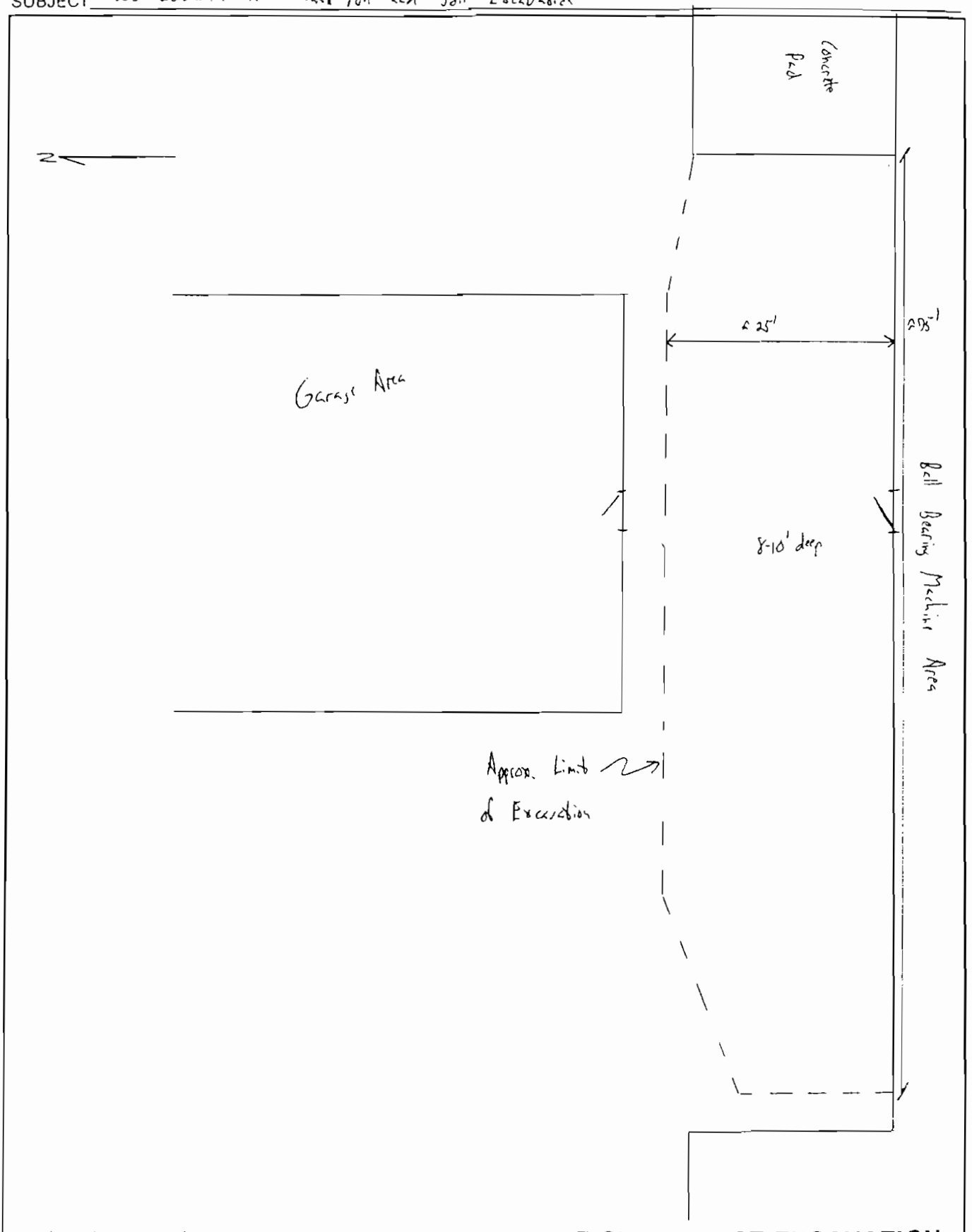
JOB NO. Q12833

SHEET NO. 1 OF 1

SUBJECT 303 Woodward Ave - Tank Pull and Soil Excavation



Note - Drawing Not to Scale

FIGURE 1 UST EXCAVATION

LEGEND

B–1 – LOCATION OF SOIL BORINGS AND SAMPLES (PREVIOUS INV.)

W–1 – LOCATION OF WIPE SAMPLES (PREVIOUS INV.)

T–1 – LOCATION OF SWITCH AND TRANSFORMER OIL SAMPLES (PREVIOUS INV.)

F–1 – LOCATION OF FURNACE BRICK SAMPLES (PREVIOUS INV.)

SB–5 SOIL BORINGS (7)

S xS4 LIMIT OF EXCAVATION SAMPLES (11)

W GW–3 MONITORING WELL / BORING (3)

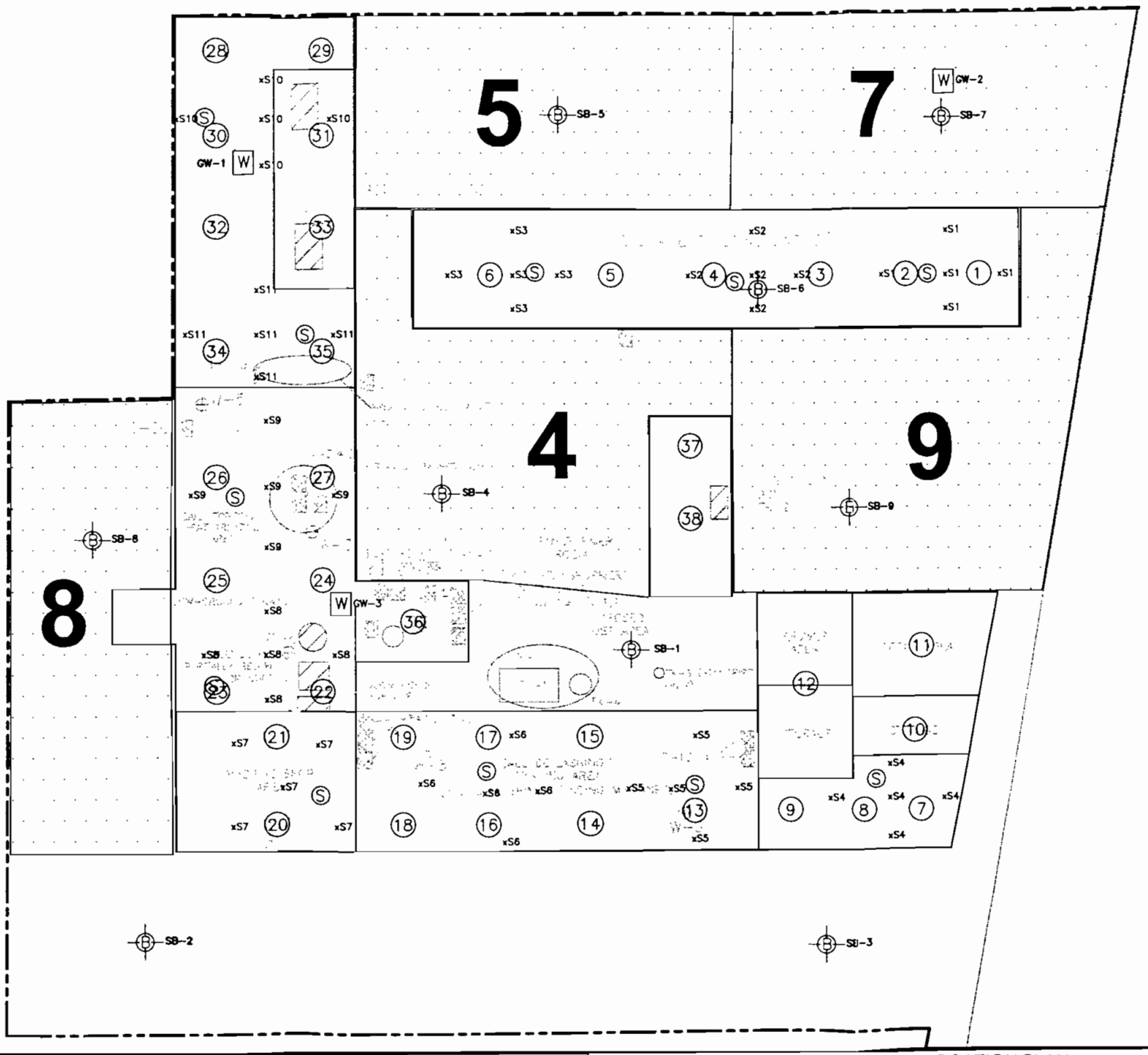
PROPERTY BOUNDARY

(6) PID MONITORING POINT (38)

8 ADDITIONAL EXCAVATION AREAS

NOTES

1. MOVED ONE WELL LOCATION GW–3.
2. MOVED ONE SOIL BORING LOCATION (SB–4).
3. ADDED TWO SOIL BORINGS (SB–6 & SB–7).



REVISION	BY	
ADDED THE MONITORING WELL LOCATIONS ADDED THE SOIL BORING LOCATIONS	RFR	4/15/04
ADDED SAMPLE LOCATIONS SB-8 and SB-9	RFR	5/20/04

EnSol, Inc.
Environmental Solutions
452 THIRD STREET
NIAGARA FALLS, NY 14301
PHONE (716) 285-3920 FAX (716) 285-3928

PROJ. NO.	04-0008
SCALE	NTS
DWG.	SITE PLAN.DWG
CHECKED BY	
DATE	03/10/04

TITLE: SAMPLE LOCATION PLAN

PROJECT: SITE INVESTIGATION / REMEDIATION - 303 WOODWARD AVE.

PREPARED FOR: TOWN OF TONAWANDA

TOWN OF TONAWANDA | COUNTY OF ERIE

STATE OF NEW YORK

FIGURE 2

CONTACT UNDERGROUND
FACILITIES PROTECTION
ORGANIZATION (UFPO)
BEFFORE DIGGING
1 800 962-7962

EXCAVATION AREAS			
NO.	DEPTH (FT)	AREA (FT^2)	VOL. (YD^3)
4	2	8,361	620
5	2	6,710	497
7	2	7,855	582
8	2	6,385	472
9	2	8,921	660
		38,232	2,831

LEGEND

CONC MON	CONCRETE MONUMENT	TREE NAME	DECIDUOUS TREE
PK	NAIL	TREE NAME	CONIFEROUS TREE
REBAR	REBAR	TRAFFIC MH	TRAFFIC MANHOLE
IP	IRON PIPE	MH	UNKNOWN MANHOLE
HUB AND TACK	HUB AND TACK	CBR	ROUND CATCH BASIN
	GROUND SHOT (HARD)	CB	CATCH BASIN
	GROUND SHOT (SOFT)	STORM MH	STORM MANHOLE
UP	UTILITY POLE	SAN MH	SANITARY MANHOLE
UP/L	UP/L	CO	CLEANOUT
GUY	GUY WIRE	TBOX	TELEPHONE BOX
H'D	HYDRANT	ELEC BOX	ELECTRIC BOX
WM	WATER METER	POST	POST
WV	WATER VALVE	SIGN	TWO POST SIGN
GLM	GASOLINE MARKER	SIGN	ONE POST SIGN
GM	GAS METER	DEL.	DELINEATOR
GV	GASOLINE VALVE	MB	MAILBOX
BUSH NAME	DECIDUOUS BUSH	LP	ONE HEAD LIGHT POLE
BUSH NAME	CONIFEROUS BUSH	LP	TWO HEAD LIGHT POLE
C	CONCRETE	LP	THREE HEAD LIGHT POLE
BT	ASPHALT (BITUMINOUS)	CBM	CABLE MARKER
GR	GRAVEL	FG	FINISH GRADE

No.	DATE	DESCRIPTION	BY	CHK

town of tonawanda
Technical Support Dept.
Municipal Building Rm. 20
2919 Delaware Avenue
Kenmore, NY 14217

303 WOODWARD AVE. BUILDING DEMOLITION ADDITION EXCAVATION

DESIGNED: JBJ	SCALE	F.B.	PAGE
DRAWN BY: GPJ	HOR. 1"=20'		
CHECKED: JBJ	VERT.	DATE: April 22, 2004	
APP'D: JBJ	SHEET No. B-1	JOB No. 2651	

FIGURE 3

TABLE 1

303 Woodward Avenue
Initial Surface Soils Sample Analysis

Contaminant	TAGM 4046 Rec. Soil Cleanup Objective (ppm)	EPA Method	Sample Results (ppm)										
			S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11
STARS Volatiles													
Benzene	0.06 or MDL	8021	0.002	0.002	0.002	< MDL	0.002	< MDL	0.002	0.001	0.002	0.001	0.001
Ethylbenzene	5.5	8021	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	0.001	0.001	< MDL	< MDL	< MDL
Toluene	1.5	8021	0.004	0.007	0.005	0.009	0.003	0.003	0.005	0.002	0.005	0.008	0.003
Mixed Xylenes	1.2	8021	0.003	0.003	0.004	0.003	0.002	0.002	0.005	0.006	0.008	0.006	0.005
Isopropylbenzene	2.3	8021	< 0.002	< MDL	< MDL	< 0.002	< MDL	< MDL	0.002	0.002	< MDL	< MDL	< MDL
n-Propylbenzene	3.7	8021	< 0.002	< MDL	< MDL	< 0.002	< MDL	< MDL	0.002	0.004	< MDL	0.002	0.001
p-Isopropyltoluene	10.0	8021	< 0.002	< MDL	< MDL	< 0.002	< MDL	< MDL	0.003	0.006	0.001	0.001	< MDL
1,2,4 - Trimethylbenzene	10.0	8021	0.004	0.002	0.003	0.008	0.002	0.002	0.014	0.056	0.012	0.011	0.010
1,3,5 - Trimethylbenzene	3.3	8021	< 0.002	< MDL	0.001	0.002	< MDL	< MDL	0.005	0.005	0.004	0.003	0.003
n-Butyl-Benzene	10.0	8021	< 0.002	< MDL	< MDL	< 0.002	< MDL	< MDL	0.003	0.003	< MDL	< MDL	< MDL
sec-Butyl-Benzene	10.0	8021	< 0.002	< MDL	< MDL	< 0.002	< MDL	< MDL	0.002	0.002	< MDL	< MDL	< MDL
Tert-Butyl-Benzene	10.0	8021	< 0.002	< MDL	< MDL	< 0.002	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
Naphthalene	13.0	8021	0.018	0.003	0.002	< 0.002	0.002	0.001	0.003	0.046	0.003	0.006	0.004
Methyl-Tert-Butyl-Ether (MTBE)**	0.12	8021	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
STARS Semi-Volatiles													
Anthracene	50.00	8270	0.24	0.43	0.17	< 0.12	0.12	< 0.12	< 0.12	0.26	< 0.12	< 0.12	< 0.12
Acenaphthene	50.00	8270	< 0.14	0.17	< 0.14	< 0.14	< 0.14	< 0.14	< 0.14	0.16	< 0.14	< 0.14	< 0.14
Benzo(a)anthracene	0.22 or MDL	8270	0.78	3.80	1.20	< 0.10	0.60	0.27	0.24	0.72	< 0.10	0.34	0.36
Benzo(b)fluoranthene	0.22 or MDL	8270	0.72	1.70	0.42	< 0.08	0.59	< 0.08	< 0.08	0.80	< 0.08	0.27	0.30
Benzo(k)fluoranthene	0.22 or MDL	8270	0.67	1.50	0.20	< 0.08	0.45	< 0.08	< 0.08	0.65	< 0.08	0.23	0.26
Benzo(g,h,i)perylene	50.00	8270	0.51	1.20	< 0.21	< 0.12	0.43	< 0.12	< 0.12	0.62	< 0.12	0.13	0.20
Benzo(a)pyrene	0.06 or MDL	8270	0.72	1.40	0.31	< 0.10	0.58	< 0.10	< 0.10	0.81	< 0.10	0.25	0.35
Chrysene	0.40	8270	0.99	6.10	1.90	< 0.08	0.95	0.41	0.30	0.92	< 0.08	0.45	0.47
Dibenzo(a,h)anthracene	0.01 or MDL	8270	0.16	< 0.44	< 0.17	< 0.10	0.17	< 0.10	< 0.10	0.18	< 0.10	< 0.10	< 0.10
Fluoranthene	50.00	8270	1.30	1.90	0.53	< 0.12	0.80	< 0.12	0.14	1.50	< 0.12	0.59	0.72
Fluorene	50.00	8270	0.13	0.16	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	0.26	< 0.08	< 0.08	< 0.08
Indeno(1,2,3-cd)pyrene	3.20	8270	0.57	1.00	0.27	< 0.12	0.50	< 0.12	< 0.12	0.62	< 0.12	0.17	0.20
Phenanthrene	50.00	8270	1.70	2.60	0.95	0.08	0.66	0.14	0.20	1.60	< 0.06	0.53	0.78
Pyrene	50.00	8270	1.90	6.90	1.80	0.12	1.30	0.26	0.33	2.20	< 0.08	0.66	0.93
RCRA 8 Metals		SW 846											
Mercury	0.1	7471	0.06	0.08	0.04	0.13	0.07	< MDL	< MDL	0.05	< MDL	0.08	0.13
Arsenic	7.5 or SB	6010	23.00	80.00	19.00	5.70	5.80	5.30	6.10	5.60	5.40	6.00	7.00
Barium	300 or SB	6010	130.00	190.00	120.00	130.00	130.00	120.00	170.00	170.00	160.00	120.00	120.00
Cadmium	1 or SB	6010	0.55	1.40	0.70	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
Chromium	10 or SB	6010	22.00	32.00	24.00	25.00	27.00	22.00	27.00	33.00	28.00	25.00	21.00
Lead	200 - 500***	6010	81.00	330.00	75.00	39.00	55.00	17.00	16.00	18.00	15.00	55.00	31.00
Selenium	2 or SB	6010	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
Silver	SB	6010	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL

Shaded entries are above the TAGM 4046 Recommended Soil Cleanup Objectives

**Methyl t-butyl ether (MTBE) is not a target compound of Methods 8021 and 8270, but MTBE may be determined using these methods with the appropriate quality assurance and quality control methods

*** Background lead levels in metropolitan or suburban areas can typically range from 200-500 ppm.

SB = Site background

< MDL = less than PSC Method Detection Limit

Analysis performed by PSC Analytical

303 Woodward Avenue
Soil Boring Sample Analysis

Contaminant	TAGM 4046 Rec. Soil Cleanup Objective (ppm)	TAGM 4046 Soil cleanup objectives to protect GW quality (ppm)	EPA Method	Soil Sample Results (ppm)																	
				GW-1	SB-2A	SB-2B	SB-3A	SB-3B	SB-4A	SB-4B	SB-5A	SB-5B	SB-5C	SB-5D	SB-6A	SB-7A	SB-7B	SB-8A	SB-8B	SB-9A	SB-9B	SB-5 TCLP
				Sample Depth	Sample Depth	Sample Depth	Sample Depth	Sample Depth	Sample Depth	Sample Depth	Sample Depth	Sample Depth	Sample Depth	Sample Depth	Sample Depth	Sample Depth	Sample Depth	Sample Depth	Sample Depth	Sample Depth	Sample Depth	Composite of SB-5A through SB-5D
				8'	0-4"	2'	0-4"	2'	0-4"	2'	0-4"	2'	7'	10'	3'	0-4"	2'	0-4"	2'	0-4"	2'	
STARS Volatiles																						
Benzene	0.06 or MDL	0.06	8021	< 0.080																		
Ethylbenzene	5.5	5.5	8021	< 0.080																		
Toluene	1.5	1.5	8021	0.110																		
Mixed Xylenes	1.2	1.2	8021	< 0.080																		
Isopropylbenzene	2.3		8021	< 0.080																		
n-Propylbenzene	3.7		8021	< 0.080																		
p-Isopropyltoluene	10.0		8021	< 0.080																		
1,2,4 - Trimethylbenzene	10.0		8021	< 0.080																		
1,3,5 - Trimethylbenzene	3.3		8021	< 0.080																		
n-Butyl-Benzene	10 0		8021	< 0.080																		
sec-Butyl-Benzene	10.0		8021	< 0.080																		
Tert-Butyl-Benzene	10.0		8021	< 0.080																		
Naphthalene	13.0	13	8021	0.096																		
Methyl-Tert-Butyl-Ether (MTBE)**	0 12		8021	< 0.080																		
STARS Semi-Volatiles				*GW-1*	*SB-2A*	*SB-2B*	*SB-3A*	*SB-3B*	*SB-4A*	*SB-4B*	*SB-5A*	*SB-5B*	*SB-5C*	*SB-5D*	*SB-6A*	*SB-7A*	*SB-7B*					
Anthracene	50.00	700.0	8270	5.00	0.14	< 0.12	0.89	< 0.12	2.40	< 0.12	0.21	< 0.12	0.20	0.31	< 0.12	0.16	< 0.12					
Acenaphthene	50.00	41.0	8270	< 2.00	< 0 14	< 0.14	0 39	< 0 14	0.50	< 0.14	< 0.14	< 0.14	< 0.14	< 0.14	< 0.14	< 0.14	< 0.14					
Benzo(a)anthracene	0.22 or MDL	3.0	8270	51.00	0.99	0.16	3.90	< 0.10	17.00	< 0.10	1.30	< 0.10	0.37	0.57	< 0.10	0.79	0.14					
Benzo(b)fluoranthene	0.22 or MDL	1.1	8270	< 2.00	1.40	0.14	4.30	< 0.08	14.00	< 0.08	1.60	< 0.08	0.36	0.48	< 0.08	0.94	0.09					
Benzo(k)fluoranthene	0.22 or MDL	1.1	8270	< 2.00	0.92	0.11	2.90	< 0.08	13.00	< 0.08	1.20	< 0.08	0.21	0.27	< 0.08	0.63	< 0.08					
Benzo(g,h,i)perylene	50.00	800.0	8270	< 2.50	1.00	< 0.10	2.30	< 0.10	7.10	< 0.10	1.10	< 0.10	0.17	0.26	< 0.10	0.63	< 0.10					
Benzo(a)pyrene	0.06 or MDL	11.0	8270	< 2.50	1.00	0.12	3.60	< 0.10	15.00	< 0.10	1.40	< 0.10	0.23	0.33	< 0.10	0.72	0.10					
Chrysene	0.40	0.4	8270	< 0.12	1.30	0.17	4.30	< 0.12	18.00	< 0.12	1.60	< 0.12	0.49	0.86	< 0.12	1.00	0.18					
Dibenzo(a,h)anthracene	0.01 or MDL	165,000.0	8270	< 3.00	0.37	< 0.12	0.92	< 0.12	2.90	< 0.12	0.30	< 0.12	0.08	0.17	< 0.12	0.26	< 0.12					
Fluoranthene	50.00	1,900.0	8270	8.70	2.40	0.23	7.90	< 0.10	30.00	< 0.10	2.90	< 0.10	1.40	1.60	< 0.10	1.70	0.17					
Fluorene	50.00	350.0	8270	< 3.00	< 0.12	< 0.12	0.50	< 0.12	0.80	< 0.12	< 0.12	< 0.12	0.17	0.18	< 0.12	< 0.12	< 0.12					
Indeno(1,2,3-cd)pyrene	3.20	3.2	8270	< 3.00	1.00	< 0.12	2.70	< 0.12	8.60	< 0.12	1.40	< 0.12	0.17	0.21	< 0.12	0.70	< 0.12					
Phenanthrene	50.00	220.0	8270	21.00	1.30	0.08	5.90	< 0.06	3.50	< 0.06	1.60	0.08	1.60	1.90	< 0.06	1.20	0.70					
Pyrene	50.00	665.0	8270	25.00	2.20	0.18	6.80	< 0.12	28.00	< 0.12	2.30	< 0.12	< 0.12	1.60	< 0.12	1.40	0.22					
RCRA Metals				*GW-1*	*SB-2A*	*SB-2B*	*SB-3A*	*SB-3B*	*SB-4A*	*SB-4B*	*SB-5A*	*SB-5B*	*SB-5C*	*SB-5D*	*SB-6A*	*SB-7A*	*SB-7B*	*SB-8A*	*SB-8B*	*SB-9A*	*SB-9B*	
Mercury	0.1	NA	7471	< MDL	0.14	0.15	0.16	0.04	0.29	< MDL	0.38	0.05	0.12	0.15	< MDL	0.25	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
Arsenic	7.5 or SB	NA	6010	45.0	1.2	< MDL	17.0	5.1	29.0	4.3	38.0	55.0	4.5	5.1	4.3	37.0	76.0	42.0	31.0	20.0	9.3	< MDL
Barium	300 or SB	NA	6010	6.6	150.0	140.0	150.0	140.0	170.0	100.0	54.0	29.0	210.0	250.0	95.0	90.0	230.0	220.0	500.0	140.0	120.0	2.1
Cadmium	1 or SB	NA	6010	6.2	0.6	< MDL	0.6	< MDL	2.9	< MDL	4.7	11.0	95.0	120.0	< MDL	1.5	< MDL	3.40	0.78	2.00	0.94	1.0
Chromium	10 or SB	NA	6010	180.0	32.0	< MDL	25.0	26.0	150.0	18.0	160.0	510.0	41.0	51.0	< MDL	84.0	100.0	96.00	31.00	43.00	23.00	< MDL
Lead	200 - 500***	NA	6010	270.0	69.0	11.0	260.0	14.0	4000.0	15.0	1300.0	3600.0	2700.0	3400.0	11.0	310.0	250.0	610.00	350.00	1400.00	110.00	3.5
Selenium	2 or SB	NA	6010	< 2.0	1.1	< MDL	1.3	< MDL	< MDL	< MDL	< MDL	< 2.0	8.1	7.0	< MDL	1.6	2.1	< MDL	2.50	1.00	< MDL	< MDL
Antimony	SB	NA	6010	31.0	1.2	< MDL	7.5	< MDL	120.0	< MDL	56.0	260.0	9.0	9.4	1.4	12.0	33.0					
Beryllium	0.16 (HEAST) or SB	NA	6010	< MDL	1.1	0.61	0.88	0.90	1.00	0.61	< MDL	< MDL	< MDL	0.69	0.67	< MDL	2.30					
Nickel	13 or SB	NA	6010	270.0	43.0	23.0	37.0	26.0	140.0	23.0	250.0	1000.0	64.0	77.00	25.00	180.00	140.00					
Thallium	SB	NA	6010	11 0	< MDL	< MDL	< MDL	< MDL	2.8	< MDL	6.7	13 0	< MDL	< MDL	< MDL	1.80	1.80					
Silver	SB	NA	6010	< MDL	< MDL	< MDL	< MDL	< MDL	1.40	< MDL	6 10	0 69	2.20	2.90	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL

Not Required

Not Required

Not Required

Not Required

Shaded entries are above the TAGM 4046 Recommended Soil Cleanup Objectives

**Methyl t-butyl ether (MTBE) is not a target compound of Methods 8021 and 8270, but MTBE may be determined using these methods with the appropriate quality assurance and quality control methods

*** Background lead levels in metropolitan or suburban areas can typically range from 200-500 ppm

SB = Site background

< MDL = less than PSC Method Detection Limit

Analysis performed by PSC Analytical

TABLES

TABLE 3

303 Woodward Avenue
Groundwater Sample Analysis

Contaminant	TAGM 4046 Groundwater Standards	EPA Method	Water Sample Results (ug/l)	
			GW-1-W	GW-2-W
STARS Volatile				
Benzene	0.7 ug/l	8021	< 22.0	< MDL
Ethylbenzene	5 ug/l	8021	< 22.0	< MDL
Toluene	5 ug/l	8021	< 22.0	< MDL
Mixed Xylenes	5 ug/l	8021	< 65.0	< MDL
Isopropylbenzene	5 ug/l	8021	< 22.0	< MDL
n-Propylbenzene	5 ug/l	8021	< 22.0	< MDL
p-Isopropyltoluene	5 ug/l	8021	< 22.0	< MDL
1,2,4 - Trimethylbenzene	5 ug/l	8021	< 22.0	< MDL
1,3,5 - Trimethylbenzene	5 ug/l	8021	< 22.0	< MDL
n-Butyl-Benzene	5 ug/l	8021	< 22.0	< MDL
sec-Butyl-Benzene	5 ug/l	8021	< 22.0	< MDL
Tert-Butyl-Benzene	5 ug/l	8021	< 22.0	< MDL
Naphthalene	10 ug/l	8021	< 22.0	4.7
Methyl-Tert-Butyl-Ether (MTBE)**	10 ug/l	8021	< 22.0	< MDL
STARS Semi-Volatile			***GW-1-W***	***GW-2-W***
Anthracene	50 ug/l	8270	Insufficient sample***	29.00
Acenaphthene	20 ug/l	8270		14.00
Benzo(a)anthracene	0.002 ug/l	8270		**32.00**
Benzo(b)fluoranthene	0.002 ug/l	8270		**26.00**
Benzo(k)fluoranthene	0.002 ug/l	8270		**17.00**
Benzo(g,h,i)perylene	5 ug/l	8270		**12.00**
Benzo(a)pyrene	0.002 ug/l	8270		**23.00**
Chrysene	0.002 ug/l	8270		**31.00**
Dibenzo(a,h)anthracene	50 ug/l	8270		6.60
Fluoranthene	50 ug/l	8270		**71.00**
Fluorene	50 ug/l	8270		23.00
Indeno(1,2,3-cd)pyrene	0.002 ug/l	8270		**15.00**
Phenanthrene	50 ug/l	8270		**100.00**
Pyrene	50 ug/l	8270		50.00
RCRA Metals			***GW-1-W***	***GW-2-W***
Mercury	0.3 mg/l	7471	< MDL	< MDL
Arsenic	0.025 mg/l	6010	< MDL	< MDL
Barium	1 mg/l	6010	0.30	0.12
Cadmium	0.01 mg/l	6010	< MDL	< MDL
Chromium	0.05 mg/l	6010	< MDL	< MDL
Lead	0.025 mg/l	6010	< MDL	< MDL
Selenium	0.01 mg/l	6010	**0.016**	**0.011**
Antimony	0.003 mg/l	6010	< MDL	< MDL
Beryllium	0.003 mg/l	6010	< MDL	< MDL
Nickel	N/A mg/l	6010	0.028	0.110
Thallium	0.004 mg/l	6010	< MDL	< MDL
Silver	0.05 mg/l	6010	< MDL	< MDL

Shaded entries are above the TAGM 4046 Recommended Soil Cleanup Objectives

**Methyl t-butyl ether (MTBE) is not a target compound of Methods 8021 and 8270, but MTBE may be determined using these methods with the appropriate quality assurance and quality control methods

*** Level of water in well not sufficient to provide enough water for sample

SB = Site background

< MDL = less than PSC Method Detection Limit

Analysis performed by PSC Analytical

TABLE 4

303 Woodward Avenue
Supplemental Surface Soils Sample Analysis

Contaminant	Maximum Concentration of Contaminants for TCLP *	EPA Method	Sample Results (mg/l)				
			Area 4	Area 5	Area 7	Area 8	Area 9
RCRA Metals							
Mercury	0.20	7470	< MDL	< MDL	< MDL	< MDL	< MDL
Arsenic	5.0	6010	< MDL	< MDL	< MDL	< MDL	< MDL
Barium	100.0	6010	0.91	0.41	0.72	0.43	0.66
Cadmium	1.0	6010	< MDL	< MDL	< MDL	< MDL	< MDL
Chromium	5.0	6010	< MDL	< MDL	< MDL	< MDL	< MDL
Lead	5.0	6010	< MDL	< MDL	< MDL	< MDL	< MDL
Selenium	1.0	6010	< MDL	< MDL	< MDL	< MDL	< MDL
Silver	5.0	6010	< MDL	< MDL	< MDL	< MDL	< MDL

Analysis performed by PSC Analytical

* Town of Tonawanda Landfill disposal criteria

< MDL = less than PSC Method Detection Limit

ATTACHMENTS

Attachment 1

VCP Application

2651

County of Erie

JOEL A. GIAMBRA
COUNTY EXECUTIVE

DEPARTMENT OF ENVIRONMENT & PLANNING

LAURENCE K. RUBIN
COMMISSIONER

September 24, 2003

Gerald F. Mikol, Regional Director
New York State Department of
Environmental Conservation
Region 9
270 Michigan Avenue
Buffalo, New York 14203-2999

Re: Excelsior Steel Ball Company Site
Voluntary Cleanup Program Application

Dear Mr. Mikol:

On behalf of Erie County and the Town of Tonawanda, I am pleased to submit a joint application under the Department of Environmental Conservation's Voluntary Cleanup Program. The site to be remediated is the Excelsior Steel Ball Property in the Town of Tonawanda.

This two-acre brownfield site is located at 303 Woodward Avenue in the Town of Tonawanda and has been the site of a steel ball bearing manufacturing operation for close to one hundred years. Manufacturing at the site ceased several years ago leaving behind vacant, derelict buildings and equipment. This application package describes proposed activities associated with site remediation and restoration to bring the site back into productive reuse.

The attached application should provide you with the necessary information for entry into the program. If there are any questions, please contact the County or Town as shown on the application.

Very truly yours,

Laurence K. Rubin

LAURENCE K. RUBIN

C: Hon. Ronald H. Moline, Supervisor

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

VOLUNTARY CLEANUP PROGRAM APPLICATION

NYSDEC identification no.: _____ (rev. 2/98)

Laurence K. Rubin

STATEMENT OF CERTIFICATION

WE, I, Ronald H. Moline, do hereby certify and attest that the information included in this Voluntary Cleanup Program application, including any attachments, is, to the best of my knowledge and belief, accurate and complete; and that the applicant has the necessary funds allocated to undertake the activities proposed to be implemented under this application, if approved.

Date: 9/23/03 9/24/03 Signature: Ronald H. Moline

TYPE OF VOLUNTARY AGREEMENT: Investigation _____ Remediation _____

I. SITE NAME AND LOCATION

SITE NAME (legal, common, or descriptive): EXCELSIOR STEEL BALL COMPANY
SITE LOCATION: Street or Route No.: 30 Woodward Avenue
CITY/TOWN: Tonawanda COUNTY: Erie ZIP: 14150
LATITUDE: 42°58'28.65" N LONGITUDE: 78°53'25.8" W

II. CURRENT OWNER/OPERATOR INFORMATION

Current owner's name, address, and phone no.:

EXCELSIOR STEEL BALL COMPANY
303 Woodward Avenue
Tonawanda, NY 14150

Current operator's name, address, and phone no.:

NONE

III. VOLUNTEER IDENTIFICATION

Volunteer's name, address, and phone no.:

Erie County
95 Franklin St.
Buffalo, NY 14202

Town of Tonawanda
2919 Delaware Ave.
Kenmore, NY 14217

Volunteer's contact's name, address, and phone no.:

Kenneth J Swanekamp (716) 858-6170
Robert Morris (716) 877-8805

Describe Volunteer's relationship, if any, to current owner and current operator (subsidiary, shareholder, partner, etc.). If no relationship, put "none":

NONE

IV. PROPERTY'S ENVIRONMENTAL HISTORY OVER PAST 50 YEARS

A. To the extent that existing information/studies/reports/ are readily available to the applicant attach:

- a description of the environmental history of the site which includes previous uses of the property, types of operation, chemicals used on the property, by-products or wastes produced by previous activities on-site, and a list of any orders, decrees, or other legal documents regarding violations of the Environmental Conservation Law or equivalent federal environmental statutes;
- a list of previous owners with names, last known addresses and telephone numbers (describe Volunteer's relationship, if any, to each previous owner listed. If no relationship, put "none"); and
- a list of previous operators with names, last known addresses and telephone numbers (describe Volunteer's relationship, if any, to each previous operator listed. If no relationship, put "none").

[OVER]

B. Is the site listed as Class 1 or 2 in New York State's Registry of Inactive Hazardous Waste Sites? YES ___ NO X

C. Did the volunteer generate, transport or dispose of, arrange for or cause the generation, transportation or disposal of hazardous substance on the property? YES ___ NO X

D. Is the site a treatment, storage, or disposal facility (TSDF) subject to corrective action or closure under permit or order issued under the Department's hazardous waste management regulatory ("RCRA") program? YES ___ NO X

E. Is the site a TSDF operating under interim status under the RCRA program that is subject to enforcement action leading to the issuance of an order containing a corrective action schedule? YES ___ NO X

V. INTENDED SITE USE

Briefly describe below the intended use of the site following cleanup.

SEE ATTACHED

VOLUNTARY CLEANUP PROGRAM APPLICATION

EXCELSIOR STEEL BALL COMPANY
TOWN OF TONAWANDA

Project Description

The investigation, remediation and restoration of 2.19 acres of land located at 303 Woodward Avenue in the Town of Tonawanda, Erie County, New York.

Purpose and Scope of Project

The Excelsior Steel Ball Company site is located at 303 Woodward Avenue, Tonawanda, west of Military Road in the Town of Tonawanda. (Please see Attachment 1, Location Map) The site is a former steel ball bearin manufacturing facility which dates back to 1887. Activities at the site, typical of metal working facilities, ceased in the 1990's.

The abandoned parcel is 2.19 acres in size (SBL 65.12-1-1) and is characteristic of brownfield sites in that the structures and equipment associated with the past manufacture of steel ball bearings remain on site. The buildings are in disrepair and have been condemned by the Town of Tonawanda. The property is delinquent in ta payments and the site is no longer secure, posing both a safety and fire hazard. The property is surrounded on three sides by Praxair, a major employer within the Town, and represents the only urban blight parcel in what is otherwise a significant and stable industrial/commercial corridor within the Town of Tonawanda.

Currently, there are three structures on the site. The main structure is the manufacturing facility which houses metalworking equipment, machine shop area, heat treating equipment, inventory storage, shipping and office areas. The area of the main structure is approximately 25,000 square feet. There are two auxiliary structures on site located to the north and east of the main structure. They appear to have been used for facility maintenance and storage. The auxiliary buildings are approximately 6,400 and 1,400 square feet in area.

The purpose of the project is to implement a site clean up, including building demolition, environmental investigation, remediation and restoration to accommodate reuse of the property. An environmental investigation would precede other necessary site activities to identify all, if any, environmental concerns that would require remediation. Building demolition would likely follow if it was found necessary to remove existing structures to complete a sub-surface investigation of the site. A Sub-surface investigation would include identification and sampling of any suspect underground storage tanks. Building contents would be properly disposed or scrapped for recycling wherever possible. An asbestos survey of the structures and possibly asbestos removal would be needed prior to demolition.

Specific aspects of the environmental remediation, based on the results of the site investigation, could include demolition, asbestos abatement, off-site soil disposal, on-site soil cover/containment, and off-site disposal of miscellaneous drums, transformer carcasses and possible PCB electrical equipment and asbestos containing

material. The final site remediation would also likely require the implementation of institutional controls, specifically a soils management plan and deed restriction for future use of the site.

Environmental History of the Property

The site has been inactive for several years. There are no known air emission, water discharge or underground storage tank permits issued for the site according to New York State DEC records. The site is not a listed hazardous waste site or on any EPA NPL listing. The site is located adjacent to the Praxair (Linde) facility in the Town of Tonawanda and, as such, has been investigated by the US Department of Energy for possible radioactive surface contamination originating from the Manhattan Engineering District (MED) activities as part of the Formerly Utilized Sites Remedial Action Program (FUSRAP). A report issued by Oak Ridge National Laboratory in 1997 states that "all radionuclide concentrations and radioactivity levels found on the property are below current guidelines". There have been no other previous environmental investigations or remedial efforts initiated at the site.

Proposed Future Use of the Property

As stated previously, the site is located in an industrial/commercial corridor within the Town of Tonawanda with a number of established firms located adjacent and near the property. The future use of the site could only be projected to be commercial/industrial in nature.

Current adjacent property owners include Praxair, which surrounds the Excelsior Steel Ball Company site on three sides, to the north, west and south. East of the site is a Niagara Mohawk R.O.W. paralleling an active rail R.O.W. The nearest residential area is to the east of Military Road, approximately one-quarter mile from the site.

Investigative and Remedial Activities

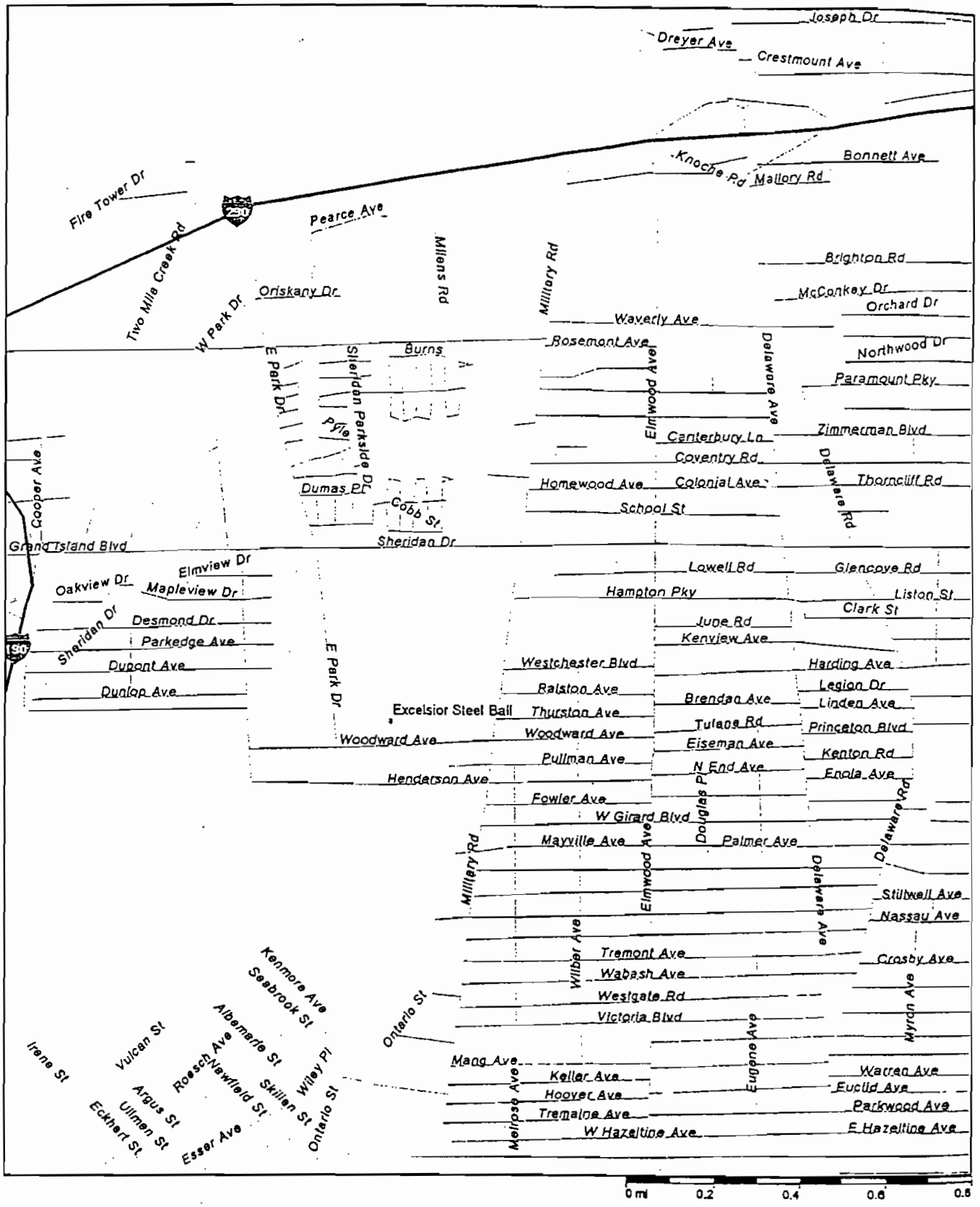
The objectives of the proposed investigation include the identification of any potentially hazardous or contaminated site debris, materials or soils to expedite the remedial process. An environmental consultant will be secured to develop a remedial investigative work plan. A walkover will be completed to identify any building materials, equipment, soils, or product/feedstock remnants that may be hazardous, contaminated or contain asbestos. An investigative sampling plan will include, at a minimum, surface and subsurface soils, drum contents, transformer carcasses, roofing, siding, insulation, window glazing, and the contents of one underground and one above ground storage tank. A review of the sample analytical results will provide guidance for proper disposal of the buildings and contents.

The initial focus of the remedial program will entail decontamination, if necessary, and disposal of building contents. Once any suspect hazardous or contaminated building contents have been removed and disposed off site, information from the asbestos survey will allow for building demolition. Demolition will likely be required as part of the site investigation to complete characterization of any sub-surface areas of concern. Any underground storage tank removal will also be incorporated into the building demolition/site investigation phase.

The removal of the structures on site will allow for subsequent sampling of surface and subsurface soils. This final sampling phase will determine the disposal or containment requirements for the on-site soils for closure.

The objectives of the remedial activities will be to complete a site cleanup that will minimize the potentia for exposure to site contaminants subsequent to site closure. Soils that are found to be hazardous will be excavated and removed for off site disposal at a licensed hazardous waste disposal facility. The final phase of the site cleanup will likely include the removal and/or cover/containment of any remaining non-hazardous contaminated soils. Clean soils would likely be stockpiled on site for use as cover or in site redevelopment.

Finally, the site remediation will likely require the implementation of institutional controls including deed restrictions to insure commercial/industrial use of the site along with a soil management plan to protect the soil cover and eliminate exposure to site contaminates for future site workers.



Microsoft Automap

Streets Plus

Excelsior Steel Ball
Tonawanda, New York

EXHIBIT 1

Excelsior Steel Ball Company
303 Woodward Avenue
Tonawanda, NY 14150
Paul B. Kranz, P.E. (716) 858-7897

April 15, 2003

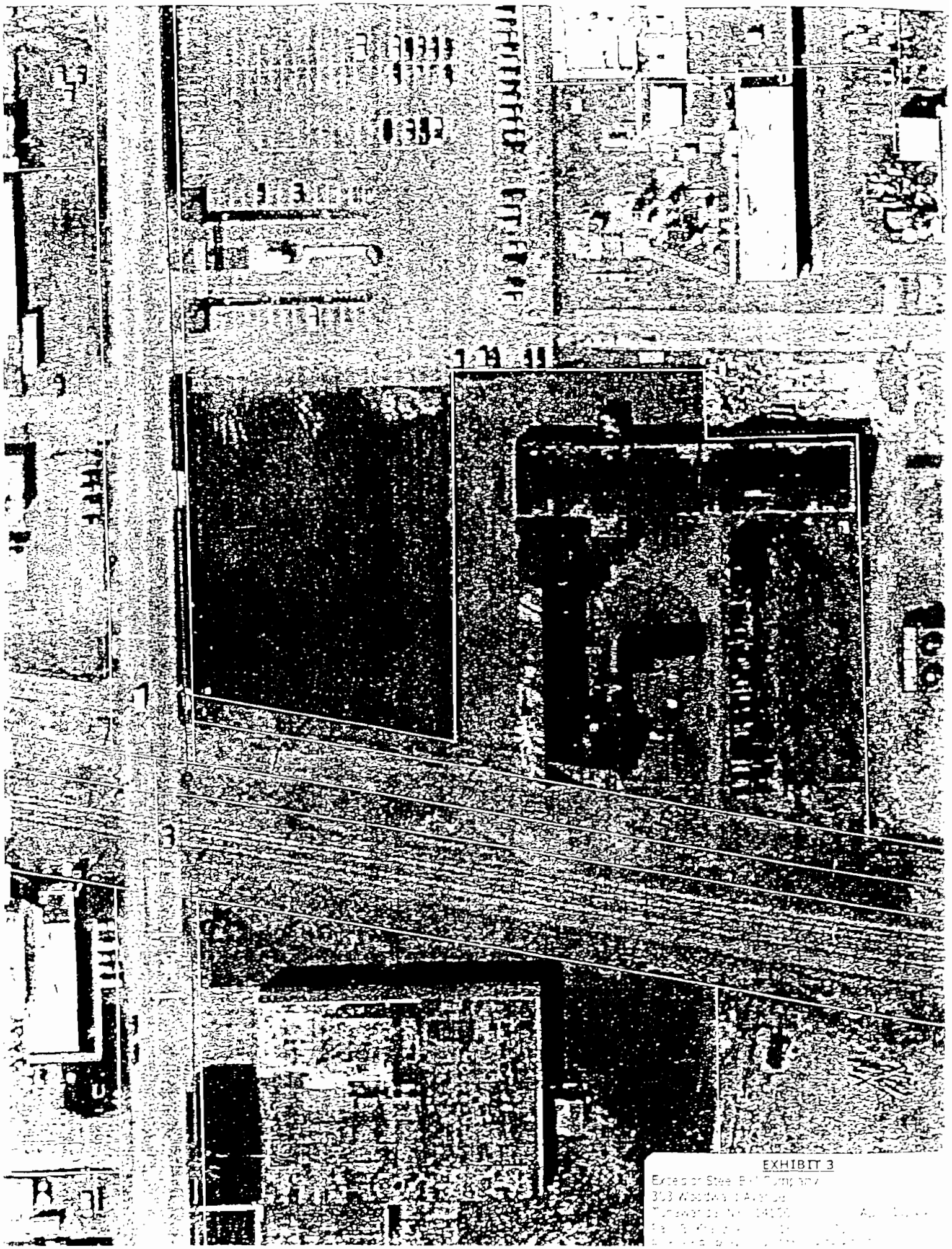


EXHIBIT 3

ornl

ORNL/RASA-97/11

OAK RIDGE
NATIONAL
LABORATORY

LOCKHEED MARTIN

Results of the Radiological Survey of the Excelsior Steel Ball Company, Tonawanda, New York (TNY005)

S. P. McKenzie
K. S. Brown

MANAGED AND OPERATED BY
LOCKHEED MARTIN ENERGY RESEARCH CORPORATION
FOR THE UNITED STATES
DEPARTMENT OF ENERGY

ORNL/RASA-97/11

LIFE SCIENCES DIVISION

Department of the Army - Corps of Engineers
(Activity No. W0M11202; DAG)

Results of the Radiological Survey of the Excelsior Steel Ball Company, Tonawanda, New York (TNY005)

S. P. McKenzie and K. S. Brown

Report Issued -July 1998

Investigation Team
R. D. Foley – Measurement Applications and Development Manager
S. P. McKenzie – Survey Team Leader

Survey Team Members

R. C. Gosslee	D. E. Rice
V. P. Patania	D. A. Roberts

Work performed by the
MEASUREMENTS APPLICATIONS AND DEVELOPMENT GROUP

Prepared by the
OAK RIDGE NATIONAL LABORATORY
Oak Ridge, Tennessee 37831-6285
managed by
LOCKHEED MARTIN ENERGY RESEARCH CORP.
for the
U. S. DEPARTMENT OF ENERGY
under contract DE-AC05-96OR22464

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ACKNOWLEDGMENTS

This project was sponsored by the Office of Environmental Restoration, U.S. Department of Energy, under contract DE-AC05-84OR21400 with Martin Marietta Energy Systems, Inc., and DE-AC05-96OR22464 with Lockheed Martin Energy Research Corp. The authors wish to acknowledge the contributions of R. L. Coleman, M. E. Murray, R. E. Rodriguez, V. P. Patania and M. S. Uziel of the Measurement Applications and Development Group, Oak Ridge National Laboratory, for sample preparation and participation in the analyses, editing, and reporting of data for this survey.

ABSTRACT

At the request of the U.S. Department of Energy (DOE), a team from Oak Ridge National Laboratory conducted two radiological surveys of property belonging to the Excelsior Steel Ball Company, which is surrounded on three sides by the former site of the Linde Uranium Refinery, Tonawanda, New York. The surveys were performed in September 1997 and February 1998. The purpose of the first survey was to determine if radioactive residuals were present from previous activities at the former Linde site. The Linde Air Products Division of Union Carbide Corporation, Tonawanda, New York, had used radioactive materials at that location for work performed under government contract from 1942 through 1948. The purpose of the second survey was to collect additional biased samples from an area of the site where biased sample results showed slightly elevated levels of thorium-232.

The surveys were performed in response to the DOE's Formerly Utilized Sites Remedial Action Program (FUSRAP) requirements. These requirements dictate that the radiological status of certain vicinity properties shall be assessed and documented according to prescribed procedures prior to certification of the property for release for unrestricted use. Such release can only be granted if the property is found to be within current applicable authorized limits.

The first survey included a surface gamma scan in accessible areas inside and outside the buildings, and the collection and radionuclide analysis of soil samples. The second survey included collection and analysis of seven additional biased samples and a piece of terra-cotta roofing material. A comparison of these data to the current DOE guidelines shows that all radionuclide concentrations and radioactivity levels found on the property are below the current guidelines. Therefore, this property should not be included in the FUSRAP program for remediation.

Results of the Radiological Survey of the Excelsior Steel Ball Company, Tonawanda, New York (TNY005)*

INTRODUCTION

From 1942 through approximately 1948, the Linde Air Products Division of Union Carbide Corporation, Tonawanda, New York, was one of many companies performing work associated with the development of nuclear energy for defense-related projects. This work was conducted under government contract to the Manhattan Engineer District (MED) and the Atomic Energy Commission (AEC). During the first 3 years, pitchblende ore from the Belgian Congo and concentrates fiom the Colorado Plateau ore were converted to U_3O_8. A second process yielding UO_2 was conducted for about a year, and a third process, converting UO_2 to green salt (UF_4), operated during World War II and the following 2 years. Linde also developed and produced barrier material for the Oak Ridge Gaseous Diffusion Plant. Other contracts have been identified, but the exact nature of the work involved is unknown.[1]

As a result of these and similar activities, equipment, buildings, and land at some of the sites became radiologically contaminated resulting in low levels of contamination on the properties. At contract termination, sites used by contractors were decontaminated in accordance with the standards and survey methods in use at that time. Since the original assessments, radiological criteria and guidelines for the release of such sites for unrestricted use have become more stringent. In some instances, records documenting decontamination efforts cannot be found, and the final radiological conditions of the site cannot be adequately determined. As a result, the Formerly Utilized Sites Remedial Action Program (FUSRAP) was established in 1974 to identify these formerly used sites and to reevaluate their radiological status.' The radiological assessment showing the presence of radioactive residuals at the Linde site had been performed in 1978.[2]

Occasionally, nearby private and commercial properties also became contaminated through migration or redistribution of the radioactive residuals from the original site.[3] The radiological survey detailed in this report was performed under the FUSRAP program as a follow-up to earlier investigations and as a precaution to ensure that no residual radioactive materials exceeding current U.S. Department of Energy (DOE) guidelines were present on the Excelsior Steel Ball Company property. The Excelsior Steel Ball Company manufactures specialized steel ball bearings. The property is surrounded on three sides by the former Linde site.

---

*The survey was performed by members of the Measurement Applications and Development Group of the Life Sciences Division at Oak Ridge National Laboratory under DOE contract DE-AC05-84OR2 1400.

In September 1997 and February 1998, radiological surveys were conducted at the Excelsior Steel Ball Company property by personnel from Oak Ridge National Laboratory at the request of DOE. Results of that survey are presented in this report. The general location of the property in relation to the former Linde site is shown in Fig. 1.

SCOPE OF THE SURVEYS

The radiological survey of September 1997 included a surface gamma scan of accessible areas inside and outside three buildings, systematic measurements with a FIDLER (field instrument for detection of low-energy radiation) inside the buildings, a scan of accessible floor surfaces with a floor monitor probe, and a scan of less accessible areas with a beta/gamma pancake probe. Systematic and biased soil samples were collected for radionuclide analysis. Systematic samples were collected in a fixed order without regard to radiation level; biased soil samples were collected at locations of slightly elevated gamma levels. The survey of February 1998 included collection and analysis of seven additional biased samples and a piece of terra-cotta roofing material.

SURVEY METHODS

A comprehensive description of the methods and instrumentation used in this survey and in the laboratory analyses is given in *Procedures Manual for the ORNL Radiological Survey Activities (RASA) Program,* ORNL/TM-8600 (April 1987)[4] and *Measurement Applications and Development Group Guidelines,* ORNL-6782 (January 1995).[5]

A grid was established over the entire property to define the precise location of measurements and samples. Grid blocks measured ten meters by ten meters. The southwestern corner of the property was designated as 0N, 0E. A sample was then located by number of meters directly north and then directly east of the southwest corner.

GAMMA RADIATION MEASUREMENTS

Gamma radiation levels were determined using portable N d gamma scintillation meters. Because N d gamma scintillators are energy dependent, measurements of gamma radiation levels in counts per minute are normalized to pressurized ionization chamber (PIC) measurements to estimate gamma exposure rates in μR/h.

The FIDLER was used to measure the relative gamma fluence at the interior floor surface with the purpose of detecting gamma-emitting radionuclide contamination beneath floor surfaces. The FIDLER is a NaI(Tl) scintillation probe that is designed to be particularly sensitive to low-energy gamma and x-ray radiation. The sensitive volume is 5 in. in diameter by 0.0063 in. thick, and the instrument is very efficient at measuring gamma

fluence rates entering perpendicular to the entrance window. Systematic measurements in counts per 30 seconds were taken with two different instruments and then converted to counts per minute and normalized so observed values would appear to come from only a single detector.

Bicron miniscaler/ratemeters with Geiger-Mueller (GM) pancake detectors were used to detect beta-gamma radiation. Radiation levels in counts per minute (cpm) were converted to disintegrations per minute (dpm) per 100 cm^2.

Floors were surveyed with the Ludlum Model 239-1F gas flow proportional detector system ("floor monitor"), which includes a Ludlum Model 2221 scaler/ratemeter connected to a Ludlum Model 43-37 detector probe mounted on a roll-around cart. The monitor was set in the "beta" mode, where it is primarily used to detect beta radiation.

SOIL SAMPLING AND ANALYSES

Systematic soil samples were taken from the ground between and adjacent to the three buildings on the property, and biased samples were taken from an area of soil with slightly elevated gamma levels at the northwest corner of the property. Samples were analyzed by gamma spectrometry. Sampling locations are shown on Fig. 2.

SURVEY RESULTS

DOE guidelines are summarized in Table 1. Typical background radiation levels for the Tonawanda, New York, area are presented in Table 2. These data are provided for comparison with survey results presented in this section. Gamma radiation levels are presented in gross microroentgen per hour and FIDLER measurements in gross counts per minute. Similarly, background concentrations have not been subtracted from radionuclide concentrations measured in soil samples.

GAMMA EXPOSURE RATE MEASUREMENTS

Gamma exposure rates on the property generally ranged from 7 to 11 μR/h. These values are similar to typical background radiation levels in the Tonawanda area (8 to 11 μR/h, Table 2). The highest gamma exposure measurements found at four biased sampling locations ranged from 13 to 18 μR/h at the ground surface and from 11 to 13 μR/h at 1 m above the surface, and may be attributed to natural radioactive substances present in the cinders and outcroppings of slag scattered throughout the Tonawanda area.

OTHER RADIATION MEASUREMENTS

FIDLER measurements of floors in the three buildings and the scan of interior areas with a floor monitor probe and beta/gamma pancake probe showed no elevated radiation levels above background levels.

SYSTEMATIC AND BIASED SOIL SAMPLES

Systematic and biased soil sample locations are shown in Fig. 2, and results of analyses are listed in Table 3. Concentrations of ^{238}U and ^{226}Ra in surface soil (0–15 cm) ranged from 0.1 to 5.4 pCi/g and from 0.25 to 3.4 pCi/g, respectively. Because slag, cinders, and other similar materials scattered throughout the Tonawanda–Niagara Falls area contain naturally occurring radionuclides that may cause slight elevations in radionuclide concentrations, the biased samples are considered to be within typical background levels for ^{238}U and ^{226}Ra in the Tonawanda area (Table 2). Naturally occurring uranium contains roughly equal amounts of ^{226}Ra and ^{238}U.

Thorium-232 concentrations in samples taken during the survey trip of September 1997 ranged from 0.15 to 7.0 pCi/g. Sample results for biased samples B1A and B1B are 5.1 and 3.9 pCi/g, respectively. Sample results for biased samples B2A and B2B are 7.0 and 5.1 pCi/g, respectively. Sample results from the survey trip of February 1998 ranged from 1.4 to 7.3 pCi/g. The concentrations of ^{232}Th in these biased samples exceed typical background ^{232}Th levels from the Tonawanda area (Table 2), but do not exceed DOE guideline values for surface and subsurface soil when averaged over 100 m^2 in accordance with Table 1.

DEBRIS SAMPLE

A sample of terra-cotta roofing debris was taken in the vicinity of the biased sampling area on the survey trip of February 1998. Results of radionuclide analysis of the material were negligible.

SIGNIFICANCE OF FINDINGS

A survey was conducted at the request of the Department of Energy to document the radiological status of the Excelsior Steel Ball Company property, Tonawanda, New York. All radionuclide concentrations and radioactivity levels found on the property are below current guidelines. Therefore, this property should not be included in the FUSRAP program for remediation.

REFERENCES

1. U.S. Department of Energy, *A Background Report for the Formerly Utilized Manhattan Engineer District/Atomic Energy Commission Sites Program,* DOE/EV-0097, September 1980.

2. Oak Ridge Natl. Lab., *Radiological Survey of the Former Linde Uranium Refinery, Tonawanda, Nay York,* DOE/EV-005/5, UC-70, U.S. Department of Energy, Division of Environmental Control Technology, Formerly Utilized MED/AEC Sites Remedial Action Program, May 1978.

3. R. E. Rodriguez, M. E. Murray, and M. S. Uziel, *Results of the Radiological Survey at the Town of Tonawanda Landfill, Tonawanda, New York (TNY001),* ORNL/RASA-92/12, Martin Marietta Energy Systems, Inc., Oak Ridge Natl. Lab., October 1992.

4. T. E. Myrick, B. A. Berven, W. D. Cottrell, W. A. Goldsmith, and F. F. Haywood, *Procedures Manual for the ORNL Radiological Survey Activities (RASA) Program,* ORNL/TM-8600, Martin Marietta Energy Systems, Inc., Oak Ridge Natl. Lab., April 1987.

5. *Measurement Applications and Development Group Guidelines,* ORNL-6782, Martin Marietta Energy Systems, Inc., Oak Ridge Natl. Lab., January 1995.

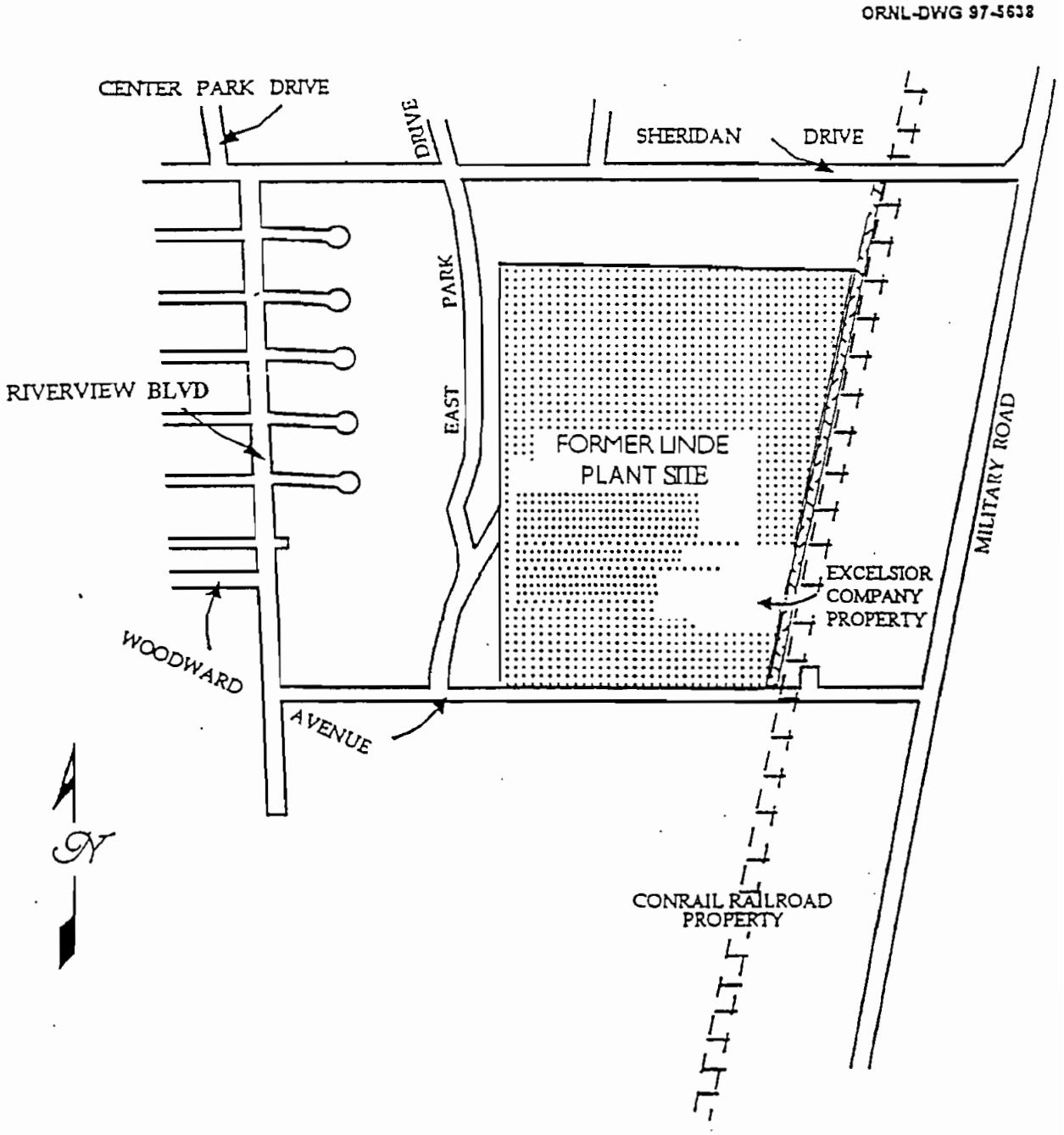
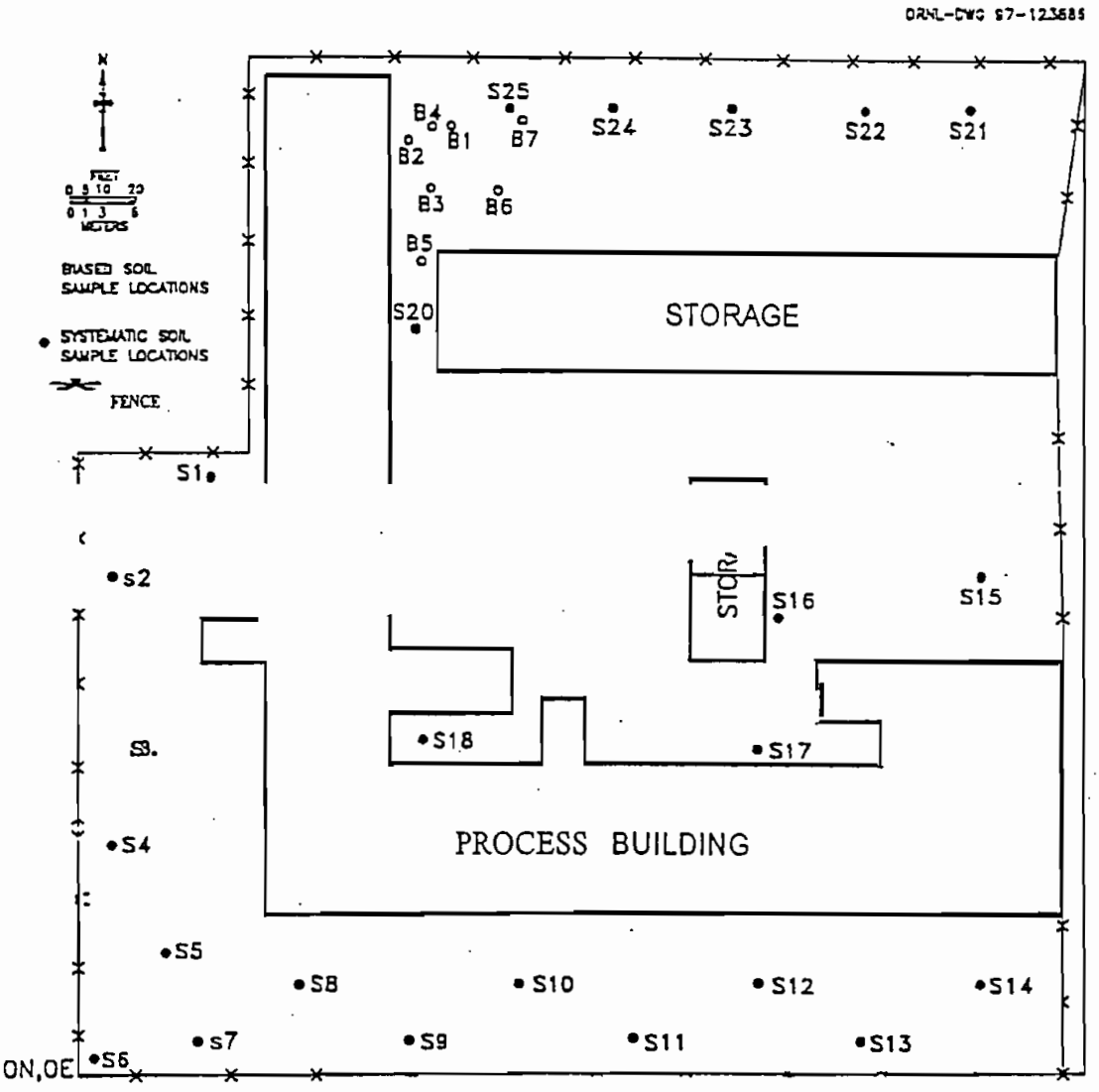


Fig. 1. Diagram showing general location of the Excelsior Steel Ball Company in relation to the former Linde site, Tonawanda, New York.



TNY005
EXCELSIOR STEEL BALL COMPANY
TONAWANDA, NEW YORK

Fig. 2. Diagram showing systematic and biased soil sampling locations on the Excelsior Steel Ball Company property.

Table 1. Applicable guidelines for protection against radiation
(Limits for uncontrolled areas)

Mode of exposure	Exposure conditions	Guideline value
Gamma radiation	Indoor gamma radiation level (above background)	20 μR/h[a]
Radionuclide concentrations in soil (generic)	Maximum permissible concentration of the following radionuclides in soil above background levels, averaged over a 100-m^2 area ^{226}Ra ^{232}Th ^{230}Th	5 pCi/g averaged over the first 15 cm of soil below the surface; 15 pCi/g when averaged over 15-cm-thick soil layers more than 15 cm below the surface
Derived concentrations	^{238}U	Site specific[b]
Guideline for non-homogeneous contamination (used in addition to the 100-m^2 guideline)"	Applicable to locations with an area ≤ 25 m^2, with significantly elevated concentrations of radionuclides ("hot spots")	$G_A = G_i(100/A)^{1/2}$, where G_A = guideline for "hot spot" of area (A) G_i = guideline averaged over a 100-m^2 area

"The 20 μR/h shall comply with the basic dose limit (100 mrem/year) when an appropriate-use scenario is considered.

[b]DOE guidelines for uranium are derived on a site-specific basis. A total uranium guideline of 60 pCi/g will be applied at the Excelsior Steel Ball Company site. This corresponds to a ^{238}U concentration of ~ 30 pCi/g.

"DOE guidelines specify that every reasonable effort shall be made to identify and to remove any source that has a concentration exceeding 30 times the guideline value, irrespective of area (adapted from *Revised Guidelines for Residual Radioactive Material at FUSRAP and Remote SFMP Sites,* April 1987).

Sources: Adapted from U.S. Department of Energy, DOE Order 5400.5, April 1990; U.S. Department of Energy, *Guidelines for Residual Radioactive Material at Formerly Utilized Sites Remedial Action Program and Remote Surplus Facilities Management Program Sites,* Rev. 2, March 1987; and U.S. Department of Energy, *Radiological Control Manual*, DOE/EH-0256T (DOE N 5480.6), June 1992.

Table 2. Background radiation levels and concentrations of selected radionuclides in soil near Tonawanda, New York

Type of radiation measurement or sample	Radiation level or radionuclide concentration	
	Range	Average
Gamma exposure rate at ground surface (μR/h)[a]	8–11	9
Concentration of radionuclides in soil (pCi/g)[a]		
^{238}U	0.8–1.1	1.0
^{226}Ra	0.7–1.1	0.9
^{232}Th	0.5–0.9	0.8

[a]Values obtained from four locations in the Tonawanda area.

Source: R. E. Rodriguez, M. E. Murray, and M. S. Uziel, *Results of the Radiological Survey at the Town of Tonawanda Landfill, Tonawanda, New York (TNY001)*, ORNL/RASA-92/12, Martin Marietta Energy Systems, Inc., Oak Ridge Natl. Lab., October 1992.

Table 3. Concentrations of radionuclides in soil samples, Excelsior Steel Ball Company, Tonawanda, New York

Sample ID[a]	Grid Location[a,b]	Depth (cm)	Radionuclide concentrations (pCi/g)[c]		
			^{238}U	^{226}Rn	^{232}Th
		Systematic samples[d]			
S1	55N, 11E	0-15	2.5 ± 0.4	1.5 ± 0.1	1.8± 0.2
s2	45N, 3E	0-15	1.5 ± 0.4	1.1 ± 0.1	1.1 ± 0.2
s3	30N, 8E	0-15	3.4± 0.5	1.4± 0.1	1.4± 0.2
s4	20N, 3E	0-15	1.6± 0.4	1.1 ± 0.1	1.0± 0.2
s5	10N, 8E	0-15	0.8± 0.2	0.6± 0.1	0.4± 0.1
S6	1N, 1E	0-15	0.8 ± 0.3	0.96± 0.1	0.66 ± 0.1
s7	3N,10E	0-15	1.3 ± 0.3	1.2± 0.1	1.2± 0.2
S8	8N, 20E	0-15	1.6± 0.3	0.9 ± 0.1	0.9± 0.1
s9	3N, 30E	0-15	1.9± 0.4	1.3 ± 0.1	1.1 ± 0.2
S10	8N, 40E	0-15	1.8± 0.4	1.2± 0.1	1.1 ± 0.1
S11	3N, 50E	0-15	1.8 ± 0.4	1.3 ± 0.1	1.2± 0.2
S 12	8N, 60E	0-15	0.72● 0.2	0.6 ± 0.1	0.4± 0.1
S13	3N, 70E	0-15	1.0± 0.3	0.6± 0.1	0.5± 0.1
S 14	8N, 80E	0-15	1.2 ± 0.3	1.0± 0.1	0.7± 0.1
S15	45N, 80E	0-15	2.2± 0.4	1.6± 0.1	1.3± 0.2
S16	40N, 60E	0-15	2.6± 0.4	1.5 ± 0.1	1.2± 0.1
S17	28N, 60E	0-15	1.9± 0.4	1.5 ± 0.1	1.0± 0.2
S18	30N, 30E	0-15	2.1 ± 0.4	1.2± 0.1	1.1 ± 0.1
S19A	44N, 35E	0-15	1.2± 0.3	1.0 ± 0.1	0.77 ± 0.1
S19B	44N, 35E	15-30	3.0± 0.4	3.0± 0.2	2.0± 0.2
S19C	44N, 35E	30-45	3.7± 0.5	3.4± 0.2	1.8± 0.2
s20	70N, 25E	0-15	1.9± 0.4	1.5 ± 0.1	1.1 ± 0.1
s21	90N, 80E	0-15	0.13± 0.2	0.25 ± 0.03	0.15 ± 0.1
s22	90N, 70E	0-15	1.9± 0.3	1.1 ± 0.1	2.4± 0.02

Table 3. Concentrations of radionuclides in soil samples, Excelsior Steel Ball Company, Tonawanda, New York

Sample ID[a]	Grid Location[a,b]	Depth (cm)	Radionuclide concentrations (pCi/g)[c]		
			^{238}U	^{226}Ra	^{232}Th
S23	90N, 60E	0-15	1.8 ± 0.4	0.87 ± 0.1	2.1 ± 0.2
S24	90N, 50E	0-15	1.4 ± 0.4	0.85 ± 0.1	1.7 ± 0.2
s25	90N, 40E	0-15	0.88 ± 0.3	0.56 ± 0.1	1.4 ± 0.1
		Biased samples[e]			
B1A	88N, 28E	0-15	4.2 ± 0.5	1.7 ± 0.1	5.1 ± 0.4
B1B	88N, 28E	15-30	3.0 ± 0.4	1.2 ± 0.1	3.9 ± 0.3
B2A	86N, 20E	0-15	5.4 ± 0.5	2.9 ± 0.2	7.0 ± 0.5
B2B	86N, 20E	15-30	4.4 ± 0.5	2.6 ± 0.2	5.1 ± 0.4
B3A	85N, 28E	0-15	6.5 ± 0.6	2.2 ± 0.1	7.3 ± 0.5
B3B	85N, 28E	15-30	4.6 ± 0.5	2.0 ± 0.1	4.2 ± 0.3
B4	88N, 29E	0-15	3.6 ± 0.5	2.2 ± 0.1	1.4 ± 0.2
B5	79N, 29E	0-15	2.9 ± 0.5	1.4 ± 0.1	2.1 ± 0.2
B6	84N, 33E	0-15	2.6 ± 0.4	1.0 ± 0.1	3.2 ± 0.3
B7A	88N, 38E	0-15	3.7 ± 0.5	1.2 ± 0.1	4.6 ± 0.3
B7B	88N, 38E	15-30	3.0 ± 0.5	1.2 ± 0.1	3.8 ± 0.3

[a]Sample locations are shown on Fig. 2.

[b]Sample location determined by number of meters north and east of southwest corner of property.

Indicated counting error is at the 95% confidence level (±2σ). Results for other radionuclides are typical of background concentrations and are not included in the table.

[d]Systematic samples are taken at locations irrespective of gamma exposure rates.

[e]Biased samples are taken from areas with elevated gamma exposure rates. Samples B1 and B2 were taken on the survey trip of September 1997. Samples B3 through B7 were collected on the survey trip of February 1998.

DISTRIBUTION

1. K. J. Brown
2. R. D. Foley
3. R. C. Gosslee
4. C. A. Johnson
5–6. S. P. McKenzie
7. M. E. Murray
8. D. A. Roberts
9. R. E. Rodriguez
10. M. S. Uziel
11–16. MAD Records Center
17. Central Research Library
18. Laboratory Records - RC

19. S. K. Arnnit, Bechtel National, Inc., FUSRAP Department, Oak Ridge Corporate Center, 151 Lafayette Drive, P.O. Box 350, Oak Ridge, TN 37831-0350
20. W. L. Beck, ORISE, E/ESD, 1299 Bethel Valley Road, Oak Ridge, TN 37831-8007
21. R. J. Gibbs, Bechtel National, Tnc., 70 Pearce Avenue, Tonawanda, NY 14150-6711
22–31. Raymond L. Pilon, CELRB-PP-PM, U.S. Army Corps of Engineers, 1776 Niagara Street, Buffalo, NY 14207-3111
32–33. W. A. Williams, Office of Environmental Restoration, Cloverleaf Bldg. (EM-421), U.S. Department of Energy, 19901 Germantown Road, Germantown, MD 20874-1290
34–35. Office of Scientific and Technical Information, U.S. Department of Energy, P.O. Box 62, Oak Ridge, TN 37831-0062

Attachment 2

Site Photographs

1 - Existing Site Conditions

2 - Existing Site Conditions

New York State Voluntary Cleanup Program Final Remedial Report 303 Woodward Avenue	SITE PHOTOGRAPHS		**EnSol Inc.** Environmental Solutions
	DRAWN BY: RR	PN: 04-0008	
Town of Tonawanda Erie County New York	SCALE: NTS	SOURCE: ECIDA	452 Third St. Niagara Falls, NY 14301 Phone (716) 285-3920 Fax (716) 285-3928
	CHKD BY:	FILE: 04-0008 303 Woodward Field Work_Work Plan_Final Report Photos\Photos_Woodward.cdr	
	DATED: 07/23/04		

3 - Existing Site Conditions

4 - ACM: Pipe Insulation

New York State Voluntary Cleanup Program Final Remedial Report 303 Woodward Avenue	SITE PHOTOGRAPHS		**EnSol Inc.** Environmental Solutions
	DRAWN BY: RR	PN: 04-0008	
Town of Tonawanda Erie County New York	SCALE: NTS	SOURCE: ECIDA	452 Third St. Niagara Falls, NY 14301 Phone (716) 285-3920 Fax (716) 285-3928
	CHKD BY:	FILE:	
	DATED: 07/23/04		

5 - Dust Particulate Meter at Site Perimeter

6 - Building Demolition

New York State Voluntary Cleanup Program Final Remedial Report 303 Woodward Avenue	SITE PHOTOGRAPHS		**EnSol Inc.** Environmental Solutions
	DRAWN BY: RR	PN: 04-0008	
Town of Tonawanda Erie County New York	SCALE: NTS	SOURCE: ECIDA	452 Third St. Niagara Falls, NY 14301 Phone (716) 285-3920 Fax (716) 285-3928
	CHKD BY:	FILE:	
	DATED: 07/23/04	04-0008 303 Woodward Field Work, Work Plan, Final Report Photos (Woodward.cdr)	

7 - Building Demolition

8 - Building Demolition

New York State Voluntary Cleanup Program Final Remedial Report 303 Woodward Avenue	SITE PHOTOGRAPHS		**EnSol Inc.** Environmental Solutions
	DRAWN BY: RR	PN: 04-0008	
Town of Tonawanda Erie County New York	SCALE: NTS	SOURCE: ECIDA	452 Third St. Niagara Falls, NY 14301 Phone (716) 285-3920 Fax (716) 285-3928
	CHKD BY:	FILE: 04-0008 303 Woodward Field Work_Work Plan_Final Report Photo's\Photos_Woodward.cdr	
	DATED: 07/23/04		

9 - Clay Layer at 2' Depth

10 - Excavation in Tank Area

New York State Voluntary Cleanup Program Final Remedial Report 303 Woodward Avenue	SITE PHOTOGRAPHS		**EnSol Inc.** Environmental Solutions
	DRAWN BY: RR	PN: 04-0008	
Town of Tonawanda Erie County New York	SCALE: NTS	SOURCE: ECIDA	452 Third St. Niagara Falls, NY 14301 Phone (716) 285-3920 Fax (716) 285-3928
	CHKD BY:	FILE: 04-0008 303 Woodward Field Work_Work Plan_Final Report Photos Entire_Woodward.cdr	
	DATED: 07/23/04		

11 - #2 Stone Backfill

12 - Soil Backfill

New York State Voluntary Cleanup Program Final Remedial Report 303 Woodward Avenue	SITE PHOTOGRAPHS		**EnSol Inc.** Environmental Solutions
	DRAWN BY: RR	PN: 04-0008	
Town of Tonawanda Erie County New York	SCALE: NTS	SOURCE: ECIDA	452 Third St. Niagara Falls, NY 14301 Phone (716) 285-3920 Fax (716) 285-3928
	CHKD BY:	FILE:	
	DATED: 07/23/04		

13 - Verification of 2' Cover Depth

14 - Final Conditions

New York State Voluntary Cleanup Program Final Remedial Report 303 Woodward Avenue	SITE PHOTOGRAPHS		**EnSol Inc.** Environmental Solutions
	DRAWN BY: RR	PN: 04-0008	
Town of Tonawanda Erie County New York	SCALE: NTS	SOURCE: ECIDA	452 Third St. Niagara Falls, NY 14301 Phone (716) 285-3920 Fax (716) 285-3928
	CHKD BY:	FILE:	
	DATED: 07/23/04	04-0008 303 Woodward Field Work Work Plan_Final Report Photos\Photos_Woodward.cdr	

15 - Final Conditions

16 - Final Conditions

New York State Voluntary Cleanup Program Final Remedial Report 303 Woodward Avenue	SITE PHOTOGRAPHS		**EnSol Inc.** Environmental Solutions
	DRAWN BY: RR	PN: 04-0008	
Town of Tonawanda Erie County New York	SCALE: NTS	SOURCE: ECIDA	452 Third St. Niagara Falls, NY 14301 Phone (716) 285-3920 Fax (716) 285-3928
	CHKD BY:	FILE:	
	DATED: 07/23/04		

Attachment 3

Court Order
Town Attorney Affidavit
Town Personnel Affirmations

FELLE, STOCKER & MARGULIS

ATTORNEYS AND COUNSELORS AT LAW

6024 MAIN STREET
WILLIAMSVILLE, NEW YORK 14221
PHONE: (716) 505-2700, EXT. 203
FAX: (716) 505-2727

WAYNE C. FELLE
KEVIN T. STOCKER
RANDY S. MARGULIS

LEGAL ASSISTANTS
AMY LENNON
JULIE VAN ERDEN
KATY ANNABLE

Jim Jones

July 15, 2004

Shelly Swarthout
TOWN OF TONAWANDA
Legal Department
1835 Sheridan Drive
Kenmore, New York 14223

Re: Town of Tonawanda, New York
v. Excelsior Steel Ball Co., Inc.
Index No.: 2003/10154

Dear Shelly:

Enclosed please find a copy of an Order signed by the Hon. Eugene Fahey on October 21, 2003 and filed in the Erie County Clerk's Office on October 29, 2003, along with a copy of an Order to Show Cause which was granted on October 16, 2003 and filed on October 15, 2003 with regard to the above referenced matter, for your records.

Respectfully,

FELLE, STOCKER & MARGULIS

Kevin T. Stocker/al

KEVIN T. STOCKER

KTS/al
Enclosures

At a term of the Supreme Court held in the City of Buffalo, New York at the courthouse located at on the day of 2003.

PAID
CHECK
OCT 10 2003
ERIE COUNTY CLERK'S OFFICE

STATE OF NEW YORK
SUPREME COURT : COUNTY OF ERIE

TOWN OF TONAWANDA, NEW YORK
2919 Delaware Avenue
Kenmore, New York 14217

Petitioner,

v.

EXCELSIOR STEEL BALL CO., INC.
303 Woodward Avenue
Tonawanda, New York 14150

Respondent.

ORDER TO SHOW CAUSE

INDEX NO.: 2003/10154/

UPON the reading and filing of the Affidavit of **KEVIN T. STOCKER, ESQ.**, sworn to on the 15th day of October 2003, it is hereby

ORDERED, that **W. CLARK TROW, ESQ.** and/or **DIANE HALL** show cause at a special term of this Court, to be held in the County of Erie, City of Buffalo, State of New York on the 24th day of October, 2003 at 9:30 in the fore/~~afternoon,~~ or as soon thereafter as counsel can be heard why the Court should not grant an Order to the Town of Tonawanda and the County of Erie granting permission for said public entities to enter onto the

(Part 28.

above captioned premises in order to test for environmental hazards and assess whether the building on said premises should be demolished and take any other action as the Town, the County of Erie and/or its contractors deem appropriate, and it is further

ORDERED, that sufficient cause appearing therefore, that service of a copy of this Order shall be made upon **W. CLARK TROW, ESQ.** by facsimile on behalf of **DIANE HALL** or any other family member of interest to the deceased on or before the _____ day of _____ _____, 2003.

Enter:

FRANK A. SEDITA, JR.

HON.

FRANK A. SEDITA, JR. For Justice Whelan

GRANTED:

GRANTED

OCT 15 2003

BY_____
DENISE S. FILOSOFOS
COURT CLERK

VOID

GRANTED

OCT 16 2003

BY CAROL M. WILLIAMS
CAROL M. WILLIAMS
COURT CLERK

JANET M. MARCHIN

Eugene M. Fahey

HON

STATE OF NEW YORK
SUPREME COURT : COUNTY OF ERIE

TOWN OF TONAWANDA, NEW YORK
2919 Delaware Avenue
Kenmore, New York 14217

ATTORNEY AFFIDAVIT

Petitioner,

v.

INDEX NO.:

EXCELSIOR STEEL BALL CO., INC.
303 Woodward Avenue
Tonawanda, New York 14150

Respondent.

KEVIN T. STOCKER, ESQ., after being duly sworn, deposes and says:

1. That I am a Deputy Attorney for the Town of Tonawanda, New York, and as such represent the Petitioner in this matter.

2. That the owner and sole shareholder of the above captioned Respondent corporation was **DAVID G. ROUGHEAD. Mr. ROUGHEAD** passed away December 17, 2001. **EXCELSIOR STEEL BALL CO., INC.** owns the premises referenced as 303 Woodward Avenue in the Town of Tonawanda, New York.

3. That said property referenced in the caption above has a severely deteriorating structure on said premises that used to serve as the corporation's manufacturing plant.

4. Based upon information and belief, the premises contains various hazardous waste materials. Furthermore, said building is in such a state of disrepair that it is economically unfeasible to repair same and has been abandoned.

5. That the family of **Mr. ROUGHEAD** decided not to commence any estate proceedings since this property was the only asset of his estate and deemed worthless given its condition, the presence of hazardous material, and the amount of back taxes that are owed.

6. That **DIANE HALL** is the daughter of the deceased, a distributee, and has no objection to the Town of Tonawanda, the County of Erie, or other contractors for said public entities, in entering onto said premises to perform environmental testing and to demolish said structure if it is deemed unsafe. (*See* Exhibit "A" annexed hereto- letter of **Ms. HALL** that was drafted by her attorney, **W. CLARK TROW, ESQ.**)

7. Annexed hereto is also sworn affirmations of opinions from **PATRICK CUNNINGHAM**, Building and Fire Inspector for the Town's Building Department, and **JAMES JONES**, Project Engineer with the Town's Technical Support Department, attesting to the property's deteriorating and unsafe condition, as well as photographs of same (*See* Exhibit "B" annexed hereto).

8. The Town respectfully seeks an Order from the Court granting it permission to enter onto its premises to conduct environmental testing, inspection of the structure on said premises and for permission to demolish same and clean up debris and any hazardous materials present if said state and/or county funding is sufficient to cover same. At the appropriate time, the County of Erie would foreclose on said property due to unpaid back taxes and transfer same into an Industrial Development Agency.

9. That the undersigned has taken the liberty of sending **W. CLARK TROW, ESQ.** copies of these papers.

10. The undersigned has annexed hereto as Exhibit "C" a proposed Order for review and signature if same meets the Court's approval.

KEVIN T. STOCKER, ESQ.

SUBSCRIBED and SWORN to before
me this _____ day of October, 2003.

_____

Notary Public

AFFIRMATION

ERIE COUNTY SUPREME COURT
Erie County Hall
92 Franklin Street
Buffalo, New York 14202

Re: ***303 Woodward Avenue***
Excelsior Steel Ball Company
Job # 2651

Dear Honorable Judge:

The following affirmation is submitted pertaining to the above-referenced matter and is sworn to under the penalty of perjury.

I, Patrick Cunningham, Building Inspector & Fire Inspector, for the Town of Tonawanda for the past 14 years do herein deem the building structures located at 303 Woodward Avenue, Town of Tonawanda, New York 14150 to be structurally unsafe for occupancy. Said framed structure has experienced significant neglect, weather damage and several fires over the years to a point where demolition is required. Annexed hereto are photographs of said premises.

Said structures have been investigated on numerous occasions for the past several years by both the Town of Tonawanda building officials and engineering staff, and the staff of the Erie County Department of Environment and Planning.

The property is in tax arrears totaling in excess of $112,000.

It is my understanding that the above referenced property has been abandoned since the sole shareholder of said corporation is deceased. Therefore, on behalf of the Town of Tonawanda, I am seeking permission on behalf of the Town to enter onto the premises in order to take necessary measures for building demolition and site restoration if funds are sufficient to perform same. Said aforementioned measures are necessary to protect the public welfare.

Respectfully submitted,

PATRICK CUNNINGHAM
Building/Fire Inspector

AFFIRMATION

ERIE COUNTY SUPREME COURT
Erie County Hall
92 Franklin Street
Buffalo, New York 14202

Re: ***303 Woodward Avenue***
Excelsior Steel Ball Company
Job # 2651

Dear Honorable Judge:

The following affirmation is submitted pertaining to the above-referenced matter and is sworn to under the penalty of perjury.

I, James B. Jones, PE, being a licensed Professional Engineer in the State of New York and a practicing Civil Engineer for the Town of Tonawanda for the past 14 years do herein deem the building structures located at 303 Woodward Avenue, Town of Tonawanda, NY 14150 to be structurally unsafe for occupancy. Said framed structures have experienced significant neglect, fire damage, and weather damage to a point where demolition is required. Annexed hereto are photographs of said premises.

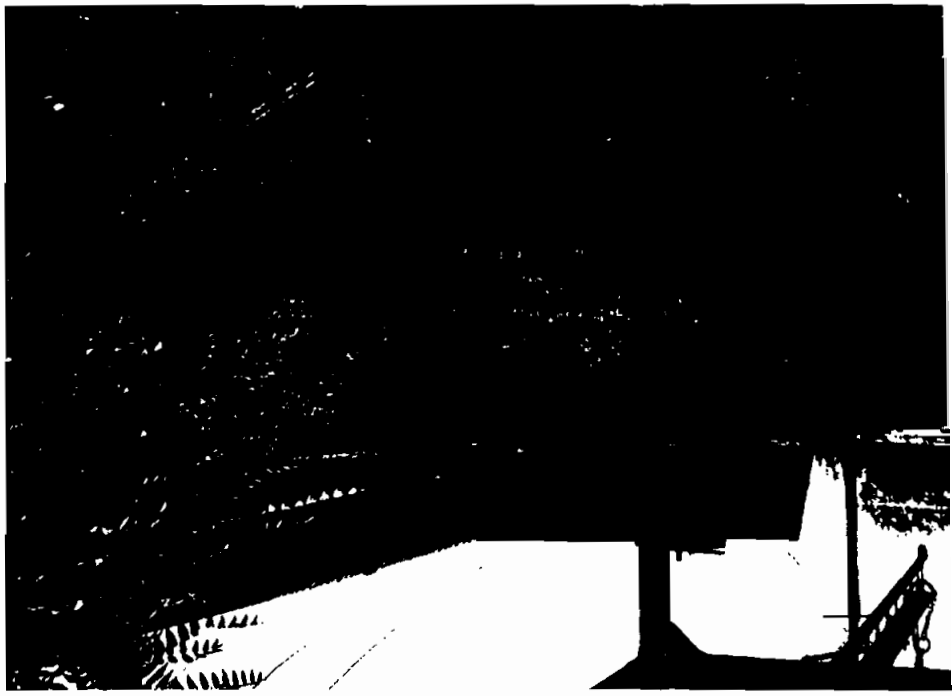
Said structures have been investigated on numerous occasions for the past several years by both the Town of Tonawanda building officials and engineering staff, and the staff of the Erie County Department of Environment and Planning.

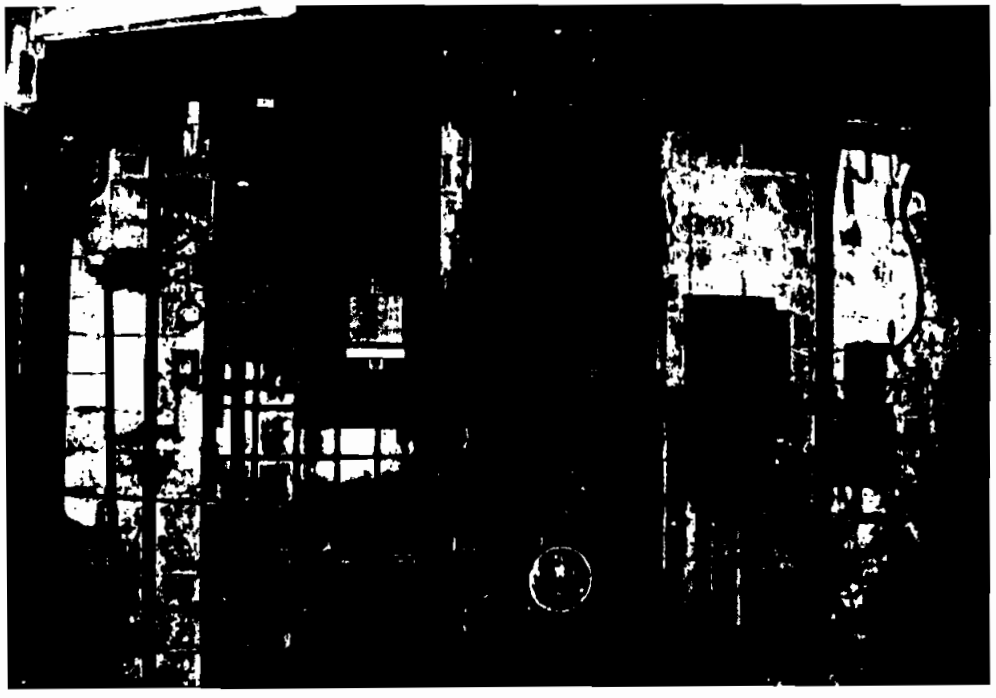
The property is in tax arrears totaling in excess of $112,000.

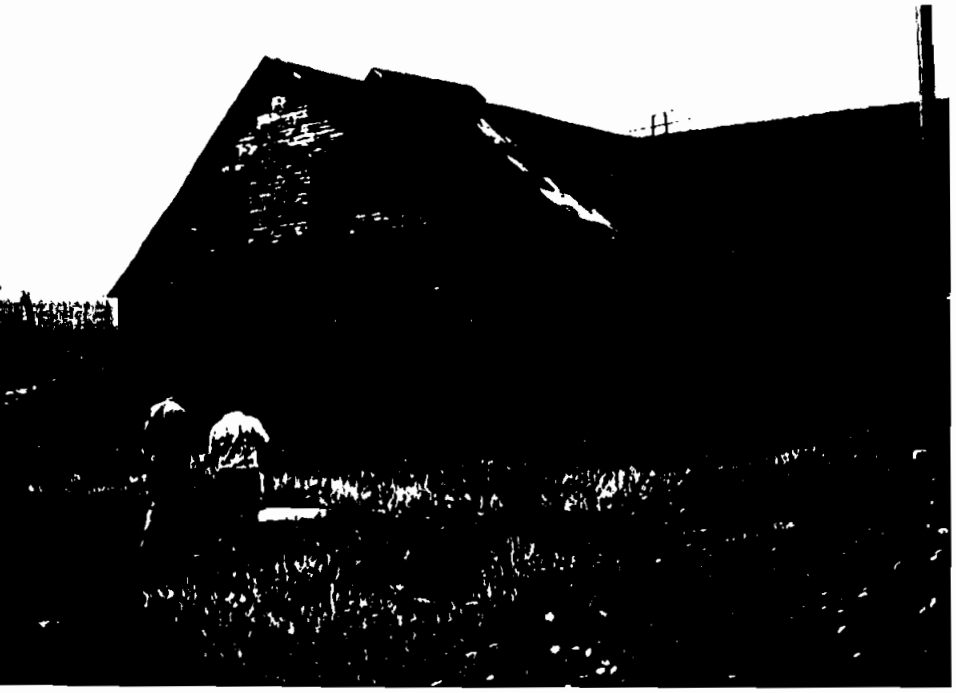
It is my understanding that the above referenced property has been abandoned since the sole shareholder of said corporation is deceased. Therefore, on behalf of the Town of Tonawanda, I am seeking permission on behalf of the Town to enter onto the premises in order to take necessary measures for building demolition and site restoration if funds are sufficient to perform same. Said aforementioned measures are necessary to protect the public welfare.

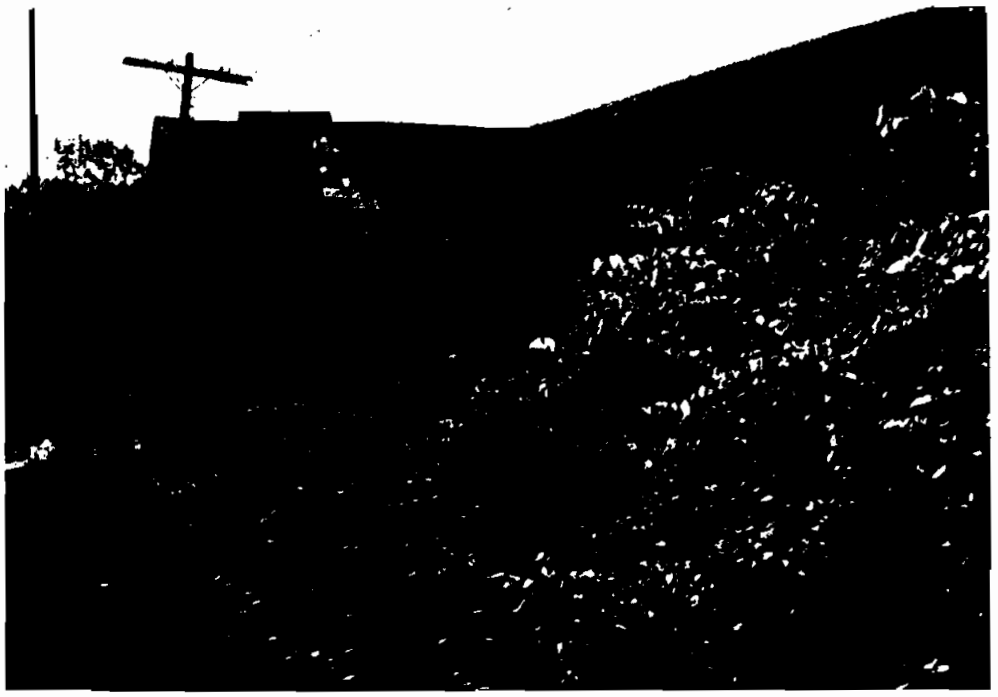
Respectfully submitted,

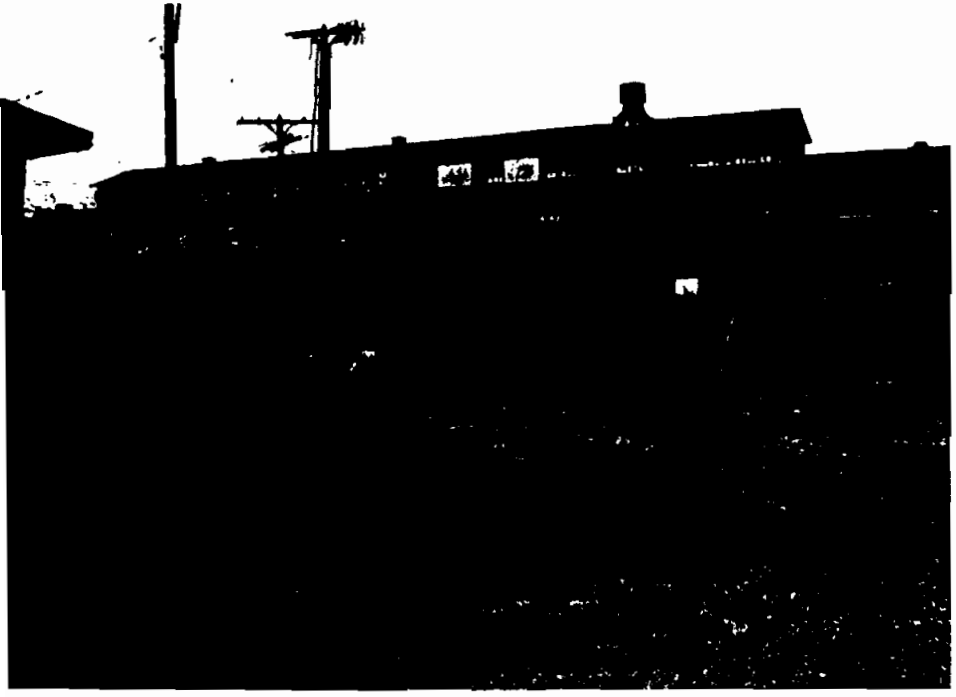
JAMES B. JONES, PE
Project Engineer











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n Date: May 11, 2002 10:42

cation Date: Jun 20, 2002 11:27

Average Scale: 1 inch = 68.8 feet

2651

At a term of the Supreme Court held in the City of Buffalo, New York at the courthouse located at on the day of , 2003.

STATE OF NEW YORK
SUPREME COURT : COUNTY OF ERIE

TOWN OF TONAWANDA, NEW YORK
2919 Delaware Avenue
Kenmore, New York 14217

Petitioner,

v.

EXCELSIOR STEEL BALL CO., INC.
303 Woodward Avenue
Tonawanda, New York 14150

Respondent.

ORDER

ERIE COUNTY CLERK'S OFFICE
FILED
10/29/03
BUFFALO, N.Y.

INDEX NO.: 2003-10154

UPON review of the Order to Show Cause submitted by the Town of Tonawanda, which includes an Affidavit from Deputy Town Attorney KEVIN T. STOCKER, ESQ., affirmations sworn to under the penalties of perjury from JAMES JONES, Town of Tonawanda Project Engineer, and PATRICK CUNNINGHAM, Building/Fire Inspector for the Town of Tonawanda Building Department, and after a date set on October 21st, 2003 for Respondents to show cause why this Order should not be granted, and that there was no opposition on said matter, it is hereby

ORDERED, that the Town of Tonawanda, the County of Erie and/or their contractors shall have authority to enter onto the premises of 303 Woodward Avenue, Town of Tonawanda to perform environmental testing, property assessment, other structural testing, demolition of said building and clean-up of any hazardous waste materials and debris if State and County funding is sufficient to perform said acts. That the aforementioned acts are necessary to protect the welfare of the residents of the County of Erie and said expenses shall be assessed against said property's tax roll.

Enter:

HON. EUGENE M. FAHEY

GRANTED:

GRANTED

OCT 21 2003

BY Carol M. Williams
CAROL M. WILLIAMS
COURT CLERK

Attachment 4

Utility Trench Documentation

BY PSC DATE 11/6/09

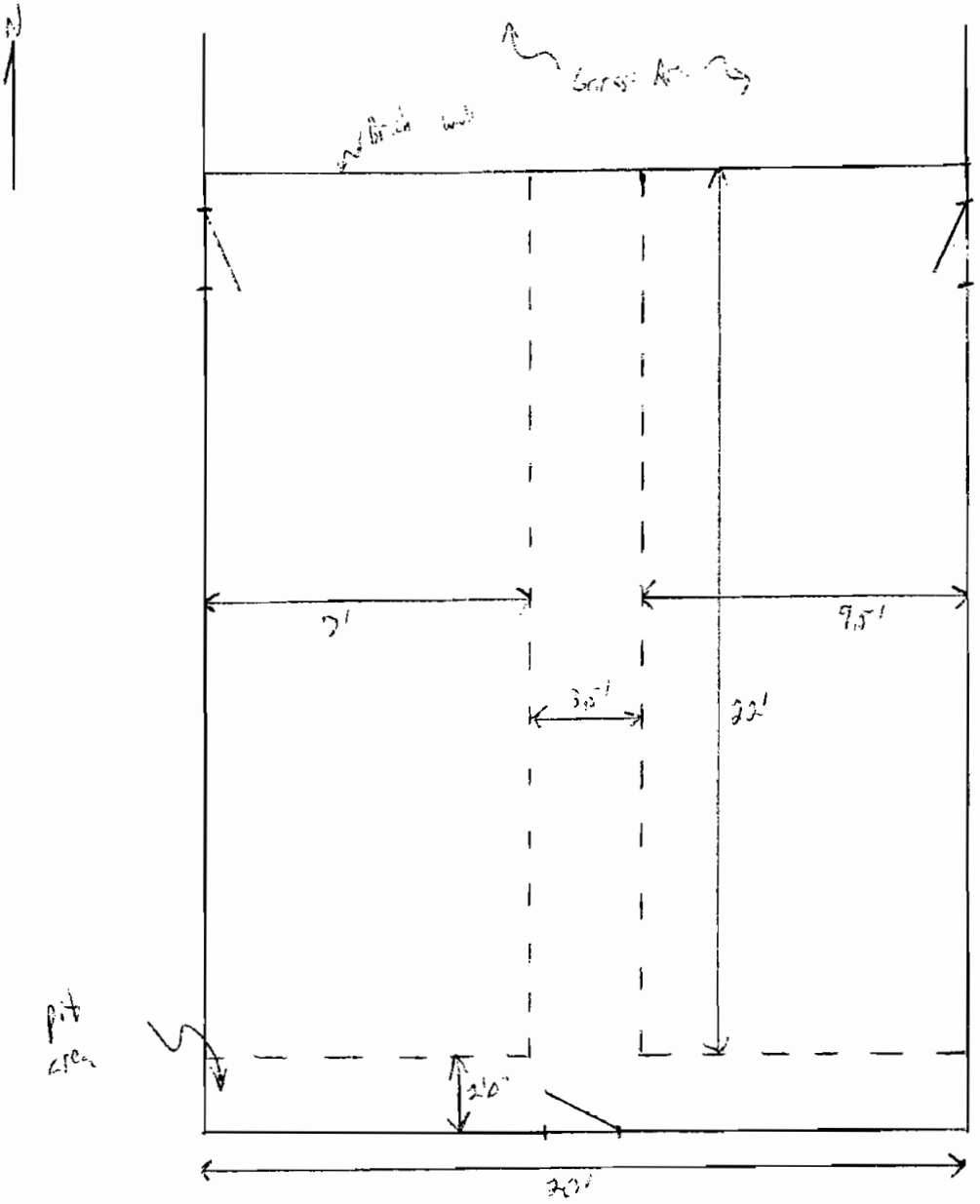
CHKD. BY _____ DATE _____

SUBJECT Woodward Ave Garage PS

EnSol, Inc.
Environmental Solutions
452 3rd Street • Niagara Falls, NY 14301
PH 716 285 3920 • FX 716 285 3928

JOB NO. _____

SHEET NO. _____ OF _____



Depth - 9'4" loss

Depth to water - 8'0½"

Tank Excavation Area

PARADIGM
ENVIRONMENTAL SERVICES, INC.

179 Lake Avenue Rochester, New York 14608 (585) 647-2530 FAX (585) 647-3311

LABORATORY REPORT OF ANALYSIS

Client: EnSol

Client Job Site: 303 Woodward Avenue
Client Job No.: 03-0037

Field Location: Sewer Pit

Lab Project No.: 03-3418
Lab Sample No.: 11172

Sample Type: Water

Date Sampled: 12/22/2003
Date Received: 12/23/2003

Parameter	Date Analyzed	Analytical Method	Result (mg/L)
Cyanide Reactivity	01/05/2004	SW846, 7.3	ND<1 Non Reactive
Sulfide Reactivity	01/05/2004	SW846, 7.3	ND<10 Non Reactive

ELAP ID. No.: 10709

Comments: ND denotes Non Detected.
Hazardous Waste Regulatory Levels for Reactivity are as follows:
Sulfide - 500 mg/kg, Cyanide - 250 mg/kg.

Approved By Technical Director: _____
Bruce Hoogesteger

Chain of Custody provides additional sample information.

File ID: Reactivity03-3418.xls

Permit No. 569-S

TOWN OF TONAWANDA

INDUSTRIAL SEWER CONNECTION PERMIT

Company Name: EnSol Inc. Environmental Solutions

Division Name (if Applicable)

Mailing Address: 452 Third Street
Street or P.O. Box
Niagara Falls, New York 14301
State and Zip Code

Facility Address: 303 Woodward Avenue
P.O. Box

Tonawanda, New York 14150
City, State and Zip Code

The above Industrial User is authorized to discharge industrial wastewater to the Town of Tonawanda sewer system in compliance with the Town's Sewer Use Ordinance Number 2-2000, any applicable provisions of Federal or State law or regulation, and in accordance with discharge point(s), effluent limitations, monitoring requirements, and other conditions set forth herein.

This permit is granted in accordance with the application filed on December 19, 2003 in the office of the Pretreatment Administrator, and in conformity with plans, specifications, and other data submitted to the Town in support of the above application.

Effective Date: January 6, 2004

Expiration Date: February 6, 2004

Permit No. 569-S

Date: 1/6/04 Signed: William Mucci

William Mucci
Town of Tonawanda
Office of the Compliance Coordinator

Permit No. 569-S

Modified Date: _____

PART 1 - WASTEWATER DISCHARGE LIMITATIONS AND MONITORING REQUIREMENTS

A. LOCALLY DERIVED LIMITATIONS

The industrial user shall comply with the following locally derived effluent limitations effective as of **January 6, 2004**

MONITORING LOCATION: **SANITARY SEWER**

Analytical Results are available in pretreatment office and meet all discharge requirements.

Discharge to the sanitary sewer only and the rate of discharge not to exceed 50 gals./min.

A $350.00 permit fee has been waived by John Camilleri.

Approximately 15,000- 20,000 gals. will be discharged.

A charge of $1.03 per thousand gallons of discharged water has been waived.

Discharge is allowed 24 hours a day.

Note: The complete list of discharge limitations for dischargers to the Town Treatment Plant is contained in the Town's Local Law 2-2000. On the basis of the application and previous monitoring, parameters deemed applicable to this discharge have been excerpted and their limitations included above. The discharger should be aware that all other limitations apply and should consider all such limitations when considering process changes or plant modifications.

PART II - SPECIAL CONDITIONS/COMPLIANCE SCHEDULE

1. *The Industrial User shall develop, within 6 months of the effective date of this permit, an accidental spill prevention plan to eliminate or minimize the accidental or slug discharge of pollutants into the sewer system, which could have an effect on the Town's treatment plant, sludge, or cause the Town to violate its SPDES permit.*

PART III - REPORTING REQUIREMENTS

1. *All Industries requiring submittal of self-monitoring reports (SMR's) must submit all laboratory results on all discharged samples. If a lab analysis was performed using an EPA approved test method, then those results must be included in the SMR.*
   Persons signing SMR's must be a responsible company official, ie; owner, corporate manager, or supervise more than two hundred fifty (250) employees. Any of the above may appoint a company representative to sign SMR's but written notice must be supplied to this office authorizing said employee to sign.

The following statement will be required on all SMR's and baseline monitoring reports (BMR):

" I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who managed the system, or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violation."

2. *The Industrial User shall notify the Town immediately upon any accidental or slug discharge to the sanitary sewer system. Formal written notification discussing circumstances and remedies shall be submitted to the Town within 5 days of the occurrence.*

3. *The Industrial User shall notify the Town 30 days prior to the introduction of new wastewater or pollutants or any substantial change in the volume or characteristics of the wastewater being introduced into the POTW from the User's industrial processes.*

4. *Any upset experienced by the Industrial User of its treatment that places it in a temporary state of non-compliance with wastewater discharge limitations contained in this permit or other limitations specified in the Town's Ordinance shall be reported to the Town within 24 hours of first awareness of the commencement of the upset. Immediate resampling for the non-compliance pollutant shall begin. A detailed report shall be filed within 5 days.*

5. *The Industrial User is required to submit to the Town reports on the results of its sampling of the pollutants specified in Part I of this Permit. This report shall also contain monthly flows.*

6. *Analytical procedures must be performed in accordance with 40 CFR Part 136. Additional pollutants not contained in Part 136 must be performed using validated analytical methods approved by EPA (40 CFR 403.12 [g] [4]).*

7. *All reports shall be submitted to the following address:*

Daniel G. O'Leary, Compliance Coordinator
Wastewater Treatment Facility
Two Mile Creek Road
Tonawanda, New York 14150

PART IV - STANDARD CONDITIONS

1. *The Industrial User shall comply with all the general prohibitive discharge standards in Article IV of the Local Law 2-2000.*

   a. *BOD 250 mg/l, SS 250 mg/l, P 6 mg/l are not to be construed as discharge limits of the above pollutants but as a baseline for generating abnormal sewer charges.*

2. RIGHT OF ENTRY

The Industrial User shall, after reasonable notification by the Town, allow the Town or its representatives, exhibiting proper credentials and identification, to enter upon the premises of the User, at all reasonable hours, for the purposes of inspection, sampling, or records inspection. Reasonable hours in the context of inspection and sampling includes any time the Industrial User is operating any process which results in a process wastewater discharge to the Town's sewerage system.

3. RECORDS RETENTION

The Industrial User shall retain and preserve for no less than three (3) years, any records, books, documents, memoranda, reports, correspondence and all summaries thereof, relating to monitoring, sampling and chemical analysis made by or in behalf of the User in connection with its discharge.

a) All records that pertain to matters that are the subject of special orders or any other enforcement or litigation activities brought by the Town shall be retained and preserved by the Industrial User until all enforcement activities have concluded and all periods of imitation with respect to any and all appeals have expired.

4. CONFIDENTIAL INFORMATION

Except for data determined to be confidential under Article VII, Section 4 of the Town's Ordinance, all reports required by this permit shall be available for public inspection at the office of the Compliance Coordinator, Wastewater Treatment Facility, Two Mile Creek Road, Tonawanda, New York 14150.

5. RECORDING OF RESULTS

For each measurement or sample taken pursuant to the requirements of this permit, the user shall record the following information:

a) The exact place, date and time of sampling;
b) The dates the analyses were performed;
c) The person(s) who performed the analyses;
d) The analytical techniques or methods used, and
e) The results of all required analyses.
f) Where sanitary sewer discharge is measured by a mechanical or electronic device, accuracy of device shall be certified correct every two years by the manufacturer. Certification shall begin September, 2004.
g) Where sanitary sewer discharge is measured by percentage of consumed water, percentage shall be certified correct every two years by a licensed professional engineer .Certification shall begin September, 2004.

6. DILUTION

No Industrial User shall increase the use of potable or process water or, in any way, attempt to dilute a discharge as a partial or complete substitute for adequate treatment to achieve compliance with the limitations contained in this permit

7. PROPER DISPOSAL OF PRETREATMENT SLUDGES AND SPENT CHEMICALS

The disposal of sludges and spent chemicals generated shall be done in accordance with Section 405 of the Clean Water Act and Subtitles C and D of the Resource Conservation and Recovery Act.

8. TOXIC SUBSTANCES

All waters shall be maintained free of toxic substances in concentrations that are toxic to or produce detrimental physiological responses in human, plant, animal, or aquatic life.

9. SIGNATORY REQUIREMENTS

All reports required by this permit shall be signed by a principal executive officer of the User, or his designee.

10. REVOCATION OF PERMIT

The permit issued to the Industrial User by the Town may be revoked when after inspection, monitoring or analysis it is determined that the discharge of wastewater to the sanitary sewer is in violation of Federal, State, or local laws, ordinances, or regulations. Additionally, falsification or intentional misrepresentation of data or statements pertaining to the permit application or any other required reporting form, shall be cause for permit revocation.

11. LIMITATIONS ON PERMIT TRANSFER

Transfer of permit. Industrial waste permits are issued to a specific user for a specific operation. In the event of any change in ownership of the industrial facility, the permittee shall notify the new owner of the existence of the permit by letter, a copy of which shall be forwarded to the Pretreatment Administrator 30 days prior to change of ownership. A new industrial waste permit must be issued to the new owner.

12. FALSIFYING INFORMATION OR TAMPERING WITH MONITORING EQUIPMENT

Knowingly making any false statement on any report or other document required by this permit or knowingly rendered any monitoring device or method inaccurate, may result in punishment under the criminal law of the Town, as well as being subjected to civil penalties and relief.

13. MODIFICATION OR REVISION OF THE PERMIT

a) *The terms and conditions of this permit may be subject to modification by the Town at any time as limitations or requirements as identified the Town's Ordinance, are modified or other just cause exists.*

b) *This permit may also be modified to incorporate special conditions resulting from the issuance of a special order.*

c) *The terms and conditions may be modified as a result of EPA promulgating a new federal pretreatment standard.*

d) *Any permit modifications which result in new conditions in the permit shall include a reasonable time schedule for compliance if necessary.*

14. DUTY TO REAPPLY

The Town shall notify a User one hundred and eighty (180) days prior to the expiration of the User's Permit. Within ninety (90) days of the notification, the User shall reapply for re-issuance of the permit on a form provided by the Town.

15. SEVERABILITY

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance is held invalid, the application of such provision to other circumstances, and the remainder of this permit shall not be affected thereby.

16. LIMITATIONS

The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any invasion of personal rights, nor any infringement of Federal, State or Local regulations.

17. A. VIOLATIONS

(1) Any violation of sections 165-3 through 165-19 of this Part 1 of Local Law 2-2000 is hereby declared a violation except as otherwise provided by law.

(2) Any person who violates the provisions of sections 165-3 through 165-19 of the Part 1, upon conviction thereof in a court of competent jurisdiction, may be punished by a fine of not more than two hundred fifty dollars ($250.), and each day on which there is a failure to comply shall be and is hereby declared to be a distinct and separate offense and punishable as such.

(3) The Town of Tonawanda may also maintain an action of proceeding in the name of the Town of Tonawanda in a court of competent jurisdiction to collect a civil penalty of not over two hundred dollars ($200.) for each violation of sections 165-3 through 165-19 of this Part 1.

(4) The Town of Tonawanda may also maintain an action or proceeding in the name of the Town of Tonawanda in a court of competent jurisdiction for injunctive relief for any violation Articles III, IV or V of this Part 1.

B. MISDEMEANORS

(1) Any violation of sections 165-20 through 165-30 of this Part 1 is hereby declared a misdemeanor except as otherwise provided by law.

(2) Any person who violates the provisions of sections 165-20 through 165-30 of this Part 1, upon conviction thereof in a court of competent jurisdiction, may be punished by a fine of not more than five hundred dollars ($500.), and each day on which there is a failure to comply shall be and is hereby deemed to be a distinct and separate offense and punishable as such.

(3) The Town of Tonawanda may also maintain an action or proceeding in the name of the Town of Tonawanda in a court of competent jurisdiction to collect a civil penalty of not over one thousand dollars ($1,000.) for each violation of section 165-20 through 165-30 of this Part 1.

(4) The Town of Tonawanda may also maintain an action or proceeding in the name of the Town of Tonawanda in a court of competent jurisdiction for injunctive relief for any violation of Article VI of this Part 1.

18. ENFORCEMENT OF THE SEWER USE LAW AND PERMITS

The Town has developed and received USEPA approval of its Enforcement Response Plan which details the standard responses to be taken by the Town when it encounters various violations of the Sewer Use Law or the terms of this permit. Copies of this document are available at the office of the Pretreatment Administrator.

Attachment 5

Disposal Manifest for Transformer T-11

NYG 2819115

DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF SOLID & HAZARDOUS MATERIALS

HAZARDOUS WASTE MANIFEST

P.O. Box 12820, Albany, New York 12212

Please type or print. Do not staple

(Hazardous Waste Manifest 1/5/99)

In case of emergency or spill immediately call the National Response Center (800) 424-8802 and the NYS Department of Environmental Conservation (518) 457-7362

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.

Manifest Doc. No.

2. Page 1 of

Information within heavy bold line is not required by Federal Law.

3. Generator's Name and Mailing Address

4. Generator's Telephone Number ( )

A. NYG 2819115

B. Generator's ID

5. Transporter 1 (Company Name)

6. US EPA ID Number

C. State Transporter's ID

D. Transporter's Telephone

7. Transporter 2 (Company Name)

8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Telephone ( )

9. Designated Facility Name and Site Address

10. US EPA ID Number

G. State Facility ID.

H. Facility Telephone ( )

11. US DOT Description (Including Proper Shipping Name, Hazard Class and ID Number)	12. Containers Number	12. Containers Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a.					EPA STATE
b.					EPA STATE
c					EPA STATE
d.					EPA STATE

J. Additional Descriptions for Materials listed Above

a

c

b

d

K. Handling Codes for Wastes Listed Above

a

c

b

d

15. Special Handling Instructions and Additional Information

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations and state laws and regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

GENERATOR

Printed/Typed Name | Signature | Mo. | Day | Year

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name | Signature | Mo. | Day | Year

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name | Signature | Mo. | Day | Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name | Signature | Mo. 11 | Day 12 | Year 04

COPY 7—Transporter Copy—Retained by Transporter

Attachment 6

PID Log

PID Log Sheet

EnSol, Inc.
452 Third Street
Niagara Falls, NY

Client:_____

PN:_____

	Location	Date	Time	PID Reading (ppm)	Comments	
25	1 stockpile	3/15/04	9:00	0.0	soil looked clean	
50	2 Storage area	3/15/04	9:00	0.0	" "	
75	3. "	"		0.0	" "	
100	4. "	"		0.0	" "	
125	5. "	"		0.0	" "	
	6 "	"		0.03	" "	
	7 office area	3/15/04		0.0	" "	
	8 office area	3/16/04		0.0	" "	
	9 "	3/16/04		0.0	" "	
	10 "	3/16/04		0.0	" "	
	11 "	3/16/04		0.0	" "	
	12	3/16/04		0.0	~~Clay sewer pipe~~ sheen on surface	
	13	~~3/16/04~~ 3/16/04		0.0	clay sewer pipe sheen on surface	
	14	3/17/04	10:15	10.4ppm	petroleum smell order	Dark stained soil
	15	3/17/04	10:45	26.00ppm	" "	
	16	3/17/04	13:50	0.1	"	
	17	3/17/04	13:52	5.5ppm	"	
	18	3/18/04	7:45	0.01		
	19	3/18/04	7:45	0.0		

EnSol, Inc.
452 Third Street
Niagara Falls, NY

Client:_____

PN:_____

Location	Date	Time	PID Reading (ppm)	Comments
20	3/18/04	10:06	1.8	Oil smell
21	"	"	1.5	" "
22	3/19/04	8:45	1.0	
23	"	8:45	0.5	
24	"	9:55	2.6	
25	"	9:55	0.7	
26	"	11:15	6.8	
27	"	11:20	0.3	
28	"	12:00	0.03	
29	"	12:00	0	
30	"	13:55	1.0	
31	"	13:55	0.03	
32	"	14:06	2.1	
33	"	14:03	1.1	
34		15:06	0.09	
35		15:12	0.03	
36		15:17	0.05	
37	3/22	9:30	0.01	
38	3/22	9:33	0.02	

Attachment 7

Analytical Results

1. Initial Surface Soils
2. Soil Borings and Groundwater Samples
3. Additional Excavation Samples (TCLP for disposal)
4. Backfill Characterization Samples

1. Initial Surface Soils

Certificate of Analysis

CLIENT INFORMATION

Attention:	John Battaglia
Client Name:	Ensol. Inc.
Project:	
Project Desc:	
Address:	452 Third Street Niagara Falls, NY 14301
Fax Number:	716-285-3928
Phone Number:	716-285-3920

LABORATORY INFORMATION

Contact:	Mike Challis, B.Sc, C.Chem.
Project:	AN031497
Date Received:	16-Mar-2004
Date Reported:	25-Mar-2004
Submission No.:	4C0586
Sample No.:	012384-012388

NOTES: *"-' = not analysed '<' = less than Method Detection Limit (MDL) 'NA' = no data available*
LOQ can by determined for all analytes by multiplying the appropriate MDL X 3.33
Solids data is based on dry weight except for biota analyses.
Organic analyses are not corrected for extraction recovery standards except for isotope dilution methods, (i.e. CARB 429 PAH, all PCDD/F and DBD/DBF analyses)
The enclosed copy of the Chain of Custody Record may contain information necessary for the interpretation of the data.

Methods used by PSC Analytical Services are based upon those found in 'Standard Methods for the Examination of Water and Wastewater', Twentieth Edition. Other methods are based on the principles of MISA or EPA methodologies. New York State: ELAP Identification Number 10756.

All work recorded herein has been done in accordance with normal professional standards using accepted testing methodologies, quality assurance and quality control procedures except where otherwise agreed to by the client and testing company in writing. Any and all use of these test results shall be limited to the actual cost of the pertinent analysis done. There is no other warranty expressed or implied. Your samples will be retained at PSC Analytical Services for a period of three weeks from receipt of data or as per contract.

COMMENTS:

Certified by: M.C

5555 NORTH SERVICE ROAD, BURLINGTON, ONTARIO, CANADA L7L 5H7 T 905 332 8788 F 905 332 9169 W www.pscanalytical.com

PASC - Certificate of Analysis

	Client ID:		S1 Composite	S2 Composite	S2 Composite	S2 Composite	S2 Composite	S3 Composite	S4 Composite
	Lab No.:		012385 04	012386 04	012386 04	012386 04	012386 04	012387 04	012388 04
	Date Sampled:		15-Mar-2004	15-Mar-2004	15-Mar-2004	15-Mar-2004	15-Mar-2004	15-Mar-2004	16-Mar-2004
Component	**MDL**	**Units**			Duplicate	M. Spike	MS % Rec.		
Mercury	0.04	mg/kg	0.060	0.080	-	-	-	0.040	0.13
				(1)					
Arsenic	1.0	mg/kg	23	80	80	100	94	19	5.7
Barium	0.50	"	130	190	170	230	92	120	130
Cadmium	0.50	"	0.55	1.4	1.4	24	89	0.70	<
Chromium	0.50	"	22	32	32	77	90	24	25
Lead	1.0	"	81	330	310	360	68	75	39
Selenium	1.0	"	<	<	<	22	91	<	<
Silver	0.50	"	<	<	<	24	96	<	<

Metals via SW846 6010
Mercury via SW846 7471

	Client ID:		Method Blank	Blank Spike	% Recovery
	Lab No.:		012384 04	012384 04	012384 04
	Date Sampled:		15-Mar-2004	15-Mar-2004	15-Mar-2004
Component	MDL	Units			
Mercury	0.04	mg/kg	<	1.0	100
Arsenic	1.0	mg/kg	<	25	100
Barium	0.50	"	<	51	100
Cadmium	0.50	"	<	25	100
Chromium	0.50	"	<	51	100
Lead	1.0	"	<	51	100
Selenium	1.0	"	<	25	100
Silver	0.50	"	<	25	99

Metals via SW846 6010
Mercury via SW846 7471

PASC - Certificate of Analysis

	Client ID:		S1 Composite	S1 Composite	S1 Composite	S1 Composite	S2 Composite	S3 Composite	S4 Composite
	Lab No.:		012385 04	012385 04	012385 04	012385 04	012386 04	012387 04	012388 04
	Date Sampled:		15-Mar-2004	15-Mar-2004	15-Mar-2004	15-Mar-2004	15-Mar-2004	15-Mar-2004	16-Mar-2004
Component	**MDL**	**Units**		Duplicate	M. Spike	MS % Rec.			
Benzene	0.001	mg/kg	0.002	0.004	0.060	86	0.002	0.002	<
Ethylbenzene	0.001	"	<	0.001	0.053	76	<	<	<
Toluene	0.001	"	0.004	0.006	0.064	85	0.007	0.005	0.009
m&p-Xylene	0.001	"	0.002	0.004	0.10	73	0.002	0.003	0.002
o-Xylene	0.001	"	0.001	0.002	0.053	76	0.001	0.001	0.001
Xylenes(Total)	0.001	"	0.003	0.005	0.16	74	0.003	0.004	0.003
Isopropylbenzene	0.001	"	<0.002	<0.002	0.066	98	<	<	<0.002
n-Propylbenzene	0.001	"	<0.002	<0.002	0.055	81	<	<	<0.002
p-Isopropyltoluene	0.001	"	<0.002	<0.002	0.047	69	<	<	<0.002
1,2,4-Trimethylbenzene	0.001	"	0.004	0.005	0.059	87	0.002	0.003	0.008
1,3,5-Trimethylbenzene	0.001	"	<0.002	0.002	0.060	88	<	0.001	0.002
n-Butylbenzene	0.001	"	<0.002	<0.002	0.037	54	<	<	<0.002
sec-Butylbenzene	0.001	"	<0.002	<0.002	0.048	71	<	<	<0.002
tert-Butylbenzene	0.001	"	<0.002	<0.002	0.055	80	<	<	<0.002
Naphthalene	0.001	"	0.018	0.017	0.045	66	0.003	0.002	<0.002
Methyl-t-butylether	0.001	"	<	<	NA	<	<	<	<
Surrogate Recoveries		%							
d4-1,2-Dichloroethane			69	72	76	76	68	67	71
d8-Toluene			92	98	98	98	90	87	92
Bromofluorobenzene			68	68	71	71	67	75	62
d10-Ethylbenzene			49	48	48	48	62	49	83

8021 STARS via 8260B

	Client ID:		Method Blank	Blank Spike	% Recovery
	Lab No.:		012384 04	012384 04	012384 04
	Date Sampled:		15-Mar-2004	15-Mar-2004	15-Mar-2004
Component	**MDL**	**Units**			
Benzene	0.001	mg/kg	<	0.063	100
Ethylbenzene	0.001	"	<	0.065	100
Toluene	0.001	"	<	0.061	97
m&p-Xylene	0.001	"	<	0.13	110
o-Xylene	0.001	"	<	0.065	100
Xylenes(Total)	0.001	"	<	0.20	110
Isopropylbenzene	0.001	"	<	0.058	93
n-Propylbenzene	0.001	"	<	0.062	99
p-Isopropyltoluene	0.001	"	<	0.065	100
1,2,4-Trimethylbenzene	0.001	"	<	0.063	100
1,3,5-Trimethylbenzene	0.001	"	<	0.063	100
n-Butylbenzene	0.001	"	<	0.065	100
sec-Butylbenzene	0.001	"	<	0.065	110
tert-Butylbenzene	0.001	"	<	0.062	99
Naphthalene	0.001	"	<	0.060	95
Methyl-t-butylether	0.001	"	<	NA	<
Surrogate Recoveries		%			
d4-1,2-Dichloroethane			74	80	80
d8-Toluene			88	86	86
Bromofluorobenzene			85	89	89
d10-Ethylbenzene			99	91	91

8021 STARS via 8260B

	Client ID:		S1 Composite	S2 Composite	S3 Composite	S4 Composite
	Lab No.:		012385 04	012386 04	012387 04	012388 04
	Date Sampled:		15-Mar-2004	15-Mar-2004	15-Mar-2004	16-Mar-2004
Component	**MDL**	**Units**				
Naphthalene	0.09	mg/kg	<0.18	<0.18	<0.18	<0.18
Acenaphthene	0.07	"	<0.14	0.17	<0.14	<0.14
Fluorene	0.04	"	0.13	0.16	<0.08	<0.08
Phenanthrene	0.03	"	1.7	2.6	0.95	0.08
Anthracene	0.06	"	0.24	0.43	0.17	<0.12
Fluoranthene	0.06	"	1.3	1.9	0.53	<0.12
Pyrene	0.04	"	1.9	6.9	1.8	0.12
Benz(a)anthracene	0.05	"	0.78	3.8	1.2	<0.10
Chrysene	0.04	"	0.99	6.1	1.9	<0.08
Benzo(b)fluoranthene	0.04	"	0.72	1.7	0.42	<0.08
Benzo(k)fluoranthene	0.04	"	0.67	1.5	0.20	<0.08
Benzo(a)pyrene	0.05	"	0.72	1.4	0.31	<0.10
Indeno(1,2,3-cd)pyrene	0.06	"	0.57	1.0	0.27	<0.12
Dibenzo(ah)anthracene	0.05	"	0.16	<0.44	<0.17	<0.10
Benzo(ghi)perylene	0.06	"	0.51	1.2	<0.21	<0.12
Surrogate Recoveries		%				
d5-Nitrobenzene			79	85	83	64
2-Fluorobiphenyl			85	97	88	73
d14-p-Terphenyl			113	108	106	111

8270 STARS via 8270C

			Method Blank	Blank Spike	% Recovery	Blank Spike Duplicate	% Recovery
	Client ID:						
	Lab No.:		012384 04	012384 04	012384 04	012384 04	012384 04
	Date Sampled:		15-Mar-2004	15-Mar-2004	15-Mar-2004	15-Mar-2004	15-Mar-2004
Component	**MDL**	**Units**					
Naphthalene	0.09	mg/kg	<0.18	2.5	63	2.9	72
Acenaphthene	0.07	"	<0.14	2.5	62	2.8	69
Fluorene	0.04	"	<0.08	2.8	71	3.0	76
Phenanthrene	0.03	"	<0.06	3.0	74	3.1	77
Anthracene	0.06	"	<0.12	3.0	76	3.1	78
Fluoranthene	0.06	"	<0.12	2.9	73	3.0	75
Pyrene	0.04	"	<0.08	2.8	69	2.7	68
Benz(a)anthracene	0.05	"	<0.10	3.0	74	3.0	75
Chrysene	0.04	"	<0.08	3.1	76	3.2	79
Benzo(b)fluoranthene	0.04	"	<0.08	3.3	82	3.3	83
Benzo(k)fluoranthene	0.04	"	<0.08	3.2	79	3.1	78
Benzo(a)pyrene	0.05	"	<0.10	3.1	77	3.2	79
Indeno(1,2,3-cd)pyrene	0.06	"	<0.12	2.8	69	2.8	71
Dibenzo(ah)anthracene	0.05	"	<0.10	2.6	66	2.7	66
Benzo(ghi)perylene	0.06	"	<0.12	2.6	66	2.7	67
Surrogate Recoveries		%					
d5-Nitrobenzene			70	66	66	72	72
2-Fluorobiphenyl			72	69	69	78	78
d14-p-Terphenyl			77	77	77	77	77

8270 STARS via 8270C

Batch Code:	**0322MBS1**	
Mercury	012384 04	
	012385 04	
	012386 04	
	012387 04	
	012388 04	
Date Analysed:	04/03/22	
Date Prepared:	04/03/22	
Batch Code:	**0319VPX1**	
Arsenic	012384 04	
	012385 04	
	012386 04	
	012387 04	
	012388 04	
Date Analysed:	04/03/22	
Date Prepared:	04/03/19	
Batch Code:	**0317MC01**	**0324MC01**
Benzene	012384 04	012386 04
	012385 04	012387 04
	012386 04	012388 04
	012387 04	
	012388 04	
Date Analysed:	04/03/17	04/03/24
Date Prepared:	04/03/17	04/03/24
Batch Code:	**0322SPX1**	
Naphthalene	012384 04	
	012385 04	
	012386 04	
	012387 04	
	012388 04	
Date Analysed:	04/03/24	
Date Prepared:	04/03/22	

Client:Ensol. Inc. Project:

TOTAL P.08

Certificate of Analysis

CLIENT INFORMATION

Attention:	John Battaglia
Client Name:	Ensol. Inc.
Project:	03-0045
Project Desc:	303 Woodward Ave.
Address:	452 Third Street Niagara Falls, NY 14301
Fax Number:	716-285-3928
Phone Number:	716-285-3920

LABORATORY INFORMATION

Contact:	Mike Challis, B.Sc, C.Chem.
Project:	AN040364
Date Received:	17-Mar-2004
Date Reported:	25-Mar-2004
Submission No.:	4C0652
Sample No.:	012824-012825

NOTES: *'-' = not analysed '<' = less than Method Detection Limit (MDL) 'NA' = no data available*
LOQ can by determined for all analytes by multiplying the appropriate MDL X 3.33
Solids data is based on dry weight except for biota analyses.
Organic analyses are not corrected for extraction recovery standards except for isotope dilution methods, (i.e. CARB 429 PAH, all PCDD/F and DBD/DBF analyses)
The enclosed copy of the Chain of Custody Record may contain information necessary for the interpretation of the data.

Methods used by PSC Analytical Services are based upon those found in 'Standard Methods for the Examination of Water and Wastewater', Twentieth Edition. Other methods are based on the principles of MISA or EPA methodologies. New York State: ELAP Identification Number 10756.

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COMMENTS:

Certified by: _____

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	Client ID:		S5 Composite	Method Blank	Blank Spike	% Recovery
	Lab No.:		012825 04	012824 04	012824 04	012824 04
	Date Sampled:		16-Mar-2004	16-Mar-2004	16-Mar-2004	16-Mar-2004
Component	MDL	Units				
Mercury	0.04	mg/kg	0.070	<	1.0	100
Arsenic	1.0	mg/kg	5.8	<	25	100
Barium	0.50	"	130	<	51	100
Cadmium	0.50	"	<	<	25	100
Chromium	0.50	"	27	<	51	100
Lead	1.0	"	55	<	51	100
Selenium	1.0	"	<	<	25	100
Silver	0.50	"	<	<	25	99

Metals via 6010
Mercury via 7471

			S5	Method	Blank	%
	Client ID:		Composite	Blank	Spike	Recovery
	Lab No.:		012825 04	012824 04	012824 04	012824 04
	Date Sampled:		16-Mar-2004	16-Mar-2004	16-Mar-2004	16-Mar-2004
Component	**MDL**	**Units**				
Benzene	0.001	mg/kg	0.002	<	0.063	100
Ethylbenzene	0.001	"	<	<	0.065	100
Toluene	0.001	"	0.003	<	0.061	97
m&p-Xylene	0.001	"	0.002	<	0.13	110
o-Xylene	0.001	"	<	<	0.065	100
Xylenes(Total)	0.001	"	0.002	<	0.20	110
Isopropylbenzene	0.001	"	<	<	0.058	93
n-Propylbenzene	0.001	"	<	<	0.062	99
p-Isopropyltoluene	0.001	"	<	<	0.065	100
1,2,4-Trimethylbenzene	0.001	"	0.002	<	0.063	100
1,3,5-Trimethylbenzene	0.001	"	<	<	0.063	100
n-Butylbenzene	0.001	"	<	<	0.065	100
sec-Butylbenzene	0.001	"	<	<	0.065	110
tert-Butylbenzene	0.001	"	<	<	0.062	99
Naphthalene	0.001	"	0.002	<	0.060	95
Methyl-t-butylether	0.001	"	<	<	NA	<
Surrogate Recoveries		%				
d4-1,2-Dichloroethane			70	74	80	80
d8-Toluene			85	88	86	86
Bromofluorobenzene			77	85	89	89
d10-Ethylbenzene			70	99	91	91

8021 STARS via 8260B

PASC - Certificate of Analysis

			S5	Method	Blank	%	Blank Spike	%
	Client ID:		Composite	Blank	Spike	Recovery	Duplicate	Recovery
	Lab No.:		012825 04	012824 04	012824 04	012824 04	012824 04	012824 04
	Date Sampled:		16-Mar-2004	16-Mar-2004	16-Mar-2004	16-Mar-2004	16-Mar-2004	16-Mar-2004
Component	**MDL**	**Units**						
Naphthalene	0.09	mg/kg	<0.18	<0.18	2.5	63	2.9	72
Acenaphthene	0.07	"	<0.14	<0.14	2.5	62	2.8	69
Fluorene	0.04	"	<0.08	<0.08	2.8	71	3.0	76
Phenanthrene	0.03	"	0.66	<0.06	3.0	74	3.1	77
Anthracene	0.06	"	0.12	<0.12	3.0	76	3.1	78
Fluoranthene	0.06	"	0.80	<0.12	2.9	73	3.0	75
Pyrene	0.04	"	1.3	<0.08	2.8	69	2.7	68
Benz(a)anthracene	0.05	"	0.60	<0.10	3.0	74	3.0	75
Chrysene	0.04	"	0.95	<0.08	3.1	76	3.2	79
Benzo(b)fluoranthene	0.04	"	0.59	<0.08	3.3	82	3.3	83
Benzo(k)fluoranthene	0.04	"	0.45	<0.08	3.2	79	3.1	78
Benzo(a)pyrene	0.05	"	0.58	<0.10	3.1	77	3.2	79
Indeno(1,2,3-cd)pyrene	0.06	"	0.50	<0.12	2.8	69	2.8	71
Dibenzo(ah)anthracene	0.05	"	0.17	<0.10	2.6	66	2.7	66
Benzo(ghi)perylene	0.06	"	0.43	<0.12	2.6	66	2.7	67
Surrogate Recoveries		%						
d5-Nitrobenzene			69	70	66	66	72	72
2-Fluorobiphenyl			80	72	69	69	78	78
d14-p-Terphenyl			96	77	77	77	77	77

8270 STARS via 8270C

Batch Code:	**0322MBS1**
Mercury	012824 04
	012825 04
Date Analysed:	04/03/22
Date Prepared:	04/03/22
Batch Code:	**0319VPX1**
Arsenic	012824 04
	012825 04
Date Analysed:	04/03/22
Date Prepared:	04/03/19
Batch Code:	**0317MC01**
Benzene	012824 04
	012825 04
Date Analysed:	04/03/17
Date Prepared:	04/03/17
Batch Code:	**0322SPX1**
Naphthalene	012824 04
	012825 04
Date Analysed:	04/03/24
Date Prepared:	04/03/22

Certificate of Analysis

CLIENT INFORMATION

Attention:	Rob Robinson
Client Name:	Ensol. Inc.
Project:	04-0008
Project Desc:	303 Woodward Ave.
Address:	452 Third Street Niagara Falls, NY 14301
Fax Number:	716-285-3928
Phone Number:	716-285-3920

LABORATORY INFORMATION

Contact:	Mike Challis, B.Sc, C.Chem.
Project:	AN040364
Date Received:	18-Mar-2004
Date Reported:	2-Apr-2004
Revised:	2-Apr-2004
Submission No.:	4C0700
Sample No.:	013273-013274

NOTES: *'-' = not analysed '<' = less than Method Detection Limit (MDL) 'NA' = no data available*
LOQ can by determined for all analytes by multiplying the appropriate MDL X 3.33
Solids data is based on dry weight except for biota analytes.
Organic analyses are not corrected for extraction recovery standards except for isotope dilution methods, (i.e. CARB 429 PAH, all PCDD/F and DBD/DBF analyses)
The enclosed copy of the Chain of Custody Record may contain information necessary for the interpretation of the data.

Methods used by PSC Analytical Services are based upon those found in 'Standard Methods for the Examination of Water and Wastewater', Twentieth Edition. Other methods are based on the principles of MISA or EPA methodologies. New York State: ELAP Identification Number 10756.

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COMMENTS: **Revised to include Mercury**

Certified by: MC

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			S6	Method	Blank	%
	Client ID:		Composite	Blank	Spike	Recovery
	Lab No.:		013274 04	013273 04	013273 04	013273 04
	Date Sampled:		17-Mar-2004	17-Mar-2004	17-Mar-2004	17-Mar-2004
Component	**MDL**	**Units**				
Arsenic	1.0	mg/kg	5.3	<	25	100
Barium	0.50	"	120	<	51	100
Cadmium	0.50	"	<	<	25	100
Chromium	0.50	"	22	<	51	100
Lead	1.0	"	17	<	51	100
Selenium	1.0	"	<	<	25	100
Silver	0.50	"	<	<	25	99
Mercury	0.04	mg/kg	<	<	1.0	100

Mercury via SW846 7471
Metals via SW846 6010

	Client ID:		S6 Composite	Method Blank	Blank Spike	% Recovery
	Lab No.:		013274 04	013273 04	013273 04	013273 04
	Date Sampled:		17-Mar-2004	17-Mar-2004	17-Mar-2004	17-Mar-2004
Component	**MDL**	**Units**				
Benzene	0.001	mg/kg	<	<	0.061	98
Ethylbenzene	0.001	"	<	<	0.063	100
Toluene	0.001	"	0.003	<	0.060	96
m&p-Xylene	0.001	"	0.002	<	0.13	110
o-Xylene	0.001	"	<	<	0.064	100
Xylenes(Total)	0.001	"	0.002	<	0.20	100
Isopropylbenzene	0.001	"	<	<	0.057	91
n-Propylbenzene	0.001	"	<	<	0.062	99
p-Isopropyltoluene	0.001	"	<	<	0.065	100
1,2,4-Trimethylbenzene	0.001	"	0.002	<	0.062	99
1,3,5-Trimethylbenzene	0.001	"	<	<	0.062	99
n-Butylbenzene	0.001	"	<	<	0.066	110
sec-Butylbenzene	0.001	"	<	<	0.065	100
tert-Butylbenzene	0.001	"	<	<	0.061	98
Naphthalene	0.001	"	0.001	<	0.060	97
Methyl-t-butylether	0.001	"	<	<	NA	<
Surrogate Recoveries		%				
d4-1,2-Dichloroethane			67	71	79	79
d8-Toluene			83	85	84	84
Bromofluorobenzene			76	82	87	87
d10-Ethylbenzene			79	103	93	93

VOC via SW846 8260

PASC - Certificate of Analysis

	Client ID:		S6 Composite	S6 Composite	S6 Composite	S6 Composite	S6 Composite
	Lab No.:		013274 04	013274 04	013274 04	013274 04	013274 04
	Date Sampled:		17-Mar-2004	17-Mar-2004	17-Mar-2004	17-Mar-2004	17-Mar-2004
Component	**MDL**	**Units**		M. Spike	MS % Rec.	MS Dup	MSD % Rec.
Naphthalene	0.09	mg/kg	<0.18	3.8	70	5.3	94
Acenaphthene	0.07	"	<0.14	4.2	75	5.3	93
Fluorene	0.04	"	<0.08	4.3	77	5.4	96
Phenanthrene	0.03	"	0.14	4.6	81	12	210
Anthracene	0.06	"	<0.12	4.3	78	5.8	100
Fluoranthene	0.06	"	<0.12	3.8	69	9.4	170
Pyrene	0.04	"	0.26	6.4	110	13	190
Benz(a)anthracene	0.05	"	0.27	4.8	82	7.3	120
Chrysene	0.04	"	0.41	5.0	83	8.0	140
Benzo(b)fluoranthene	0.04	"	<0.08	4.5	81	7.1	130
Benzo(k)fluoranthene	0.04	"	<0.08	4.3	78	6.6	120
Benzo(a)pyrene	0.05	"	<0.10	4.6	84	7.0	120
Indeno(1,2,3-cd)pyrene	0.06	"	<0.12	5.1	92	7.4	130
Dibenzo(ah)anthracene	0.05	"	<0.10	5.3	97	6.4	110
Benzo(ghi)perylene	0.06	"	<0.12	4.9	89	7.1	120
Surrogate Recoveries		%					
d5-Nitrobenzene			69	68	68	76	76
2-Fluorobiphenyl			78	75	75	85	85
d14-p-Terphenyl			97	103	103	118	118

SVOC via SW846 8270

PASC - Certificate of Analysis

			Method	Blank	%	Blank Spike	%
	Client ID:		Blank	Spike	Recovery	Duplicate	Recovery
	Lab No.:		013273 04	013273 04	013273 04	013273 04	013273 04
	Date Sampled:		17-Mar-2004	17-Mar-2004	17-Mar-2004	17-Mar-2004	17-Mar-2004
Component	MDL	Units					
Naphthalene	0.09	mg/kg	<0.18	2.5	63	2.9	72
Acenaphthene	0.07	"	<0.14	2.5	62	2.8	69
Fluorene	0.04	"	<0.08	2.8	71	3.0	76
Phenanthrene	0.03	"	<0.06	3.0	74	3.1	77
Anthracene	0.06	"	<0.12	3.0	76	3.1	78
Fluoranthene	0.06	"	<0.12	2.9	73	3.0	75
Pyrene	0.04	"	<0.08	2.8	69	2.7	68
Benz(a)anthracene	0.05	"	<0.10	3.0	74	3.0	75
Chrysene	0.04	"	<0.08	3.1	76	3.2	79
Benzo(b)fluoranthene	0.04	"	<0.08	3.3	82	3.3	83
Benzo(k)fluoranthene	0.04	"	<0.08	3.2	79	3.1	78
Benzo(a)pyrene	0.05	"	<0.10	3.1	77	3.2	79
Indeno(1,2,3-cd)pyrene	0.06	"	<0.12	2.8	69	2.8	71
Dibenzo(ah)anthracene	0.05	"	<0.10	2.6	66	2.7	66
Benzo(ghi)perylene	0.06	"	<0.12	2.6	66	2.7	67
Surrogate Recoveries		%					
d5-Nitrobenzene			70	66	66	72	72
2-Fluorobiphenyl			72	69	69	78	78
d14-p-Terphenyl			77	77	77	77	77

SVOC via SW846 8270

PASC - Summary of Analysis Pre. Dates

Batch Code:	**0319VPX1**	
Arsenic	013273 04	
	013274 04	
Date Analysed:	04/03/22	
Date Prepared:	04/03/19	
Batch Code:	**0324MC01**	
Benzene	013273 04	
	013274 04	
Date Analysed:	04/03/24	
Date Prepared:	04/03/24	
Batch Code:	**0322SPX1**	**0322SPX1**
Naphthalene	013273 04	013274 04
Date Analysed:	04/03/24	04/03/25
Date Prepared:	04/03/22	04/03/22

CHAIN OF CUSTODY

ANALYTICAL SERVICES
5555 North Service Road
Burlington, Ontario L7L 5H7

Toll Free: 1-800-668-0639
Tel: (905) 332-8788
Fax: (905) 332-9169

CLIENT INFORMATION

Company Name: EnSol, Inc.
Project Manager:
Address: 452 Third street

Phone #: 716-285-3920 Fax #: 716-285-3928
Sampled by:

MB-013273
~~MB-013274~~

ANALYSIS REQUESTED

Philip Use Only	Field Sample ID	# Bottles	Matrix	Date	Time	RCRA 8 metals	8021 STARS	8270 STARS	Level of contamination (low, high, unknown)
013274	S6 Composite	2	soil	3/17/04	13:50	X	X	X	

TAT (Turnaround Time)

RUSH TAT MUST HAVE PRIOR APPROVAL

*some exceptions apply please contact Lab

- STD 10 Business Days ☐
- RUSH 5 Business Days ☒
- RUSH 2 Business Days ☐
- RUSH 1 Business Days ☐
- Other Business Days ____

PROJECT INFORMATION

Project #: 03-0045
Site: 303 Woodward Ave.
PO#:
Philip Quote #:
Philip Project #:
Philip Contact:

SPECIAL DETECTION LIMITS

MISA ☐

SPECIAL REQUIREMENTS / REGULATIONS

REMARKS

7.0 °C

Client Signature:
Affiliation: EnSol
Date/Time: 3/18/04, 9:00 AM

Received By:
Affiliation: PSC
Date/Time: 3/18/04 9:05 AM

Rec'd By:
Date/Time

WHITE - LAB / YELLOW - CLIENT

SEE OVER FOR COMPLETION & SAMPLING INSTRUCTION

TOTAL P.02

Certificate of Analysis

CLIENT INFORMATION

Attention:	Rob Robinson
Client Name:	Ensol. Inc.
Project:	04-0008
Project Desc:	
Address:	452 Third Street Niagara Falls, NY 14301
Fax Number:	716-285-3928
Phone Number:	716-285-3920

LABORATORY INFORMATION

Contact:	Mike Challis, B.Sc, C.Chem.
Project:	AN040364
Date Received:	20-Mar-2004
Date Reported:	30-Mar-2004
Submission No.:	4C0790
Sample No.:	013773-013778

NOTES: *"-" = not analysed '<' = less than Method Detection Limit (MDL) 'NA' = no data available*
LOQ can by determined for all analytes by multiplying the appropriate MDL X 3.33
Solids data is based on dry weight except for biota analyses.
Organic analyses are not corrected for extraction recovery standards except for isotope dilution methods, (i.e. CARB 429 PAH, all PCDD/F and DBD/DBF analyses)
The enclosed copy of the Chain of Custody Record may contain information necessary for the interpretation of the data.

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COMMENTS:

Certified by: MCL

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	Client ID:		S7	S8	S9	S10	S11	Method Blank	Blank Spike	% Recovery
	Lab No.:		013774 04	013775 04	013776 04	013777 04	013778 04	013773 04	013773 04	013773 04
	Date Sampled:		18-Mar-2004	19-Mar-2004	19-Mar-2004	19-Mar-2004	19-Mar-2004	18-Mar-2004	18-Mar-2004	18-Mar-2004
Component	MDL	Units								
Mercury	0.04	mg/kg	<	0.050	<	0.080	0.13	<	1.0	100
Arsenic	1.0	mg/kg	6.1	5.6	5.4	6.0	7.0	<	25	100
Barium	0.50	"	170	170	160	120	120	<	50	100
Cadmium	0.50	"	<	<	<	<	<	<	25	100
Chromium	0.50	"	27	33	28	25	21	<	51	100
Lead	1.0	"	16	18	15	55	31	<	50	100
Selenium	1.0	"	<	<	<	<	<	<	25	100
Silver	0.50	"	<	<	<	<	<	<	25	98

Metals via 6010
Mercury via 7471

PASC - Certificate of Analysis

	Client ID:		S7	S8	S9	S10	S11	Method Blank	Blank Spike	% Recovery
	Lab No.:		013774 04	013775 04	013776 04	013777 04	013778 04	013773 04	013773 04	013773 04
	Date Sampled:		18-Mar-2004	19-Mar-2004	19-Mar-2004	19-Mar-2004	19-Mar-2004	18-Mar-2004	18-Mar-2004	18-Mar-2004
Component	**MDL**	**Units**								
Benzene	0.001	mg/kg	0.002	0.001	0.002	0.001	0.001	<	0.061	98
Ethylbenzene	0.001	"	0.001	0.001	<	<	<	<	0.063	100
Toluene	0.001	"	0.005	0.002	0.005	0.008	0.003	<	0.060	96
m&p-Xylene	0.001	"	0.004	0.003	0.005	0.004	0.003	<	0.13	110
o-Xylene	0.001	"	0.002	0.003	0.003	0.002	0.002	<	0.064	100
Xylenes(Total)	0.001	"	0.005	0.006	0.008	0.006	0.005	<	0.20	100
Isopropylbenzene	0.001	"	0.002	0.002	<	<	<	<	0.057	91
n-Propylbenzene	0.001	"	0.002	0.004	<	0.002	0.001	<	0.062	99
p-Isopropyltoluene	0.001	"	0.003	0.006	0.001	0.001	<	<	0.065	100
1,2,4-Trimethylbenzene	0.001	"	0.014	0.056	0.012	0.011	0.010	<	0.062	99
1,3,5-Trimethylbenzene	0.001	"	0.005	0.016	0.004	0.003	0.003	<	0.062	99
n-Butylbenzene	0.001	"	0.003	0.007	<	<	<	<	0.066	110
sec-Butylbenzene	0.001	"	0.002	0.004	<	<	<	<	0.065	100
tert-Butylbenzene	0.001	"	<	<	<	<	<	<	0.061	98
Naphthalene	0.001	"	0.003	0.046	0.003	0.006	0.004	<	0.060	97
Methyl-t-butylether	0.001	"	<	<	<	<	<	<	NS	-
Surrogate Recoveries		%								
d4-1,2-Dichloroethane			69	67	53	66	66	71	79	79
d8-Toluene			84	86	82	88	86	85	84	84
Bromofluorobenzene			74	81	71	69	74	82	87	87
d10-Ethylbenzene			73	60	74	66	64	103	93	93

8021 STARS via 8260B

	Client ID:		S7	S8	S9	S10	S11
	Lab No.:		013774 04	013775 04	013776 04	013777 04	013778 04
	Date Sampled:		18-Mar-2004	19-Mar-2004	19-Mar-2004	19-Mar-2004	19-Mar-2004
Component	**MDL**	**Units**					
Naphthalene	0.09	mg/kg	<0.18	0.56	<0.18	<	<0.18
Acenaphthene	0.07	"	<0.14	0.16	<0.14	<0.14	<0.14
Fluorene	0.04	"	<0.08	0.26	<0.08	<0.08	<0.08
Phenanthrene	0.03	"	0.20	1.6	<0.06	0.53	0.78
Anthracene	0.06	"	<0.12	0.26	<0.12	<0.12	<0.12
Fluoranthene	0.06	"	0.14	1.5	<0.12	0.59	0.72
Pyrene	0.04	"	0.33	2.2	<0.08	0.66	0.93
Benz(a)anthracene	0.05	"	0.24	0.72	<0.10	0.34	0.36
Chrysene	0.04	"	0.30	0.92	<0.08	0.45	0.47
Benzo(b)fluoranthene	0.04	"	<0.08	0.80	<0.08	0.27	0.30
Benzo(k)fluoranthene	0.04	"	<0.08	0.65	<0.08	0.23	0.26
Benzo(a)pyrene	0.05	"	<0.10	0.81	<0.10	0.25	0.35
Indeno(1,2,3-cd)pyrene	0.06	"	<0.12	0.62	<0.12	0.17	0.20
Dibenzo(ah)anthracene	0.05	"	<0.10	0.18	<0.10	<0.10	<0.10
Benzo(ghi)perylene	0.06	"	<0.12	0.62	<0.12	0.13	0.20
Surrogate Recoveries		%					
d5-Nitrobenzene			73	83	97	42	83
2-Fluorobiphenyl			72	83	98	44	86
d14-p-Terphenyl			96	108	104	56	104

8270 STARS via 8270C

PASC - Certificate of Analysis

	Client ID:		Method Blank	Blank Spike	% Recovery	Blank Spike Duplicate	% Recovery
	Lab No.:		013773 04	013773 04	013773 04	013773 04	013773 04
	Date Sampled:		18-Mar-2004	18-Mar-2004	18-Mar-2004	18-Mar-2004	18-Mar-2004
Component	**MDL**	**Units**					
Naphthalene	0.09	mg/kg	<0.18	3.3	82	3.3	83
Acenaphthene	0.07	"	<0.14	3.3	83	3.3	83
Fluorene	0.04	"	<0.08	3.3	83	3.3	83
Phenanthrene	0.03	"	<0.06	3.4	84	3.3	84
Anthracene	0.06	"	<0.12	3.4	85	3.4	85
Fluoranthene	0.06	"	<0.12	3.5	87	3.3	83
Pyrene	0.04	"	<0.08	3.9	98	3.6	89
Benz(a)anthracene	0.05	"	<0.10	3.5	87	3.4	86
Chrysene	0.04	"	<0.08	3.4	85	3.4	86
Benzo(b)fluoranthene	0.04	"	<0.08	3.9	96	3.5	88
Benzo(k)fluoranthene	0.04	"	<0.08	3.6	89	3.2	79
Benzo(a)pyrene	0.05	"	<0.10	3.5	86	3.4	86
Indeno(1,2,3-cd)pyrene	0.06	"	<0.12	3.0	74	3.8	94
Dibenzo(ah)anthracene	0.05	"	<0.10	2.9	73	3.8	95
Benzo(ghi)perylene	0.06	"	<0.12	2.8	70	3.5	87
Surrogate Recoveries		%					
d5-Nitrobenzene			70	82	82	81	81
2-Fluorobiphenyl			72	83	83	82	82
d14-p-Terphenyl			87	99	99	88	88

8270 STARS via 8270C

Batch Code:	**0329MBS2**	
Mercury	013773 04	
	013774 04	
	013775 04	
	013776 04	
	013777 04	
	013778 04	
Date Analysed:	04/03/30	
Date Prepared:	04/03/29	
Batch Code:	**0323VPX1**	
Arsenic	013773 04	
	013774 04	
	013775 04	
	013776 04	
	013777 04	
	013778 04	
Date Analysed:	04/03/24	
Date Prepared:	04/03/23	
Batch Code:	**0324MC01**	
Benzene	013773 04	
	013774 04	
	013775 04	
	013776 04	
	013777 04	
	013778 04	
Date Analysed:	04/03/24	
Date Prepared:	04/03/24	
Batch Code:	**0324SPA1**	**0324SPA1**
Naphthalene	013773 04	013776 04
	013774 04	013777 04
	013775 04	013778 04
Date Analysed:	04/03/25	04/03/26
Date Prepared:	04/03/24	04/03/24

CHAIN OF CUSTODY

ANALYTICAL SERVICES
5555 North Service Road
Burlington, Ontario L7L 5H7

Toll Free: 1-800-668-0639
Tel: (905) 332-8788
Fax: (905) 332-9169

CLIENT INFORMATION

Company Name: EnSol, Inc.
Project Manager:
Address: 452 Third Street
Niagara Falls, N.Y. 14301
Phone #: 716-285-3420 Fax #: 716-285-3526
Sampled by: Robert Robinson

MA- 13773

ANALYSIS REQUESTED

Philip Use Only	Field Sample ID	# Bottles	Matrix	Date	Time	RCRA 8 Metals	8021 STARS	8270 STARS	Level of contamination
74	S7	2	Soil	3/16/04	10:15	X	X	X	2x2000A
75	S8	2	Soil	3/19/04	8:45	X	X	X	
76	S9	2	Soil	3/19/04	11:25	X	X	X	
77	S10	2	Soil	3/19/04	14:20	X	X	X	
78	S11	2	Soil	3/19/04	15:15	X	X	X	

TAT (Turnaround Time)

RUSH TAT MUST HAVE PRIOR APPROVAL

*some exceptions apply please contact Lab

- STD 10 Business Days ☐
- RUSH 5 Business Days ☒
- RUSH 2 Business Days ☐
- RUSH 1 Business Days ☐
- Other Business Days ____

PROJECT INFORMATION

Project #: 03-3360-01T
Site: 303 Woodward Ave
PO#:
Philip Quote #:
Philip Project #:
Philip Contact:

SPECIAL DETECTION LIMITS

MISA ☐

SPECIAL REQUIREMENTS / REGULATIONS

REMARKS

2.7, 2.7, 3.0

Client Signature:
Affiliation: EnSol
Date/Time: 3/19/04, 3:30pm

Received By: Kevin Frehsee
Affiliation: PSC
Date/Time: 3/19/04 3:35pm

Rec'd By:
Date/Time

WHITE - LAB / YELLOW - CLIENT

SEE OVER FOR COMPLETION & SAMPLING INSTRUCTIO

TOTAL P.07

2. Soil Borings and Groundwater Samples

Certificate of Analysis

CLIENT INFORMATION

Attention:	Rob Robinson
Client Name:	Ensol. Inc.
Project:	03-0045,04-0008
Project Desc:	303 Woodward Ave.
Address:	452 Third Street Niagara Falls, NY 14301
Fax Number:	716-285-3928
Phone Number:	716-285-3920

LABORATORY INFORMATION

Contact:	Mike Challis, B.Sc, C.Chem.
Project:	AN040364
Date Received:	07-Apr-2004
Date Reported:	16-Apr-2004
Revised:	20-Apr-2004
Submission No.:	4D0289
Sample No.:	018146-018163

NOTES: ***"-' = not analysed '<' = less than Method Detection Limit (MDL) 'NA' = no data available***
LOQ can by determined for all analytes by multiplying the appropriate MDL X 3.33
Solids data is based on dry weight except for biota analyses.
Organic analyses are not corrected for extraction recovery standards except for isotope dilution methods, (i.e. CARB 429 PAH, all PCDD/F and DBD/DBF analyses)
The enclosed copy of the Chain of Custody Record may contain information necessary for the interpretation of the data.

Methods used by PSC Analytical Services are based upon those found in 'Standard Methods for the Examination of Water and Wastewater', Twentieth Edition. Other methods are based on the principles of MISA or EPA methodologies. New York State: ELAP Identification Number 10756.

All work recorded herein has been done in accordance with normal professional standards using accepted testing methodologies, quality assurance and quality control procedures except where otherwise agreed to by the client and testing company in writing. Any and all use of these test results shall be limited to the actual cost of the pertinent analysis done. There is no other warranty expressed or implied. Your samples will be retained at PSC Analytical Services for a period of three weeks from receipt of data or as per contract.

COMMENTS: **Revised to Update Compound Lists**

(1) Surrogate Recovery Outside Acceptable Limits - matrix effect suspected.
(2) Sample diluted 2x for Selenium due to matrix effect on internal standards.
(3) Matrix interference suspected for Antimony & Thallium.
NS = Not Spiked

Certified by: M.C

555 NORTH SERVICE ROAD, BURLINGTON, ONTARIO, CANADA L7L 5H7 T 905 332 8788 F 905 332 9169 W www.pscanalytical.com

			Method	Blank	%						
	Client ID:		Blank	Spike	Recovery	GW-1	SB-2A	SB-2A	SB-2A	SB-2A	SB-2B
	Lab No.:		018146 04	018146 04	018146 04	018147 04	018148 04	018148 04	018148 04	018148 04	018149 04
	Date Sampled:		06-Apr-2004	06-Apr-2004	06-Apr-2004	06-Apr-2004	06-Apr-2004	06-Apr-2004	06-Apr-2004	06-Apr-2004	06-Apr-2004
Component	**MDL**	**Units**						Duplicate	M. Spike	MS % Rec.	
Mercury	0.04	mg/kg	<	1.0	100	< (2)	0.14	0.15	1.1	99	0.15
Arsenic	1.0	mg/kg	<	25	100	45	12	-	-	-	3.8
Barium	0.50	"	<	52	100	6.6	150	-	-	-	140
Cadmium	0.50	"	<	25	100	6.2	0.61	-	-	-	<
Chromium	0.50	"	<	51	100	180	32	-	-	-	19
Nickel	0.5	"	<	25	100	270	43	-	-	-	23
Selenium	1.0	"	<	25	98	<2.0	1.1	-	-	-	<
Silver	0.50	"	<	25	99	<	<	-	-	-	<

	Client ID:		SB-3A	SB-3B	SB-4A	SB-4B	SB-5A	SB-5B	SB-5C	SB-5D	SB-6A
	Lab No.:		018150 04	018151 04	018152 04	018153 04	018154 04	018155 04	018156 04	018157 04	018158 04
	Date Sampled:		06-Apr-2004	06-Apr-2004	06-Apr-2004	06-Apr-2004	06-Apr-2004	06-Apr-2004	06-Apr-2004	06-Apr-2004	06-Apr-2004
Component	**MDL**	**Units**									
Mercury	0.04	mg/kg	0.16	0.040	0.29	<	0.38	0.050 (2)	0.12	0.15	< (3)
Arsenic	1.0	mg/kg	17	5.1	29	4.3	38	55	4.5	5.1	4.3
Barium	0.50	"	150	140	170	100	54	29	210	250	95
Cadmium	0.50	"	0.63	<	2.9	<	4.7	11	95	120	<
Chromium	0.50	"	25	26	150	18	160	510	41	51	18
Nickel	0.5	"	37	26	140	23	250	1000	64	77	25
Selenium	1.0	"	1.3	<	<	<	<	<2.0	8.1	7.0	<
Silver	0.50	"	<	<	1.4	<	6.1	0.69	2.2	2.9	<

	Client ID:		SB-6A	SB-6A	SB-6A	SB-7A	SB-7B
	Lab No.:		018158 04	018158 04	018158 04	018159 04	018160 04
	Date Sampled:		06-Apr-2004	06-Apr-2004	06-Apr-2004	06-Apr-2004	06-Apr-2004
Component	**MDL**	**Units**	Duplicate	M. Spike	MS % Rec.		
Mercury	0.04	mg/kg	-	-	-	0.25	<
Arsenic	1.0	mg/kg	4.3	28	96	37	76
Barium	0.50	"	96	150	100	90	230
Cadmium	0.50	"	<	23	92	1.5	<
Chromium	0.50	"	18	67	98	84	100
Nickel	0.5	"	24	48	95	190	140
Selenium	1.0	"	<	23	92	1.6	2.1
Silver	0.50	"	<	25	99	<	<

			Method	Blank	%	
	Client ID:		Blank	Spike	Recovery	GW-1
	Lab No.:		018146 04	018146 04	018146 04	018147 04
	Date Sampled:		06-Apr-2004	06-Apr-2004	06-Apr-2004	06-Apr-2004
Component	**MDL**	**Units**				
:nzene	0.001	mg/kg	<0.080	4.8	96	<0.080
Ethylbenzene	0.001	"	<0.080	5.0	100	<0.080
)luene	0.001	"	<0.080	4.9	99	0.11
&p-Xylene	0.001	"	<0.080	10	100	<0.080
Xylene	0.001	"	<0.080	5.1	100	<0.080
Xylenes(Total)	0.001	"	<0.080	15	100	<0.080
opropylbenzene	0.001	"	<0.080	4.4	88	<0.080
Propylbenzene	0.001	"	<0.080	4.6	93	<0.080
p-Isopropyltoluene	0.001	"	<0.080	4.8	95	<0.080
2,4-Trimethylbenzene	0.001	"	<0.080	4.7	94	<0.080
3,5-Trimethylbenzene	0.001	"	<0.080	4.7	95	<0.080
Butylbenzene	0.001	"	<0.080	4.7	94	<0.080
sec-Butylbenzene	0.001	"	<0.080	4.9	97	<0.080
rt-Butylbenzene	0.001	"	<0.080	4.7	94	<0.080
aphthalene	0.001	"	<0.080	4.4	89	0.096
ethyl-t-butylether	0.001	"	<0.080	NS	-	<0.080
Surrogate Recoveries		%				
-1,2-Dichloroethane			73	79	79	72
-Toluene			76	81	81	80
Bromofluorobenzene			78	87	87	84
10-Ethylbenzene			98	NS	-	49
						(1)

	Client ID:		Method Blank	Blank Spike	% Recovery	Blank Spike Duplicate	% Recovery	GW-1
	Lab No.:		018146 04	018146 04	018146 04	018146 04	018146 04	018147 04
	Date Sampled:		06-Apr-2004	06-Apr-2004	06-Apr-2004	06-Apr-2004	06-Apr-2004	06-Apr-2004
Component	**MDL**	**Units**						(1)
Naphthalene	0.09	mg/kg	<0.18	NS	-	NS	-	<0.90
Hexachlorobutadiene	0.20	"	<0.40	NS	-	NS	-	<2.0
Acenaphthylene	0.04	"	<0.08	NS	-	NS	-	<2.0
Acenaphthene	0.07	"	<0.14	35	88	33	81	<3.5
Fluorene	0.06	"	<0.12	NS	-	NS	-	<3.0
Phenanthrene	0.03	"	<0.06	NS	-	NS	-	21
Anthracene	0.06	"	<0.12	NS	-	NS	-	5.0
Fluoranthene	0.05	"	<0.10	NS	-	NS	-	8.7
Pyrene	0.06	"	<0.12	36	90	36	90	25
Benzo(a)anthracene	0.05	"	<0.10	NS	-	NS	-	51
Chrysene	0.06	"	<0.12	NS	-	NS	-	63
Benzo(b)fluoranthene	0.04	"	<0.08	NS	-	NS	-	<2.0
Benzo(k)fluoranthene	0.04	"	<0.08	NS	-	NS	-	<2.0
Benzo(a)pyrene	0.05	"	<0.10	NS	-	NS	-	<2.5
Indeno(1,2,3-cd)pyrene	0.06	"	<0.12	NS	-	NS	-	<3.0
Dibenzo(a,h)anthracene	0.06	"	<0.12	NS	-	NS	-	<3.0
Benzo(ghi)perylene	0.05	"	<0.10	NS	-	NS	-	<2.5
Surrogate Recoveries		%						
2-Fluorophenol			65	88	88	36	36	5.0
d5-Phenol			73	86	86	57	57	14
d5-Nitrobenzene			64	88	88	44	44	3.0
2-Fluorobiphenyl			69	87	87	67	67	80
2,4,6-Tribromophenol			75	90	90	85	85	<
d14-p-Terphenyl			86	94	94	95	95	107

	Client ID:		SB-2A	SB-2B	SB-3A	SB-3B	SB-4A	SB-4B
	Lab No.:		018148 04	018149 04	018150 04	018151 04	018152 04	018153 04
	Date Sampled:		06-Apr-2004	06-Apr-2004	06-Apr-2004	06-Apr-2004	06-Apr-2004	06-Apr-2004
Component	MDL	Units						
iphthalene	0.09	mg/kg	<0.18	<0.18	1.3	<0.18	0.47	<0.18
exachlorobutadiene	0.20	"	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
enaphthylene	0.04	"	<0.08	<0.08	0.33	<0.08	2.5	<0.08
enaphthene	0.07	"	<0.14	<0.14	0.39	<0.14	0.50	<0.14
uorene	0.06	"	<0.12	<0.12	0.50	<0.12	0.80	<0.12
Phenanthrene	0.03	"	1.3	0.08	5.9	<0.06	3.5	<0.06
nthracene	0.06	"	0.14	<0.12	0.89	<0.12	2.4	<0.12
uoranthene	0.05	"	2.4	0.23	7.9	<0.10	30	<0.10
yrene	0.06	"	2.2	0.18	6.8	<0.12	28	<0.10
enzo(a)anthracene	0.05	"	0.99	0.16	3.9	<0.10	17	<0.10
hrysene	0.06	"	1.3	0.17	4.3	<0.12	18	<0.12
nzo(b)fluoranthene	0.04	"	1.4	0.14	4.3	<0.08	14	<0.08
Benzo(k)fluoranthene	0.04	"	0.92	0.11	2.9	<0.08	13	<0.08
enzo(a)pyrene	0.05	"	1.0	0.12	3.6	<0.10	15	<0.10
deno(1,2,3-cd)pyrene	0.06	"	1.0	<0.12	2.7	<0.12	8.6	<0.12
ibenzo(a,h)anthracene	0.06	"	0.37	<0.12	0.92	<0.12	2.9	<0.12
enzo(ghi)perylene	0.05	"	1.0	<0.10	2.3	<0.10	7.1	<0.10
rrogate Recoveries		%						
2-Fluorophenol			32	41	25	65	64	34
5-Phenol			54	57	47	71	75	56
-Nitrobenzene			73	57	71	67	66	54
Fluorobiphenyl			81	57	78	72	78	74
,4,6-Tribromophenol			38	53	32	74	78	55
4-p-Terphenyl			101	86	85	80	87	85

	Client ID:		SB-5A	SB-5B	SB-5C	SB-5D	SB-6A	SB-7A
	Lab No.:		018154 04	018155 04	018156 04	018157 04	018158 04	018159 04
	Date Sampled:		06-Apr-2004	06-Apr-2004	06-Apr-2004	06-Apr-2004	06-Apr-2004	06-Apr-2004
Component	MDL	Units						
					(1)			
aphthalene	0.09	mg/kg	0.19	<0.18	0.69	0.86	<0.18	0.19
exachlorobutadiene	0.20	"	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
cenaphthylene	0.04	"	<0.08	<0.08	<0.08	0.09	<0.08	<0.08
cenaphthene	0.07	"	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14
luorene	0.06	"	<0.12	<0.12	0.17	0.18	<0.12	<0.12
Phenanthrene	0.03	"	1.6	0.08	1.6	1.9	<0.06	1.2
nthracene	0.06	"	0.21	<0.12	0.20	0.31	<0.12	0.16
luoranthene	0.05	"	2.9	<0.10	1.4	1.6	<0.10	1.7
yrene	0.06	"	2.3	<0.12	<0.12	1.6	<0.12	1.4
enzo(a)anthracene	0.05	"	1.3	<0.10	0.37	0.57	<0.10	0.79
hrysene	0.06	"	1.6	<0.12	0.49	0.86	<0.12	1.0
enzo(b)fluoranthene	0.04	"	1.6	<0.08	0.36	0.48	<0.08	0.94
Benzo(k)fluoranthene	0.04	"	1.2	<0.08	0.21	0.27	<0.08	0.63
enzo(a)pyrene	0.05	"	1.4	<0.10	0.23	0.33	<0.10	0.72
ideno(1,2,3-cd)pyrene	0.06	"	1.4	<0.12	0.17	0.21	<0.12	0.70
ibenzo(a,h)anthracene	0.06	"	0.30	<0.12	0.08	0.17	<0.12	0.26
Benzo(ghi)perylene	0.05	"	1.1	<0.10	0.17	0.26	<0.10	0.63
urrogate Recoveries		%						
2-Fluorophenol			34	42	15	74	68	39
5-Phenol			51	61	37	85	80	60
5-Nitrobenzene			55	53	37	77	69	72
-Fluorobiphenyl			70	72	68	84	75	80
2,4,6-Tribromophenol			51	64	48	79	84	47
14-p-Terphenyl			83	88	88	93	88	89

	Client ID:		SB-7B	SB-7B	SB-7B	SB-7B	SB-7B
	Lab No.:		018160 04	018160 04	018160 04	018160 04	018160 04
	Date Sampled:		06-Apr-2004	06-Apr-2004	06-Apr-2004	06-Apr-2004	06-Apr-2004
Component	**MDL**	**Units**		M. Spike	MS % Rec.	MS Dup	MSD % Rec.
aphthalene	0.09	mg/kg	0.71	0.49	<	0.50	<
lexachlorobutadiene	0.20	"	<0.40	<0.40	<	<0.40	<
cenaphthylene	0.04	"	<0.08	<0.08	<	<0.08	<
cenaphthene	0.07	"	<0.14	4.8	78	4.5	71
luorene	0.06	"	<0.12	<0.12	<	<0.12	<
Phenanthrene	0.03	"	0.70	0.56	<	0.79	<
nthracene	0.06	"	<0.12	<0.12	<	0.14	<
luoranthene	0.05	"	0.17	0.28	<	0.59	<
yrene	0.06	"	0.22	4.8	78	5.5	88
enzo(a)anthracene	0.05	"	0.14	0.14	<	0.33	<
hrysene	0.06	"	0.18	0.18	<	0.34	<
enzo(b)fluoranthene	0.04	"	0.09	<0.08	<	0.19	<
Benzo(k)fluoranthene	0.04	"	<0.08	<0.08	<	0.16	<
enzo(a)pyrene	0.05	"	0.10	<0.10	<	0.20	<
ideno(1,2,3-cd)pyrene	0.06	"	<0.12	<0.12	<	0.15	<
ibenzo(a,h)anthracene	0.06	"	<0.12	<0.12	<	<0.12	<
Benzo(ghi)perylene	0.05	"	<0.10	<0.10	<	0.17	<
urrogate Recoveries		%					
2-Fluorophenol			64	61	61	40	40
5-Phenol			75	69	69	56	56
5-Nitrobenzene			72	67	67	49	49
-Fluorobiphenyl			77	73	73	64	64
2,4,6-Tribromophenol			67	67	67	65	65
14-p-Terphenyl			90	81	81	87	87

	Client ID:		Method Blank	Blank Spike	% Recovery	GW-2-W	GW-2-W	GW-2-W	GW-2-W	GW-1-W
	Lab No.:		018161 04	018161 04	018161 04	018162 04	018162 04	018162 04	018162 04	018163 04
	Date Sampled:		06-Apr-2004	06-Apr-2004	06-Apr-2004	06-Apr-2004	06-Apr-2004	06-Apr-2004	06-Apr-2004	06-Apr-2004
Component	**MDL**	**Units**					Duplicate	M. Spike	MS % Rec.	
pH of VOC vials			7.00	-	-	7.00	-	-	-	9.00
Mercury	0.05	ug/L	<	1.0	100	<	<	1.0	100	<
Arsenic	0.010	mg/L	<	0.25	99	<	-	-	-	<
Barium	0.001	"	<	0.50	100	0.12	-	-	-	0.30
Cadmium	0.002	"	<	0.25	100	<	-	-	-	<
Chromium	0.002	"	<	0.50	99	<	-	-	-	<
Lead	0.010	"	<	0.50	100	<	-	-	-	<
Selenium	0.010	"	<	0.25	100	0.011	-	-	-	0.016
Silver	0.002	"	<	0.25	98	<	-	-	-	<

	Client ID:		Method Blank	Blank Spike	% Recovery	GW-2-W	GW-1-W
	Lab No.:		018161 04	018161 04	018161 04	018162 04	018163 04
	Date Sampled:		06-Apr-2004	06-Apr-2004	06-Apr-2004	06-Apr-2004	06-Apr-2004
Component	**MDL**	**Units**					
pH of VOC vials			7.00	-	-	7.00	9.00
Benzene	0.5	ug/L	<	47	95	<	<22
Ethylbenzene	0.5	"	<	49	98	<	<22
Toluene	0.5	"	<	47	94	<	<22
m&p-Xylene	1.0	"	<	99	99	<	<43
o-Xylene	0.5	"	<	48	96	<	<22
Xylenes(Total)	1.0	"	<	150	97	<	<65
Isopropylbenzene	0.5	"	<	46	93	<	<22
n-Propylbenzene	0.5	"	<	48	97	<	<22
p-Isopropyltoluene	0.5	"	<	47	94	<	<22
1,2,4-Trimethylbenzene	0.5	"	<	48	96	<	<22
1,3,5-Trimethylbenzene	0.5	"	<	49	98	<	<22
n-Butylbenzene	0.5	"	<	46	91	<	<22
sec-Butylbenzene	0.5	"	<	49	97	<	<22
tert-Butylbenzene	0.5	"	<	49	97	<	<22
Naphthalene	0.5	"	<	44	87	4.7	<22
Methyl-t-butylether	0.5	"	<	NS	-	<	<22
Surrogate Recoveries		%					
d4-1,2-Dichloroethane			88	89	89	77	90
d8-Toluene			82	83	83	87	81
Bromofluorobenzene			81	84	84	89	81

			Method	Blank	%	Blank Spike	%
	Client ID:		Blank	Spike	Recovery	Duplicate	Recovery
	Lab No.:		018161 04	018161 04	018161 04	018161 04	018161 04
	Date Sampled:		06-Apr-2004	06-Apr-2004	06-Apr-2004	06-Apr-2004	06-Apr-2004
Component	**MDL**	**Units**					
Phenol	1.1	ug/L	<	14	34	8.5	21
Bis(2-chloroethyl)ether	1.8	"	<	NS	-	NS	-
2-Chlorophenol	2.7	"	<	32	79	26	66
1,3-Dichlorobenzene	2.0	"	<	NS	-	NS	-
1,4-Dichlorobenzene	2.0	"	<	14	72	14	68
1,2-Dichlorobenzene	2.0	"	<	NS	-	NS	-
Bis(2-chloroisopropyl)ether	1.5	"	<	NS	-	NS	-
N-Nitroso-di-N-Propylamine	2.1	"	<	17	85	17	83
Hexachloroethane	2.0	"	<	NS	-	NS	-
Nitrobenzene	2.0	"	<	NS	-	NS	-
Isophorone	4.0	"	<	NS	-	NS	-
2-Nitrophenol	1.4	"	<	NS	-	NS	-
2,4-Dimethylphenol	3.5	"	<	NS	-	NS	-
Bis(2-chloroethoxy)methane	1.3	"	<	NS	-	NS	-
2,4-Dichlorophenol	1.2	"	<	NS	-	NS	-
1,2,4-Trichlorobenzene	2.0	"	<	14	70	14	69
Naphthalene	0.3	"	<	NS	-	NS	-
Hexachlorobutadiene	2.0	"	<	NS	-	NS	-
4-Chloro-3-Methylphenol	1.4	"	<	31	77	24	60
Hexachlorocyclopentadiene	2.0	"	<	NS	-	NS	-
2,4,6-Trichlorophenol	1.2	"	<	NS	-	NS	-
2-Chloronaphthalene	0.9	"	<	NS	-	NS	-
Dimethyl phthalate	1.1	"	<	NS	-	NS	-
Acenaphthylene	0.4	"	<	NS	-	NS	-
2,6-Dinitrotoluene	0.6	"	<	NS	-	NS	-
Acenaphthene	0.7	"	<	17	84	17	83
2,4-Dinitrophenol	4.8	"	<	NS	-	NS	-
4-Nitrophenol	1.4	"	<	14	36	<	<
2,4-Dinitrotoluene	0.5	"	<	17	85	16	79
Diethyl phthalate	1.1	"	<	NS	-	NS	-
4-Chlorophenylphenylether	0.9	"	<	NS	-	NS	-
Fluorene	0.3	"	<	NS	-	NS	-
4,6-Dinitro-2-methylphenol	1.5	"	<	NS	-	NS	-
N-Nitrosodiphenylamine	1.9	"	<	NS	-	NS	-
4-Bromophenylphenylether	0.3	"	<	NS	-	NS	-
Hexachlorobenzene	2.0	"	<	NS	-	NS	-
Pentachlorophenol	1.1	"	<	33	83	2.2	5.0
Phenanthrene	0.3	"	<	NS	-	NS	-
Anthracene	0.2	"	<	NS	-	NS	-
Di-n-butyl phthalate	1.1	"	<	NS	-	NS	-
Fluoranthene	0.2	"	0.3	NS	-	NS	-
Pyrene	0.3	"	0.3	18	89	18	88
Benzyl butyl phthalate	0.6	"	<	NS	-	NS	-
3,3-Dichlorobenzidine	1.7	"	<	NS	-	NS	-
Benzo(a)anthracene	0.2	"	<	NS	-	NS	-
Chrysene	0.3	"	<	NS	-	NS	-
Bis(2-ethylhexyl)phthalate	1.4	"	<	NS	-	NS	-
Di-n-octyl phthalate	1.1	"	<	NS	-	NS	-
Benzo(b)fluoranthene	0.4	"	<	NS	-	NS	-
Benzo(k)fluoranthene	0.4	"	0.5	NS	-	NS	-

			Method Blank	Blank Spike	% Recovery	Blank Spike Duplicate	% Recovery
	Client ID:						
	Lab No.:		018161 04	018161 04	018161 04	018161 04	018161 04
	Date Sampled:		06-Apr-2004	06-Apr-2004	06-Apr-2004	06-Apr-2004	06-Apr-2004
Component	**MDL**	**Units**					
Benzo(a)pyrene	0.5	"	0.5	NS	-	NS	-
Indeno(1,2,3-cd)pyrene	0.6	"	<	NS	-	NS	-
Dibenzo(a,h)anthracene	0.4	"	<	NS	-	NS	-
Benzo(ghi)perylene	0.4	"	<	NS	-	NS	-
N-Nitrosodimethylamine	10	"	<	NS	-	NS	-
Aniline	5.0	"	<	NS	-	NS	-
Carbazole	5.0	"	<	NS	-	NS	-
Benzyl alcohol	2.0	"	<	NS	-	NS	-
2-Methylphenol	3.2	"	<	NS	-	NS	-
3&4-Methylphenol	3.2	"	<	NS	-	NS	-
Benzoic acid	5.0	"	<	NS	-	NS	-
4-Chloroaniline	5.0	"	<	NS	-	NS	-
2-Methylnaphthalene	1.9	"	<	NS	-	NS	-
2,4,5-Trichlorophenol	0.8	"	<	NS	-	NS	-
2-Nitroaniline	5.0	"	<	NS	-	NS	-
3-Nitroaniline	5.0	"	<	NS	-	NS	-
Dibenzofuran	5.0	"	<	NS	-	NS	-
Benzidine	10	"	<	NS	-	NS	-
4-Nitroaniline	5.0	"	<	NS	-	NS	-
Surrogate Recoveries		%					
2-Fluorophenol			47	52	52	33	33
d5-Phenol			30	32	32	20	20
d5-Nitrobenzene			85	87	87	86	86
2-Fluorobiphenyl			80	72	72	77	77
2,4,6-Tribromophenol			74	87	87	53	53
d-14-p-Terphenyl			107	95	95	97	97

	Client ID:		GW-2-W
	Lab No.:		018162 04
	Date Sampled:		06-Apr-2004
Component	**MDL**	**Units**	
Phenol	1.1	ug/L	<
Bis(2-chloroethyl)ether	1.8	"	<
2-Chlorophenol	2.7	"	<
1,3-Dichlorobenzene	2.0	"	<
1,4-Dichlorobenzene	2.0	"	<
1,2-Dichlorobenzene	2.0	"	<
Bis(2-chloroisopropyl)ether	1.5	"	<
N-Nitroso-di-N-Propylamine	2.1	"	<
Hexachloroethane	2.0	"	<
Nitrobenzene	2.0	"	<
Isophorone	4.0	"	<
2-Nitrophenol	1.4	"	<
2,4-Dimethylphenol	3.5	"	<
Bis(2-chloroethoxy)methane	1.3	"	<
2,4-Dichlorophenol	1.2	"	<
1,2,4-Trichlorobenzene	2.0	"	<
Naphthalene	0.3	"	16
Hexachlorobutadiene	2.0	"	<
4-Chloro-3-Methylphenol	1.4	"	<
Hexachlorocyclopentadiene	2.0	"	<
2,4,6-Trichlorophenol	1.2	"	<
2-Chloronaphthalene	0.9	"	<
Dimethyl phthalate	1.1	"	<
Acenaphthylene	0.4	"	<
2,6-Dinitrotoluene	0.6	"	<
Acenaphthene	0.7	"	14
2,4-Dinitrophenol	4.8	"	<
4-Nitrophenol	1.4	"	<
2,4-Dinitrotoluene	0.5	"	<
Diethyl phthalate	1.1	"	<
4-Chlorophenylphenylether	0.9	"	<
Fluorene	0.3	"	23
4,6-Dinitro-2-methylphenol	1.5	"	<
N-Nitrosodiphenylamine	1.9	"	<
4-Bromophenylphenylether	0.3	"	<
Hexachlorobenzene	2.0	"	<
Pentachlorophenol	1.1	"	<
Phenanthrene	0.3	"	100
Anthracene	0.2	"	29
Di-n-butyl phthalate	1.1	"	<
Fluoranthene	0.2	"	71
Pyrene	0.3	"	50
Benzyl butyl phthalate	0.6	"	<
3,3-Dichlorobenzidine	1.7	"	<
Benzo(a)anthracene	0.2	"	32
Chrysene	0.3	"	31
Bis(2-ethylhexyl)phthalate	1.4	"	<
Di-n-octyl phthalate	1.1	"	<
Benzo(b)fluoranthene	0.4	"	26
Benzo(k)fluoranthene	0.4	"	17

	Client ID:		GW-2-W
	Lab No.:		018162 04
	Date Sampled:		06-Apr-2004
Component	**MDL**	**Units**	
Benzo(a)pyrene	0.5	"	23
Indeno(1,2,3-cd)pyrene	0.6	"	15
Dibenzo(a,h)anthracene	0.4	"	6.6
Benzo(ghi)perylene	0.4	"	12
N-Nitrosodimethylamine	10	"	<
Aniline	5.0	"	<
Carbazole	5.0	"	16
Benzyl alcohol	2.0	"	<
2-Methylphenol	3.2	"	<
3&4-Methylphenol	3.2	"	<
Benzoic acid	5.0	"	<
4-Chloroaniline	5.0	"	<
2-Methylnaphthalene	1.9	"	7.5
2,4,5-Trichlorophenol	0.8	"	<
2-Nitroaniline	5.0	"	<
3-Nitroaniline	5.0	"	<
Dibenzofuran	5.0	"	18
Benzidine	10	"	<
4-Nitroaniline	5.0	"	<
Surrogate Recoveries		%	
2-Fluorophenol			33
d5-Phenol			24
d5-Nitrobenzene			80
2-Fluorobiphenyl			73
2,4,6-Tribromophenol			75
d-14-p-Terphenyl			44

	018151 04
	018152 04
	018153 04
	018154 04
	018155 04
	018156 04
	018157 04
	018158 04
	018159 04
	018160 04
Date Analysed:	04/04/14
Date Prepared:	04/04/08
Batch Code:	**0408SPX1**
2-Chloronaphthalene	018146 04
	018147 04
	018148 04
	018149 04
	018150 04
	018151 04
	018152 04
	018153 04
	018154 04
	018155 04
	018156 04
	018157 04
	018158 04
	018159 04
	018160 04
Date Analysed:	04/04/14
Date Prepared:	04/04/08
Batch Code:	**0408SPX1**
Di-n-butyl phthalate	018146 04
	018147 04
	018148 04
	018149 04
	018150 04
	018151 04
	018152 04
	018153 04
	018154 04
	018155 04
	018156 04
	018157 04
	018158 04
	018159 04
	018160 04
Date Analysed:	04/04/14
Date Prepared:	04/04/08

Batch Code:	**0408SPX1**
N-Nitrosodimethylamine	018146 04
	018147 04
	018148 04
	018149 04
	018150 04
	018151 04
	018152 04
	018153 04
	018154 04
	018155 04
	018156 04
	018157 04
	018158 04
	018159 04
	018160 04
Date Analysed:	04/04/14
Date Prepared:	04/04/08

CHAIN OF CUSTODY

ANALYTICAL SERVICES INC.
5555 North Service Road
Burlington, Ontario L7L 5H7

Toll Free: 1-800-668-0639
Tel: (905) 332-8788
Fax: (905) 332-9169

CLIENT INFORMATION

Company Name: EnSol, Inc.
Project Manager: Kristin Price
Address: 452 Third St.
Niagara Falls, NY 14301
Phone #: 716 285-3120 Fax #: 716 285 3928
Sampled by: K. Price

MOE - 018146

ANALYSIS REQUESTED

PSC Use Only	Field Sample ID	# Bottles	Matrix	Date	Time	SVOC 8270	VOC 8021	RCRA Metals	Level of contamination (low, high, unknown)
018147	GW-1	1	Soil	4-6-04	9:10	X	X	X	180 ppb
48	SB-2A				10:20	X		X	
49	SB-2B				10:25	X		X	
50	SB-3A				10:40	X		X	
51	SB-3B				10:40	X		X	
52	SB-4A				11:00	X		X	
53	SB-4B				11:00	X		X	
54	SB-5A				12:05	X		X	
55	SB-5B				12:05	X		X	
56	SB-5C				12:15	X		X	

TAT (Turnaround Time)

RUSH TAT MUST HAVE PRIOR APPROVAL

*some exceptions apply please contact Lab

- STD 10 Business Days ☐
- RUSH 5 Business Days ☒
- RUSH 2 Business Days ☐
- RUSH 1 Business Days ☐
- Other Business Days ____

PROJECT INFORMATION

Project #: 04-0008
Site: 303 Woodward
PO#:
PSC Quote #:
PSC Project #:
PSC Contact: Kevin Zielinski / mike challis

SPECIAL DETECTION LIMITS

MISA ☐

SPECIAL REQUIREMENTS / REGULATIONS

REMARKS

2.2°C

Client Signature: x Kristin K. Price
Affiliation: EnSol
Date/Time: 4/6/04 3:45 pm

Received By: Kevin Zielinski
Affiliation: PSC
Date/Time: 4/6/04 3:45 pm

Rec'd By:
Date/Time

WHITE - LAB / YELLOW - CLIENT

SEE OVER FOR COMPLETION & SAMPLING INSTRUCTIONS

ANALYTICAL SERVICES INC.
5555 North Service Road
Burlington, Ontario L7L 5H7

Toll Free: 1-800-668-0639
Tel: (905) 332-8788
Fax: (905) 332-9169

CLIENT INFORMATION

Company Name: EnSol, Inc
Project Manager: Kristen Price
Address: 452 Third St
Niagara Falls, NY 14301
Phone #: 716 285-3920 Fax #: 716 285-3928
Sampled by: K Price

MBW-018161

ANALYSIS REQUESTED

PSC Use Only	Field Sample ID	# Bottles	Matrix	Date	Time	SVOC 8270	VOC 8021	X RCRA Metals	Level of contamination (low, high, unknown)
018157	SB-5D	1	Soil	4-6-04	12:20	X		X	1 80ML
58	SB-6A	↓	↓		12:30	X		X	↓
59	SB-7A				13:45	X		X	
60	SB-7B				12:45	X		X	
62	GW-2-W	4 8	Water		14:45	X	X	X	1 40ML, 250P, 4o X2
63	GW-1-W	3	↓	↓	15:30		X	X	250P, 4o X2

TAT (Turnaround Time)
RUSH TAT MUST HAVE PRIOR APPROVAL
*some exceptions apply please contact Lab

- STD 10 Business Days ☐
- RUSH 5 Business Days ☒
- RUSH 2 Business Days ☐
- RUSH 1 Business Days ☐
- Other Business Days ____

PROJECT INFORMATION
Project #: 04-0008
Site: x 303 Woodward
PO#:
PSC Quote #:
PSC Project #:
PSC Contact: Kevin Zielinski / Mike Challis

SPECIAL DETECTION LIMITS
MISA ☐

SPECIAL REQUIREMENTS / REGULATIONS

REMARKS
2.2°C.

Client Signature: x Kristen K Price
Affiliation: EnSol Inc
Date/Time: 4/6/04 3:45 pm

Received By: Kevin Zielinski
Affiliation: PSC
Date/Time: 4/6/04 3:45 pm

Rec'd By:
Date/Time

WHITE - LAB / YELLOW - CLIENT

SEE OVER FOR COMPLETION & SAMPLING INSTRUCTIONS

PSC ANALYTICAL SERVICES Inc.

Certificate of Analysis

CLIENT INFORMATION

Attention:	Rob Robinson
Client Name:	Ensol. Inc.
Project:	03-0045,04-0008
Project Desc:	303 Woodward Ave.
Address:	452 Third Street Niagara Falls, NY 14301
Fax Number:	716-285-3928
Phone Number:	716-285-3920

LABORATORY INFORMATION

Contact:	Mike Challis, B.Sc, C.Chem.
Project:	AN040364
Date Received:	22-Apr-2004
Date Reported:	29-Apr-2004
Submission No.:	4D0872
Sample No.:	021110-021114

8A-913

NOTES: *'-' = not analysed '<' = less than Method Detection Limit (MDL) 'NA' = no data available*
LOQ can by determined for all analytes by multiplying the appropriate MDL X 3.33
Solids data is based on dry weight except for biota analyses.
Organic analyses are not corrected for extraction recovery standards except for isotope dilution methods, (i.e. CARB 429 PAH, all PCDD/F and DBD/DBF analyses)
The enclosed copy of the Chain of Custody Record may contain information necessary for the interpretation of the data.

Methods used by PSC Analytical Services are based upon those found in 'Standard Methods for the Examination of Water and Wastewater', Twentieth Edition. Other methods are based on the principles of MISA or EPA methodologies. New York State: ELAP Identification Number 10756.

All work recorded herein has been done in accordance with normal professional standards using accepted testing methodologies, quality assurance and quality control procedures except where otherwise agreed to by the client and testing company in writing. Any and all use of these test results shall be limited to the actual cost of the pertinent analysis done. There is no other warranty expressed or implied. Your samples will be retained at PSC Analytical Services for a period of three weeks from receipt of data or as per contract.

COMMENTS:

Certified by: MC

3555 NORTH SERVICE ROAD, BURLINGTON, ONTARIO, CANADA L7L 5H7 T 905 332 8788 F 905 332 9169 W www.psconalytical.com

PASC - Certificate of Analysis

	Client ID:		SB-8A	SB-8B	SB-9A	SB-9B	SB-9B	SB-9B	SB-9B	Method Blank	Blank Spike	% Recovery
	Lab No.:		021111 04	021112 04	021113 04	021114 04	021114 04	021114 04	021114 04	021110 04	021110 04	021110 04
	Date Sampled:		21-Apr-2004	21-Apr-2004	21-Apr-2004	21-Apr-2004	21-Apr-2004	21-Apr-2004	21-Apr-2004	21-Apr-2004	21-Apr-2004	21-Apr-2004
Component	**MDL**	**Units**					Duplicate	M. Spike	MS % Rec.			
Mercury	40	ug/kg	0.36	0.18	0.27	0.080	0.080	1.1	100	<	1000	100
Arsenic	1000	ug/kg	42000	31000	20000	9300	10000	34000	97	<	26000	110
Barium	500	"	220000	500000	140000	120000	130000	180000	100	<	53000	110
Cadmium	500	"	3400	780	2000	940	920	24000	92	<	26000	100
Chromium	500	"	96000	31000	43000	23000	24000	72000	96	<	52000	110
Lead	1000	"	610000	350000	1400000	110000	130000	192000	150	<	52000	100
Selenium	1000	"	<	2500	1000	<	<	24000	95	<	26000	100
Silver	500	"	<	<	<	<	<	25000	100	<	26000	100

Metals via SW846 6010
Mercury via SW846 7471

4/29/04

PASC - Summary of Analysis Pre. Dates

Batch Code:	**0427MBS1**
Mercury	021110 04
	021111 04
	021112 04
	021113 04
	021114 04
Date Analysed:	04/04/28
Date Prepared:	04/04/27
Batch Code:	**0427VPX1**
Arsenic	021110 04
	021111 04
	021112 04
	021113 04
	021114 04
Date Analysed:	04/04/27
Date Prepared:	04/04/27

PSC ANALYTICAL SERVICES Inc.

Composite of SB-5

Certificate of Analysis

CLIENT INFORMATION

Attention:	John Battaglia
Client Name:	Ensol. Inc.
Project:	03-0045,04-0008
Project Desc:	303 Woodward Avc.
Address:	452 Third Street Niagara Falls, NY 14301
Fax Number:	716-285-3928
Phone Number:	716-285-3920

LABORATORY INFORMATION

Contact:	Mike Challis, B.Sc, C.Chem.
Project:	AN040364
Date Received:	13-May-2004
Date Reported:	27-May-2004
Submission No.:	4E0496
Sample No.:	026840-026842

NOTES: *'-' = not analysed '<' = less than Method Detection Limit (MDL) 'NA' = no data available*
LOQ can by determined for all analytes by multiplying the appropriate MDL X 3.33
Solids data is based on dry weight except for biota analyses.
Organic analyses are not corrected for extraction recovery standards except for isotope dilution methods, (i.e. CARB 429 PAH, all PCDD/F and DBD/DBF analyses)
The enclosed copy of the Chain of Custody Record may contain information necessary for the interpretation of the data.

Methods used by PSC Analytical Services are based upon those found in 'Standard Methods for the Examination of Water and Wastewater', Twentieth Edition. Other methods are based on the principles of MISA or EPA methodologies. New York State: ELAP Identification Number 10756.

All work recorded herein has been done in accordance with normal professional standards using accepted testing methodologies, quality assurance and quality control procedures except where otherwise agreed to by the client and testing company in writing. Any and all use of these test results shall be limited to the actual cost of the pertinent analysis done. There is no other warranty expressed or implied. Your samples will be retained at PSC Analytical Services for a period of three weeks from receipt of data or as per contract.

COMMENTS:

(1) Cadmium over regulation 558 Limit
(2) Received past hold time - data within statistical control

Certified by: M.C.

5/27/04

PASC - Certificate of Analysis

			Method	Blank	%	SB-5A to 5D
	Client ID:		Blank	Spike1	Recovery	Comp tnv
	Lab No.:		026840 04	026840 04	026840 04	026842 04
	Date Sampled:		06-Apr-2004	06-Apr-2004	06-Apr-2004	18-May-2004
Component	**MDL**	**Units**				
Mercury	0.50	ug/L	<	10	100	< (1)
Arsenic	0.250	mg/L	<	1.3	110	<
Barium	0.10	"	<	2.6	110	2.1
Cadmium	0.050	"	<	1.3	110	1.0
Chromium	0.500	"	<	2.6	110	<
Lead	0.500	"	<	2.6	110	3.5
Selenium	0.100	"	<	1.3	110	<
Silver	0.500	"	<	1.3	100	<

PASC - Certificate of Analysis

			SB-5A to
	Client ID:		5D Comp
	Lab No.:		026841 04
	Date Sampled:		06-Apr-2004
Component	**MDL**	**Units**	
			(2)
pH after 3.5 ml of 1N HCl addition			5.68
pH after extraction (semi-vols/metals)			6.25
pH initial (5g + 96.5ml water)			9.39
pH of extraction fluid (semi-vols/metals)			2.93
# Samples Composited			4.0

5/27/04

PASC - Summary of Analysis Pre. Dates

Batch Code:	**0518MBL1**
Mercury	026840 04
	026842 04
Date Analysed:	04/05/18
Date Prepared:	04/05/18

Batch Code:	**0518STL1**
Arsenic	026840 04
	026842 04
Date Analysed:	04/05/18
Date Prepared:	04/05/18

3. Additional Excavation Samples (TCLP for disposal)

PSC ANALYTICAL SERVICES Inc.

Certificate of Analysis

CLIENT INFORMATION

Attention:	Rob Robinson
Client Name:	Ensol. Inc.
Project:	03-0045,04-0008
Project Desc:	303 Woodward Ave.
Address:	452 Third Street Niagara Falls, NY 14301
Fax Number:	716-285-3928
Phone Number:	716-285-3920

LABORATORY INFORMATION

Contact:	Mike Challis, B.Sc, C.Chem.
Project:	AN040364
Date Received:	01-Jun-2004
Date Reported:	04-Jun-2004
Submission No.:	4F0046
Sample No.:	031655-031664

NOTES: *'-' = not analysed '<' = less than Method Detection Limit (MDL) 'NA' = no data available*
LOQ can by determined for all analytes by multiplying the appropriate MDL X 3.33
Solids data is based on dry weight except for biota analyses.
Organic analyses are not corrected for extraction recovery standards except for isotope dilution methods, (i.e. CARB 429 PAH, all PCDD/F and DBD/DBF analyses)
The enclosed copy of the Chain of Custody Record may contain information necessary for the interpretation of the data.

Methods used by PSC Analytical Services are based upon those found in 'Standard Methods for the Examination of Water and Wastewater', Twentieth Edition. Other methods are based on the principles of MISA or EPA methodologies. New York State: ELAP Identification Number 10756.

All work recorded herein has been done in accordance with normal professional standards using accepted testing methodologies, quality assurance and quality control procedures except where otherwise agreed to by the client and testing company in writing. Any and all use of these test results shall be limited to the actual cost of the pertinent analysis done. There is no other warranty expressed or implied. Your samples will be retained at PSC Analytical Services for a period of three weeks from receipt of data or as per contract.

COMMENTS:

Certified by: M. C

555 NORTH SERVICE ROAD, BURLINGTON, ONTARIO, CANADA L7L 5H7 T 905 332 8788 F 905 332 9169 W www.psconalytical.com

	Client ID:		Area 4	Area 5	Area 7	Area 8	Area 9
	Lab No.:		031656 04	031658 04	031660 04	031662 04	031664 04
	Date Sampled:		24-May-2004	24-May-2004	24-May-2004	24-May-2004	24-May-2004
Component	**MDL**	**Units**					
pH after 3.5 ml of 1N HCl addition			1.94	1.73	5.13	1.97	1.89
pH after extraction (semi-vols/metals)			5.60	5.11	4.39	5.15	5.14
pH initial (5g + 96.5ml water)			8.84	8.37	9.04	8.73	8.93
pH of extraction fluid (semi-vols/metals)			4.92	4.92	2.92	4.92	4.92

	Client ID:		Area 4	Area 4	Area 4	Area 4	Area 5	Area 7	Area 8	Area 9
	Lab No.:		031657 04	031657 04	031657 04	031657 04	031659 04	031661 04	031663 04	031665 04
	Date Sampled:		03-Jun-2004	03-Jun-2004	03-Jun-2004	03-Jun-2004	03-Jun-2004	03-Jun-2004	03-Jun-2004	03-Jun-2004
Component	**MDL**	**Units**		Duplicate	M. Spike	MS % Rec.				
Mercury	0.50	ug/L	<	<	10	100	<	<	<	<
Arsenic	0.250	mg/L	<	<	1.3	99	<	<	<	<
Barium	0.100	"	0.91	0.91	3.4	98	0.41	0.72	0.43	0.66
Cadmium	0.050	"	<	<	1.2	96	<	<	<	<
Chromium	0.500	"	<	<	2.4	97	<	<	<	<
Lead	0.500	"	<	<	2.5	97	<	<	<	<
Selenium	0.100	"	<	<	1.3	100	<	<	<	<
Silver	0.500	"	<	<	1.3	100	<	<	<	<

			Method Blank	Blank Spike	% Recovery
	Client ID:		Blank	Spike	Recovery
	Lab No.:		031655 04	031655 04	031655 04
	Date Sampled:		03-Jun-2004	03-Jun-2004	03-Jun-2004
Component	**MDL**	**Units**			
Mercury	0.50	ug/L	<	10	100
Arsenic	0.250	mg/L	<	1.3	100
Barium	0.100	"	<	2.5	100
Cadmium	0.050	"	<	1.3	100
Chromium	0.500	"	<	2.6	100
Lead	0.500	"	<	2.6	100
Selenium	0.100	"	<	1.3	100
Silver	0.500	"	<	1.3	100

PASC - Summary of Analysis Pre. Dates

Batch Code:	**0602RGA2**	**0602RGA3**	**0602RGA4**	**0602RGA5**	**0602RGA6**
pH after 3.5 ml of 1N HCl addition	031656 04	031658 04	031660 04	031662 04	031664 04
Date Analysed:	04/06/03	04/06/03	04/06/03	04/06/03	04/06/03
Date Prepared:	04/06/02	04/06/02	04/06/02	04/06/02	04/06/02

Batch Code:	**0603MBL2**
Mercury	031655 04
Date Analysed:	04/06/03
Date Prepared:	04/06/03

Batch Code:	**0603STL1**
Arsenic	031655 04
Date Analysed:	04/06/03
Date Prepared:	04/06/03

Batch Code:	**0603MBL2**
Mercury	031657 04
	031659 04
	031661 04
	031663 04
	031665 04
Date Analysed:	04/06/03
Date Prepared:	04/06/03

Batch Code:	**0603STL1**
Arsenic	031657 04
	031659 04
	031661 04
	031663 04
	031665 04
Date Analysed:	04/06/03
Date Prepared:	04/06/03

CHAIN OF CUSTODY

ANALYTICAL SERVICES
5555 North Service Road
Burlington, Ontario L7L 5H7

Toll Free: 1-800-668-0639
Tel: (905) 332-8788
Fax: (905) 332-9169

Page ____ of ____

CLIENT INFORMATION

Company Name: EnSol, Inc
Project Manager: _____
Address: 452 Third Street
Niagara Falls, N.Y. 14301
Phone #: 285-3920 Fax #: 285-3928
Sampled by: Rob Robinson

MB 29693

ANALYSIS REQUESTED

RCRA 8 metals

MB-31655

2x189A

Philip Use Only	Field Sample ID	# Bottles	Matrix	Date	Time		
94	Area 4	2	Soil	5/24/04	13:30	X	31656-57
95	Area 5	2	"	"	13:30	X	31658-59
96	Area 7	2	"	"	13:30	X	31660-61
97	Area 8	2	"	"	13:30	X	31662-63
98	Area 9	2	"	"	13:30	X	31664-65

TAT (Turnaround Time)

RUSH TAT MUST HAVE PRIOR APPROVAL

*some exceptions apply please contact Lab

- STD 10 Business Days ☐
- RUSH 5 Business Days ☑
- RUSH 2 Business Days ☐
- RUSH 1 Business Days ☐
- Other Business Days ____

PROJECT INFORMATION

Project #: 04-0008
Site: 303 Woodward Ave
PO#: _____
Philip Quote #: _____
Philip Project #: _____
Philip Contact: _____

SPECIAL DETECTION LIMITS

MISA ☐

SPECIAL REQUIREMENTS / REGULATIONS

REMARKS

Client Signature: _____
Affiliation: _____
Date/Time: _____

Received By: _____
Affiliation: PSC
Date/Time: 5-25-4 2:00

Rec'd By: _____
Date/Time _____

WHITE - LAB / YELLOW - CLIENT

SEE OVER FOR COMPLETION & SAMPLING INSTRUCT

TOTAL P.07

4. Backfill Characterization Samples

PARADIGM
ENVIRONMENTAL SERVICES, INC.

179 Lake Avenue, Rochester, NY 14608 (585) 647-2530 FAX (585) 647-3311

lient: Ensol, Inc.

Client Job Site: Tonawanda Landfill
Clean Soil

lient Job No.: N/A

Field Location: #1
ield ID No.: N/A

Lab Project No.: 04-1418
Lab Sample No.: 5229

Sample Type: Solid

Date Sampled: 05/21/2004
Date Received: 05/24/2004

Laboratory Report for Solid Waste Analysis

Parameter	Date Analyzed	Analytical Method	Result (mg/kg)
Arsenic	05/28/2004	SW846 6010	4.06
Barium	05/28/2004	SW846 6010	132
Cadmium	05/28/2004	SW846 6010	1.54
Chromium	05/28/2004	SW846 6010	11.7
Lead	05/28/2004	SW846 6010	197
Mercury	05/25/2004	SW846 7471	0.149
Selenium	05/28/2004	SW846 6010	<0.590
Silver	05/28/2004	SW846 6010	<1.18

ELAP ID No.:10958

omments:

pproved By: _____
Bruce Hoogesteger, Technical Director

This report is part of a multipage document and should only be evaluated in its entirety. Chain of Custody provides additional sample information, including compliance with sample condition requirements upon receipt

File ID:041418.xls

PARADIGM
ENVIRONMENTAL SERVICES, INC.

179 Lake Avenue, Rochester, NY 14608 (585) 647-2530 FAX (585) 647-3311

Client: Ensol, Inc.

Client Job Site: Tonawanda Landfill
Clean Soil

Client Job No.: N/A

Field Location: #2

Field ID No.: N/A

Lab Project No.: 04-1418

Lab Sample No.: 5230

Sample Type: Solid

Date Sampled: 05/21/2004

Date Received: 05/24/2004

Laboratory Report for Solid Waste Analysis

Parameter	Date Analyzed	Analytical Method	Result (mg/kg)
Arsenic	05/28/2004	SW846 6010	2.78
Barium	05/28/2004	SW846 6010	70.9
Cadmium	05/28/2004	SW846 6010	1.06
Chromium	05/28/2004	SW846 6010	7.97
Lead	05/28/2004	SW846 6010	82.5
Mercury	05/25/2004	SW846 7471	0.0749
Selenium	05/28/2004	SW846 6010	<0.542
Silver	05/28/2004	SW846 6010	<1.08

ELAP ID No.:10958

Comments:

Approved By: _____
Bruce Hoogesteger, Technical Director

This report is part of a multipage document and should only be evaluated in its entirety. Chain of Custody provides additional sample information, including compliance with sample condition requirements upon receipt

File ID:041418.xls

PARADIGM
ENVIRONMENTAL SERVICES, INC.
179 Lake Avenue, Rochester, NY 14608 (585) 647-2530 FAX (585) 647-3311

Client: Ensol, Inc.

Client Job Site: Tonawanda Landfill
Clean Soil

Client Job No.: N/A

Field Location: #3
Field ID No.: N/A

Lab Project No.: 04-1418
Lab Sample No.: 5231

Sample Type: Solid

Date Sampled: 05/21/2004
Date Received: 05/24/2004

Laboratory Report for Solid Waste Analysis

Parameter	Date Analyzed	Analytical Method	Result (mg/kg)
Arsenic	05/28/2004	SW846 6010	4.44
Barium	05/28/2004	SW846 6010	101
Cadmium	05/28/2004	SW846 6010	1.39
Chromium	05/28/2004	SW846 6010	13.5
Lead	05/28/2004	SW846 6010	23.8
Mercury	05/25/2004	SW846 7471	0 0374
Selenium	05/28/2004	SW846 6010	<0.497
Silver	05/28/2004	SW846 6010	<0.993

ELAP ID No.:10958

Comments:

Approved By: _____
Bruce Hoogesteger, Technical Director

This report is part of a multipage document and should only be evaluated in its entirety. Chain of Custody provides additional sample information, including compliance with sample condition requirements upon receipt

File ID:041418.xls

PARADIGM
ENVIRONMENTAL SERVICES, INC.
179 Lake Avenue Rochester, New York 14608 (585) 647 - 2530 FAX (585) 647 - 3311

Semi-Volatile STARS Analysis Report for Soils/Solids/Sludges

Client: Ensol Inc.

Client Job Site:	Tonawanda Landfill	**Lab Project Number:**	04-1418
	Clean Soil	**Lab Sample Number:**	5229
Client Job Number:	NA		
Field Location:	Town of Tonawanda Clean F	**Date Sampled:**	05/21/2004
Field ID Number:	#1	**Date Received:**	05/24/2004
Sample Type:	Soil	**Date Analyzed:**	05/25/2004

Base / Neutrals	Results in ug / Kg
Acenaphthene	ND< 312
Anthracene	ND< 312
Benzo (a) anthracene	ND< 312
Benzo (a) pyrene	ND< 312
Benzo (b) fluoranthene	ND< 312
Benzo (g,h,i) perylene	ND< 312
Benzo (k) fluoranthene	ND< 312
Chrysene	ND< 312
Dibenz (a,h) anthracene	ND< 312
Fluoranthene	413
Fluorene	ND< 312
Indeno (1,2,3-cd) pyrene	ND< 312
Naphthalene	ND< 312
Phenanthrene	ND< 312
Pyrene	323

ELAP Number 10958 Method: EPA 8270C Data File: 19540.D

Comments: ND denotes Non Detect
ug / Kg = microgram per Kilogram

Signature:

Bruce Hoogesteger: Technical Director

PARADIGM
ENVIRONMENTAL SERVICES, INC.
179 Lake Avenue Rochester, New York 14608 (585) 647 - 2530 FAX (585) 647 - 3311

Semi-Volatile STARS Analysis Report for Soils/Solids/Sludges

Client: Ensol Inc.

Client Job Site:	Tonawanda Landfill	**Lab Project Number:**	04-1418
	Clean Soil	**Lab Sample Number:**	5230
Client Job Number:	NA		
Field Location:	Town of Tonawanda Clean F	**Date Sampled:**	05/21/2004
Field ID Number:	#2	**Date Received:**	05/24/2004
Sample Type:	Soil	**Date Analyzed:**	05/25/2004

Base / Neutrals	Results in ug / Kg
Acenaphthene	ND< 315
Anthracene	ND< 315
Benzo (a) anthracene	ND< 315
Benzo (a) pyrene	ND< 315
Benzo (b) fluoranthene	ND< 315
Benzo (g,h,i) perylene	ND< 315
Benzo (k) fluoranthene	ND< 315
Chrysene	ND< 315
Dibenz (a,h) anthracene	ND< 315
Fluoranthene	ND< 315
Fluorene	ND< 315
Indeno (1,2,3-cd) pyrene	ND< 315
Naphthalene	ND< 315
Phenanthrene	ND< 315
Pyrene	ND< 315

ELAP Number 10958 Method: EPA 8270C Data File: 19541.D

Comments: ND denotes Non Detect
ug / Kg = microgram per Kilogram

Signature:

Bruce Hoogesteger: Technical Director

PARADIGM
ENVIRONMENTAL SERVICES, INC.
179 Lake Avenue Rochester, New York 14608 (585) 647 - 2530 FAX (585) 647 - 3311

Semi-Volatile STARS Analysis Report for Soils/Solids/Sludges

Client: Ensol Inc.

Client Job Site:	Tonawanda Landfill	**Lab Project Number:**	04-1418
	Clean Soil	**Lab Sample Number:**	5231
Client Job Number:	NA		
Field Location:	Town of Tonawanda Clean F	**Date Sampled:**	05/21/2004
Field ID Number:	#3	**Date Received:**	05/24/2004
Sample Type:	Soil	**Date Analyzed:**	05/25/2004

Base / Neutrals	Results in ug / Kg
Acenaphthene	ND< 310
Anthracene	ND< 310
Benzo (a) anthracene	ND< 310
Benzo (a) pyrene	ND< 310
Benzo (b) fluoranthene	ND< 310
Benzo (g,h,i) perylene	ND< 310
Benzo (k) fluoranthene	ND< 310
Chrysene	ND< 310
Dibenz (a,h) anthracene	ND< 310
Fluoranthene	ND< 310
Fluorene	ND< 310
Indeno (1,2,3-cd) pyrene	ND< 310
Naphthalene	ND< 310
Phenanthrene	ND< 310
Pyrene	ND< 310

ELAP Number 10958 Method: EPA 8270C Data File: 19542.D

Comments: ND denotes Non Detect
ug / Kg = microgram per Kilogram

Signature:

Bruce Hoogesteger: Technical Director

PARADIGM
ENVIRONMENTAL SERVICES, INC.
179 Lake Avenue Rochester, New York 14608 (585) 647 - 2530 FAX (585) 647 - 3311

Volatile STARS Analysis Report for Soils/Solids/Sludges

Client: Ensol Inc.

Client Job Site:	Tonawaqnda Landfill	**Lab Project Number:**	04-1418
	Clean Soil	**Lab Sample Number:**	5229
Client Job Number:	NA		
Field Location:	Town of Tonawanda Clean Fil	**Date Sampled:**	05/21/2004
Field ID Number:	#1	**Date Received:**	05/24/2004
Sample Type:	Soil	**Date Analyzed:**	05/26/2004

Aromatics	Results in ug / Kg
Benzene	ND< 6.56
n-Butylbenzene	ND< 6.56
sec-Butylbenzene	ND< 6.56
tert-Butylbenzene	ND< 6.56
Ethylbenzene	ND< 6.56
n-Propylbenzene	ND< 6.56
Isopropylbenzene	ND< 6.56
p-Isopropyltoluene	ND< 6.56
Naphthalene	ND< 16.4
Toluene	ND< 6.56
1,2,4-Trimethylbenzene	ND< 6.56
1,3,5-Trimethylbenzene	ND< 6.56
m,p-Xylene	ND< 6.56
o-Xylene	ND< 6.56
Miscellaneous	
Methyl tert-butyl Ether	ND< 6.56

ELAP Number 10958 Method: EPA 8021B (GC/MS) Data File: 21541.D

Comments: ND denotes Non Detect
ug / Kg = microgram per Kilogram

Signature: _____
Bruce Hoogesteger: Technical Director

PARADIGM
ENVIRONMENTAL SERVICES, INC.
179 Lake Avenue Rochester, New York 14608 (585) 647 - 2530 FAX (585) 647 - 3311

Volatile STARS Analysis Report for Soils/Solids/Sludges

Client: Ensol Inc.

Client Job Site:	Tonawaqnda Landfill	**Lab Project Number:**	04-1418
	Clean Soil	**Lab Sample Number:**	5230
Client Job Number:	NA		
Field Location:	Town of Tonawanda Clean Fil	**Date Sampled:**	05/21/2004
Field ID Number:	#2	**Date Received:**	05/24/2004
Sample Type:	Soil	**Date Analyzed:**	05/26/2004

Aromatics	Results in ug / Kg
Benzene	ND< 7.99
n-Butylbenzene	ND< 7.99
sec-Butylbenzene	ND< 7.99
tert-Butylbenzene	ND< 7.99
Ethylbenzene	ND< 7.99
n-Propylbenzene	ND< 7.99
Isopropylbenzene	ND< 7.99
p-Isopropyltoluene	ND< 7.99
Naphthalene	ND< 20.0
Toluene	ND< 7.99
1,2,4-Trimethylbenzene	ND< 7.99
1,3,5-Trimethylbenzene	ND< 7.99
m,p-Xylene	ND< 7.99
o-Xylene	ND< 7.99
Miscellaneous	
Methyl tert-butyl Ether	ND< 7.99

ELAP Number 10958 Method: EPA 8021B (GC/MS) Data File: 21542.D

Comments: ND denotes Non Detect
ug / Kg = microgram per Kilogram

Signature:

Bruce Hoogesteger: Technical Director

PARADIGM
ENVIRONMENTAL SERVICES, INC.
179 Lake Avenue Rochester, New York 14608 (585) 647 - 2530 FAX (585) 647 - 3311

Volatile STARS Analysis Report for Soils/Solids/Sludges

Client: Ensol Inc.

Client Job Site:	Tonawaqnda Landfill	**Lab Project Number:**	04-1418
	Clean Soil	**Lab Sample Number:**	5231
Client Job Number:	NA		
Field Location:	Town of Tonawanda Clean Fil	**Date Sampled:**	05/21/2004
Field ID Number:	#3	**Date Received:**	05/24/2004
Sample Type:	Soil	**Date Analyzed:**	05/26/2004

Aromatics	Results in ug / Kg
Benzene	ND< 8.24
n-Butylbenzene	ND< 8.24
sec-Butylbenzene	ND< 8.24
tert-Butylbenzene	ND< 8.24
Ethylbenzene	ND< 8.24
n-Propylbenzene	ND< 8.24
Isopropylbenzene	ND< 8.24
p-Isopropyltoluene	ND< 8.24
Naphthalene	ND< 20.6
Toluene	ND< 8.24
1,2,4-Trimethylbenzene	ND< 8.24
1,3,5-Trimethylbenzene	ND< 8.24
m,p-Xylene	ND< 8.24
o-Xylene	ND< 8.24
Miscellaneous	
Methyl tert-butyl Ether	ND< 8.24

ELAP Number 10958 Method: EPA 8021B (GC/MS) Data File: 21543.D

Comments: ND denotes Non Detect
ug / Kg = microgram per Kilogram

Signature: _____
Bruce Hoogestegen, Technical Director

Chain of Custody provides additional sample information

File ID: 041418V3.XLS

PARADIGM ENVIRONMENTAL SERVICES, INC.

179 Lake Avenue
Rochester, NY 14608
(585) 647-2530 * (800) 724-1997
FAX: (585) 647-3311

Chain Of Custody

REPORT TO:			INVOICE TO:				
COMPANY:			COMPANY:			LAB PROJECT #:	CLIENT PROJECT #:
ADDRESS:			ADDRESS:				
CITY:	STATE:	ZIP:	CITY:	STATE:	ZIP:	TURNAROUND TIME: (WORKING DAYS)	
PHONE:	FAX:		PHONE:	FAX:		STD / OTHER	
PROJECT NAME/SITE NAME:	ATTN:		ATTN:			☐ 1 ☐ 2 ☐ 3 ☐ 5	☐
	COMMENTS:						

REQUESTED ANALYSIS

	DATE	TIME	COMPOSITE	GRAB	SAMPLE LOCATION/FIELD ID	MATRIX	NUMBER CONTAINERS										REMARKS	PARADIGM LAB SAMPLE NUMBER
1																		
2																		
3																		
4																		
5																		
6																		
7																		
8																		
9																		
10																		

****LAB USE ONLY****

SAMPLE CONDITION: Check box if acceptable or note deviation:	CONTAINER TYPE: ☐	PRESERVATIONS: ☐	HOLDING TIME: ☐	TEMPERATURE: ☐

Sampled By:	Date/Time:	Relinquished By:	Date/Time:	Total Cost:
Relinquished By:	Date/Time:	Received By:	Date/Time:	
Received By:	Date/Time:	Received @ Lab By:	Date/Time:	P.I.F.

Attachment 8

Soil Boring Logs

EnSol, Inc.
Professional Engineering • Business Consulting
452 Third Street
Niagara Falls, NY 14301
Ph (716) 285-3920 • Fx (716) 285-3928

BORING LOG

BORING I.D.: SB-1

PROJECT: **Geoprobe Investigation** CLIENT: Town of Tonawanda	PROJECT NO.: 04-0008	DATE: 4/6/2004 SHEET NO. ___ OF ___
LOCATION: 303 Woodward Ave., Tonawanda, NY		DAY OF WEEK: S M (T) W T F S
REPORT BY: Kristin Price	CONTRACTOR: Zebra Environmental	CONTRACT NO.:
WEATHER: Wind from: N NE E SE S SW W NW at _____ mph (Sunny) Partly Sunny Partly Cloudy Cloudy Overcast Sprinkles Showers Thunderstorms Other		TEMPERATURE: LOW 28° HIGH _____

Depth (bgs)	Description
0.0	Loose dark gravel + soil
1.0	Hard, dense gray (brown) silty clay
2.0	
3.0	
4.0	
5.0	
6.0	
7.0	
8.0	
9.0	
10.0	
11.0	
12.0	
13.0	
14.0	
15.0	
16.0	
17.0	
18.0	
19.0	
20.0	

Collected headspace samples at:

Depth	PID
0'	
↓	< 3.0 ppm
4'	
↓	< 3.0 ppm
8'	

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BORING LOG

BORING I.D.: SB - 2

PROJECT: **Geoprobe Investigation** CLIENT: Town of Tonawanda	PROJECT NO.: 04-0008	DATE: 4/6/2004 SHEET NO. ___ OF ___
LOCATION: 303 Woodward Ave., Tonawanda, NY		DAY OF WEEK: S M (T) W T F S
REPORT BY: Kristin Price	CONTRACTOR: Zebra Environmental	CONTRACT NO.:
WEATHER: Wind from N NE E SE S SW W NW at ____ mph (Sunny) Partly Sunny Partly Cloudy Cloudy Overcast Sprinkles Showers Thunderstorms Other		TEMPERATURE. LOW 28° HIGH ____

Depth (bgs)	Description
0.0	Sod, Moist brown/black clay
1.0	Hard, drier brown clay
2.0	↓
3.0	Moist layer of silty @ 6" thick
	Hard drier brown clay
4.0	Moist dense brown clay
5.0	↓
6.0	Drier reddish
7.0	↓
8.0	
9.0	
10.0	
11.0	
12.0	
13.0	
14.0	
15.0	
16.0	
17.0	
18.0	
19.0	
20.0	

Samples:
SB - 2A 0-4"
SB - 2B 2'

Collected headspace samples at:

Depth	PID
0' ↓ 4'	< 2.2 ppm
↓ 8'	< 2.6 ppm

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BORING LOG

BORING I.D.: SB-3 ✓

PROJECT: **Geoprobe Investigation** PROJECT NO.: 04-0008 CLIENT: Town of Tonawanda		DATE: 4/6/2004 SHEET NO. ___ OF ___
LOCATION: 303 Woodward Ave., Tonawanda, NY		DAY OF WEEK: S M (T) W T F S
REPORT BY: Kristin Price	CONTRACTOR: Zebra Environmental	CONTRACT NO.:
WEATHER: Wind from: N NE E SE S SW W NW at _____ mph (Sunny) Partly Sunny Partly Cloudy Cloudy Overcast Sprinkles Showers Thunderstorms Other		TEMPERATURE: LOW 28° HIGH _____

Depth (bgs)	Description
0.0	Moist black soil + gravel to 6"
	Moist reddish clay dense
1.0	
2.0	
3.0	
4.0	
5.0	
6.0	
7.0	
8.0	
9.0	
10.0	
11.0	
12.0	
13.0	
14.0	
15.0	
16.0	
17.0	
18.0	
19.0	
20.0	

Samples:
0-4" SB-3A
2' SB-3B

Collected headspace samples at:
Depth PID
0' ↓ < 2.2 ppm.
4' ↓ < 4.0 ppm

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BORING LOG

BORING I.D.: SB-4

PROJECT: **Geoprobe Investigation** CLIENT: Town of Tonawanda	PROJECT NO.: 04-0008	DATE: 4/6/2004 SHEET NO. ___ OF ___
LOCATION: 303 Woodward Ave., Tonawanda, NY		DAY OF WEEK: S M (T) W T F S
REPORT BY: Kristin Price	CONTRACTOR: Zebra Environmental	CONTRACT NO.:
WEATHER: Wind from: N NE E SE S SW W NW at _____ mph (Sunny) Partly Sunny Partly Cloudy Cloudy Overcast Sprinkles Showers Thunderstorms Other		TEMPERATURE: LOW 28° HIGH ____

Depth (bgs)	Description
0.0	wet, soot + soil to @ 8"
	Black wet granular
1.0	layer of firebrick @ 4-6"
2.0	Dense, moist brown clay
3.0	
4.0	↑ drier
5.0	
6.0	↓ moist
7.0	
8.0	
9.0	
10.0	
11.0	
12.0	
13.0	
14.0	
15.0	
16.0	
17.0	
18.0	
19.0	
20.0	

Samples:
SB-4A 0-4"
SB-4B 2'

Collected headspace samples at:
Depth PID
0' ↓ 2.2 ppm
4' ↓ 1.7 ppm
8'

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BORING LOG

BORING I.D.: SB-5

PROJECT: **Geoprobe Investigation** PROJECT NO.: 04-0008 CLIENT: Town of Tonawanda		DATE: 4/6/2004 SHEET NO. ___ OF ___
LOCATION: 303 Woodward Ave., Tonawanda, NY		DAY OF WEEK. S M (T) W T F S
REPORT BY. Kristin Price	CONTRACTOR. Zebra Environmental	CONTRACT NO.:
WEATHER: Wind from: N NE E SE S SW W NW at ____ mph (Sunny) Partly Sunny Partly Cloudy Cloudy Overcast Sprinkles Showers Thunderstorms Other		TEMPERATURE. LOW 28° HIGH ____

Depth (bgs)	Description
0.0	Dirt, sod + cinders
	reddish / orange
1.0	Dark blackish red granular
	gritty
2.0	Soft moist reddish
3.0	Soft gray silty clay
4.0	Soft brown clay
5.0	
6.0	
7.0	Moist - wet blackish sandy material @ 8" thick
	Dark greenish / black silty clay
8.0	Soft black silty clay
9.0	Greenish black
10.0	
11.0	Brown, moist clay
12.0	
13.0	
14.0	
15.0	
16.0	
17.0	
18.0	
19.0	
20.0	

Samples:
SB-5A 0-4'
SB-5B 2'
SB-5C 7'
SB-5D 10'

Collected headspace samples at: •

Depth	PID
0'	
↓	< 1.3 ppm
4'	
↓	< 1.3 ppm
8'	
↓	< 1.3 ppm
12'	

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BORING LOG

BORING I.D.: SB-6

PROJECT: Geoprobe Investigation PROJECT NO.: 04-0008 CLIENT: Town of Tonawanda	DATE: 4/6/2004 SHEET NO. ___ OF ___
LOCATION: 303 Woodward Ave., Tonawanda, NY	DAY OF WEEK: S M (T) W T F S
REPORT BY: Kristin Price CONTRACTOR: Zebra Environmental	CONTRACT NO.:
WEATHER: Wind from: N NE E SE S SW W NW at ____ mph (Sunny) Partly Sunny Partly Cloudy Cloudy Overcast Sprinkles Showers Thunderstorms Other	TEMPERATURE: LOW 28° HIGH ____

Depth (bgs)	Description
0.0	Full stone/gravel to 2'
1.0	↓
2.0	Layer of brick
3.0	Hard reddish clay
4.0	↓
5.0	
6.0	
7.0	
8.0	
9.0	
10.0	
11.0	
12.0	
13.0	
14.0	
15.0	
16.0	
17.0	
18.0	
19.0	
20.0	

Sample:
SB-6A 3'

Collected headspace samples at:
Depth PID
0' ↓ 4' < 1.3 ppm

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BORING LOG

BORING I.D.: SB3-7

PROJECT: PROJECT NO.: 04-0008 **Geoprobe Investigation** CLIENT: Town of Tonawanda	DATE: 4/6/2004 SHEET NO. ___ OF ___
LOCATION: 303 Woodward Ave., Tonawanda, NY	DAY OF WEEK: S M (T) W T F S
REPORT BY: Kristin Price CONTRACTOR: Zebra Environmental	CONTRACT NO.:
WEATHER: Wind from: N NE E SE S SW W NW at _____ mph (Sunny) Partly Sunny Partly Cloudy Cloudy Overcast Sprinkles Showers Thunderstorms Other	TEMPERATURE: LOW 28° HIGH _____

Depth (bgs)	Description
0.0	Dark soil + cinders
1.0	reddish
2.0	
3.0	wet, loose
4.0	
5.0	
6.0	
7.0	
8.0	
9.0	
10.0	
11.0	
12.0	
13.0	
14.0	
15.0	
16.0	
17.0	
18.0	
19.0	
20.0	

Samples:
SB-7A 0-4"
SB-7B 2'

Collected headspace samples at:
Depth PID
0'
↓ < 1.7 ppm
4'

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BORING LOG

BORING I.D.: GW-

PROJECT: **Geoprobe Investigation** PROJECT NO.: 04-0008 CLIENT: Town of Tonawanda	DATE: 4/6/2004 SHEET NO. ___ OF ___
LOCATION: 303 Woodward Ave., Tonawanda, NY	DAY OF WEEK: S M (T) W T F S
REPORT BY: Kristin Price CONTRACTOR: Zebra Environmental	CONTRACT NO..
WEATHER: Wind from: N NE E SE S SW W NW at _____ mph (Sunny) Partly Sunny Partly Cloudy Cloudy Overcast Sprinkles Showers Thunderstorms Other	TEMPERATURE: LOW 28° HIGH _____

Depth (bgs)	Description
0.0	Stone / gravel fill
1.0	
2.0	Mast brown clay
3.0	
4.0	
5.0	Water Black, very moist, pliable, smooth
6.0	material
7.0	to 10'
8.0	
9.0	
10.0	Very hard dense brown clay to 12'
11.0	
12.0	
13.0	
14.0	
15.0	
16.0	
17.0	
18.0	
19.0	
20.0	

Groundwater well
5' slotted bottom
12' deep.
Sample: 8'

Collected headspace samples at:
Depth PID:
0
↓ Background (1.3 ppm)
4'
↓ Background
7-8' > 35 ppm
8'
↓
10' 5-10 ppm
↓
12' 5-8 ppm

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BORING LOG

BORING I.D.: GW-2

PROJECT: Geoprobe Investigation CLIENT: Town of Tonawanda	PROJECT NO.: 04-0008	DATE: 4/6/2004 SHEET NO. ___ OF ___
LOCATION: 303 Woodward Ave., Tonawanda, NY		DAY OF WEEK: S M (T) W T F S
REPORT BY: Kristin Price	CONTRACTOR: Zebra Environmental	CONTRACT NO.:
WEATHER: Wind from: N NE E SE S SW W NW at _____ mph (Sunny) Partly Sunny Partly Cloudy Cloudy Overcast Sprinkles Showers Thunderstorms Other		TEMPERATURE: LOW 28° HIGH ____

Depth (bgs)	Description
0.0	Dark brown loose soil w/ cinders
1.0	
2.0	
3.0	Iron
4.0	Wet Water
5.0	
6.0	Hard, dense brown clay
7.0	
8.0	
9.0	
10.0	
11.0	11.5'
12.0	
13.0	
14.0	
15.0	
16.0	
17.0	
18.0	
19.0	
20.0	

Groundwater well
11 1/2' deep
bottom 5' slotted

Collected headspace samples at:

Depth	PID
0'	
↓	< 1.7 ppm
4'	
↓	< 2.2 ppm
8'	
↓	< 2.2 ppm
11 1/2'	

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BORING LOG

BORING I.D.: GW-3

PROJECT: **Geoprobe Investigation** PROJECT NO.: 04-0008 CLIENT: Town of Tonawanda		DATE: 4/6/2004 SHEET NO. ___ OF ___
LOCATION: 303 Woodward Ave., Tonawanda, NY		DAY OF WEEK: S M (T) W T F S
REPORT BY: Kristin Price	CONTRACTOR: Zebra Environmental	CONTRACT NO.:
WEATHER: Wind from: N NE E SE S SW W NW at ____ mph (Sunny) Partly Sunny Partly Cloudy Cloudy Overcast Sprinkles Showers Thunderstorms Other		TEMPERATURE: LOW 28° HIGH ____

Depth (bgs)	Description
0.0	Stone + gravel fill to 2'
1.0	↓ layer soft gray clay @ 3"
2.0	layer black granular @ 3"
3.0	Soft brown clay Drier brown clay.
4.0	Moist gray silty clay
5.0	↓ Some water (perched)
6.0	Moist brown silty clay
7.0	↓
8.0	Moist reddish silty clay
9.0	↓
10.0	↓ 11'
11.0	
12.0	
13.0	
14.0	
15.0	
16.0	
17.0	
18.0	
19.0	
20.0	

Collected headspace samples at:

Depth	PID
0'	
↓	< 4.6 ppm
4'	
↓	< 3.0 ppm
8'	
↓	< 2.2 ppm
11'	

Attachment 9

Correspondence

1. AGM approval (NYSDEC, December 9, 2003)
2. Site Characterization Plan approval (NYSDEC, May 11, 2004)
3. IRM letter (EnSol, May 21, 2004)
4. IRM approval (NYSDEC, June 8, 2004)
5. IRM letter (supplemental) (EnSol, June 14, 2004)

New York State Department of Environmental Conservation
Division of Solid & Hazardous Materials, Region 9
270 Michigan Avenue, Buffalo, New York, 14203-2999
Phone: (716) 851-7220 • **FAX:** (716) 851-7226
Website: www.dec.state.ny.us

Erin M. Crotty
Commissioner

December 9, 2003

Mr. Nicholas Morreale
EnSol, Inc.
452 Third Street
Niagara Falls, New York 14301

Dear Mr. Morreale:

Town of Tonawanda Landfill, #15S29
Alternate Grading Material Request
Excelsior Steel Ball Site

This is in response to your letters dated November 20, 2003 and December 4, 2003 which provide the results of analytical testing on material to be generated during the planned demolition of buildings at the Excelsior Steel Ball site, located at 303 Woodward Avenue in the Town of Tonawanda. You have requested approval to accept for disposal non-hazardous, construction and demolition debris limited to soil, brick, concrete, wood and block wastes which are proposed for use as AGM at the Town of Tonawanda landfill. The estimated volume of these wastes that is to be delivered to the landfill is 4000 tons.

Based upon the information provided in your submittals, the Department hereby approves the referenced waste streams to be accepted at the Town of Tonawanda landfill for use as alternate grading material. This approval is strictly limited to the material characterized by the analytical data contained in your submittals, therefore, **no wastes other than the soil, brick, concrete, wood and block can be accepted at the landfill.** The contents of the old industrial buildings, including but not limited to, manufacturing equipment, utility lines, insulation, piping, floor and/or ceiling tiles, wallboard, etc., are not included in this approval. Placement and handling of the material must be in accordance with the Operations and Maintenance Manual, revised May 2001, prepared by EnSol, Inc.

Additionally, as was previously agreed, all construction and demolition debris, including the waste from the Excelsior Steel Ball site is to be covered with an adequate layer of soil at the end of each work week, i.e., by COB Friday.

Please note that the Department's approval for the use of the above referenced material as AGM at the Town of Tonawanda landfill does not relieve the Town from having to comply with any other applicable local, state and/or federal requirements.

If you have any questions regarding this matter, please call me at 851-7220.

Sincerely,

Dennis R. Weiss, P.E.
Environmental Engineer II

DW:dw
weiss\morreale10.ltr

cc: Mr. Mark Hans, Regional Solid Materials Engineer
Mr. Dan King, Regional Environmental Remediation Engineer
Mr. John Camilleri, Town of Tonawanda

New York State Department of Environmental Conservation
Division of Environmental Remediation, Region 9
270 Michigan Avenue, Buffalo, New York, 14203-2999
Phone: (716) 851-7220 • **FAX:** (716) 851-7226
Website: www.dec.state.ny.us

Erin M. Crotty
Commissioner

May 11, 2004

Mr. Paul Kranz
Mr. Ken Swanekamp
Erie County Department of Environment & Planning
95 Franklin Street
Buffalo, New York 14202

Mr. Robert Morris
Director of Technical Support
Town of Tonawanda
Room 20, Municipal Building
2919 Delaware Avenue
Kenmore, New York 14217

Gentlemen:

Excelsior Steel Site
Tonawanda(T), Erie County
VCP No. V-00685

In my March 17, 2004 discussions with Mr. Paul Kranz, I verbally accepted the site sampling proposal for the Excelsior Steel (303 Woodward) project as presented in the March 10, 2004 e-mail submission from Ensol, Inc. This action was in part to allow for confirmatory sampling within the building footprint in conjunction with on-going backfill operations. In general, the backfill placement marks the end of the demolition phase of the project and the start of the site investigation phase established by the Voluntary Agreement between the Town of Tonawanda, Eire County and this Department.

Subsequently, the March 2004 Site Characterization Plan (i.e. site investigation work plan), also prepared by EnSol, Inc., was reviewed and found to be generally acceptable. The plan is therefore approved with the following comments and conditions:

[Note: These items can be addressed in the final Site Investigation report which will summarize all sampling activities, provide evaluation of site contaminant which may remain, and present remedial actions (as necessary) to address these residuals.]

1. The means by which sample quality assurance and quality control was achieved must be detailed and ELAP certification of the analytical lab utilized must be confirmed.

2. The final disposition of the un-sampled transformer (T-11) should be noted.

3. For clarification, it should be noted that confirmatory (Limits of Excavation) samples within the building footprint were collected after approximately 2 feet of soil was removed, but prior to backfilling with clean fill. This is particularly important when evaluating residual contamination remaining at the site and potential threats it may present. In addition the type of sampling utilized (composite vs. grab) should be so noted.

On April 19-20, 2004, EnSol provided this office with tabulated analytical results from the site investigation along with appropriate site mapping. I have forwarded copies of these items to Mr. Matt Forcucci, New York State Department of Health (DOH). Further, I understand that TCLP data regarding soil/waste fill is forthcoming. After both this office and DOH have completed reviews of this information, I suggest that we meet to discuss the sampling results as well as what future site actions may be necessary to complete this project.

Please do not hesitate to call if you have any questions regarding the above.

Sincerely,

Daniel K. King, P.E.
Regional Hazardous Waste Remediation
Engineer

DKK/tml

cc: Mr. Matt Forcucci, NYSDOH
Mr. Robert Robinson, Ensol, Inc.
Mr. Jim Jones, Ensol, Inc.

EnSol, Inc.
Environmental Solutions

452 Third Street
Niagara Falls, NY 14301

Professional Engineering • Business Consulting

Ph (716) 285-3920 • Fx (716) 285-3928

May 21, 2004

Dan King
New York State DEC - Region 9
Division of Environmental Remediation
270 Michigan Ave.
Buffalo, NY 14203

Re: 303 Woodward Ave.
Interim Remedial Measures – Additional Excavation
PN: 04-0008

Dear Mr. King;

EnSol has prepared this letter report to address the Interim Remedial Measures (IRM) proposed for the above referenced site. The purpose of the IRM is to present the data that was collected after demolition and removal of site structures and equipment, and to propose additional excavation of material based on this data. This IRM letter is a follow up to the ***Site Characterization Plan*** dated March 2004. The objectives of the ***Site Characterization Plan*** were to confirm that soil was removed to the degree acceptable to the New York State Department of Environmental Conservation and to document the environmental conditions at the site prior to returning the property to service. The IRM has been prepared at the request of NYSDEC staff, who have oversight of the project. This submittal includes a description of the sampling that was performed, evaluation of the analytical data, and a discussion of proposed remedial measures.

Sampling

The sampling and analysis program proposed in Section 4.0 of the ***Site Characterization Plan*** included the following:

- *Field screening limit of excavation sampling* - During the building demolition (March 15 - March 22, 2004) the underlying soil was monitored and sampled to ensure that the contaminated soil found during the pre-demolition site investigation was properly removed. Material excavated from the building footprint areas was monitored with a Photoionization Detector (PID). Soil was excavated until PID readings were below 50 ppm, to an average depth of two to three feet. (PID logs will be included in the final remedial report.) For each of the 11 areas sampled, composite samples of the underlying soil were then taken (S1 through S11), as shown on Figure 1, Sample Location Plan. Analytical parameters and results were tabulated and are presented on Table 1.
- *Soil and groundwater sampling* - Section 4.0 of the ***Site Characterization Plan*** called for seven borings and three groundwater monitoring wells to be installed in

order to characterize the site conditions outside of areas impacted by manufacturing activities. This work was performed on April 6, 2004. Soil samples (SB-2A through SB-7B) taken from each boring at varying depths were analyzed for semi-volatile organic compounds (STARS 8270 list) and RCRA 8 Metals. Additional samples (SB-8A and SB-9B) were taken on April 21, 2004 and sent to the lab for RCRA 8 Metals analysis only. Sample locations are presented on the attached Figure 1. Test results have been tabulated and are presented on Table 2.

Groundwater monitoring wells GW-1, GW-2 and GW-3 were installed on April 6, 2004. Water samples were collected from GW-1 and GW-2. Sample GW-1 was analyzed for RCRA 8 Metals and Total Volatile Organics (8021 STARS list) and Sample GW-2 was analyzed for RCRA 8 Metals, volatile organic compounds (8021 STARS list) and semi-volatile organic compounds (8270 STARS). Groundwater was found at well GW-3 but at a level too low to obtain a laboratory sample. The results were compared to NYSDEC Groundwater Standards and are summarized in Table 3.

Findings

The results of the testing were reviewed and discussed among representatives of the Town of Tonawanda, Erie County Department of Environment and Planning and EnSol, Inc. Low levels of semi-volatile contaminants and metals were detected in the majority of the soil and groundwater samples.

Of soil boring samples SB-2A through SB-7B, the samples taken at 0"-4" indicated that a higher degree of contamination was present in the upper two feet of soil than at depths greater than two feet. However, the test results for the four samples from soil boring SB-5 indicated levels of lead that were of concern. A TCLP analysis for RCRA 8 Metals was performed on a composite of the samples from boring SB-5. The results of the TCLP analysis indicated that the concentration of lead in the sample was 3.5 ppm, which is below the 5.0-ppm limit for disposal at a solid waste landfill.

All other parameters in the soil and groundwater samples were determined to be at acceptable levels. Test results indicate that the subsurface soil and groundwater have not been significantly impacted by previous industrial activities at the site.

Proposed Remedial Measures

Due to the elevated levels of metals found in the samples from the upper two feet of areas outside the building footprints, it is proposed that two feet of soil be removed from a majority of the property; areas 4, 5, 7, 8 and 9 - as indicated on the attached Figure 2. This includes all soil-covered areas at the site except for the front of the property.

The soil has been characterized for disposal at the Town of Tonawanda landfill. It is estimated that approximately 2800 to 3000 cubic yards of soil will be removed and

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Website: www.dec.state.ny.us

Erin M. Crotty
Commissioner

June 8, 2004

Mr. Paul Kranz
Mr. Ken Swanekamp
Erie County Department of Environment & Planning
95 Franklin Street
Buffalo, New York 14202

Mr. Robert Morris
Director of Technical Support
Town of Tonawanda
Room 20, Municipal Building
2919 Delaware Avenue
Kenmore, New York 14217

Gentlemen:

Excelsior Steel Site
VCP No. V00685-9

This office has reviewed and concurs with the Interim Remedial Measure (IRM) work plan proposed in the Ensol, Inc. letter of May 21, 2004. Briefly, the IRM will consist of removal and off-site disposal of the upper 2 feet of site soils from areas 4,5,7,8,and 9 at the referenced site. Health and Safety plans employed for previous remedial work at the site should be implemented for the IRM.

The proposed IRM, coupled with previous demolition, soil removal, tank removal, and clean fill placement activities, will result in the elimination of site contaminant sources and establishment of a 2 feet layer of clean fill throughout virtually the entire site. As demonstrated by previous site soil sampling, residual contaminants in the form of old ash-like fill will remain in areas 5 and 7 at depths from 3 to 10 feet. TCLP data indicates that this fill material is not a characteristic hazardous waste and analysis of ground water samples from site monitoring wells suggests that no leaching from the fill is occurring.

It is anticipated that successful completion of the proposed IRM will allow for commercial/industrial redevelopment without further remedial action. However, the determination and acceptance of a final site remedy will require review and approval by both the New York State Department of Health and this department. This decision will be based on the effectiveness of the remedial work completed to date, the success of the IRM proposed and the site's intended use. At a minimum, the presence of residual site contaminants below 2 feet depths would require that the final remedy include imposition of an environmental easement (deed notification) and development of a soils management plan for future excavation activities.

Upon completion of the IRM, it is recommended that we meet to review the results of the IRM and discuss the next steps leading to a final site closure report.

Should you have any questions regarding the above, please do not hesitate to contact me at 716/851-7220.

Sincerely,

Daniel K. King, P.E.
Regional Hazardous Waste Remediation
Engineer

cc: Mr. Matthew Forcucci, NYSDOH
Mr. James Jones, Mr. John Battaglia, Ms. Kristen Price, Ensol Inc.

EnSol, Inc.
Environmental Solutions

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Niagara Falls, NY 14301

Professional Engineering • Business Consulting

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June 14, 2004

Daniel King
New York State DEC - Region 9
Division of Environmental Remediation

Mr. Matt Forcucci
New York State Department of Health

Re: 303 Woodward Ave. - Excelsior Steel Ball
Interim Remedial Measures Additional Site Clean-up Requirements
PN 04-0008

Gentlemen,

The following letter has been prepared as a supplement to our May 21, 2004 letter report regarding the interim remedial measure proposed for the Excelsior Steel site located at 303 Woodward Ave., Tonawanda, NY. A minimum of two feet of soil has been removed, and replaced with clean soil at the site in order to isolate potential below-grade contaminated soil. In addition to the removal and isolation of this soil, several measures will be included in the final Site Investigation Report. These steps will ensure the integrity and appropriateness of the interim remedial actions.

1) Deed Restrictions –The deed restrictions will specify appropriate reuses of the property in consideration of contaminants that will remain on site subsequent to remediation. Restrictions will identify the appropriate site uses as exclusively commercial/industrial. The deed restrictions will reference such associated documentation as the Soil Management Plan (SMP) and site reporting requirements.

2) Site Specific Soil Management Plan – The deed restrictions will refer to a plan that will specify the necessary action that must be taken when performing soil excavation and handling at the site. The soil management plan will be referenced in the deed restrictions and will be included in the Final Site Investigation Report.

3) Annual Inspection and Reporting – The Final Site Investigation Report will specify the requirements for annual inspection and reporting to the DEC for adherence to the SMP and deed restrictions.

We hope this meets with your approval. Please contact me if you have any questions or comments:

Sincerely,

Kristin Price

Kristin Price
EnSol, Inc.

Enclosures:

Figure 1	Sample Location Plan
Figure 2	Excavation Plan
Table 1	Limit of Excavation Sample Analysis
Table 2	Soil Boring Sample Analysis
Table 3	Groundwater Sample Analysis

cc: Paul B. Kranz, P.E. – Erie County Department of Environment and Planning
Kenneth J. Swanekamp – Erie County Department of Environment and Planning
Jim Jones – Town of Tonawanda
Mark Smith – Erie County Industrial Development Agency
John B. Battaglia, P.E. – EnSol, Inc.

SHEETS

Sheets 2-1 and 2-2	Building Demolition
Sheet SR-1	Soil Replacement Summary
Sheet 1 of 1	TVGA Topographic and Boundary Survey and Proposed Legal Description

Proposed Legal Description
303 Woodward Avenue
Town of Tonawanda

All that tract or parcel of land situate in the Town of Tonawanda, County of Erie and State of New York, being part of Lot Number 43, Township 12, Range 8 of the Holland Land Company's Survey, bounded and described as follows:

Beginning at a point in the northerly line of Woodward Avenue at the southeasterly corner of lands conveyed to Union Carbide Industrial Gases, Inc. by deed recorded in the Erie County Clerk's Office Liber 9978 of Deeds at Page 454.

Thence easterly along said northerly line of Woodward Avenue, 20.36 feet to the westerly line of lands now or formerly owned by Niagara Mohawk Power Corporation.

Thence northerly at an interior angle of 100° 49' 50" and along said Niagara Mohawk Power Corporation's lands, 514.16 feet to a corner of said lands conveyed to Union Carbide Industrial Gases, Inc.

Thence along said lands of Union Carbide Industrial Gases, Inc. the following six courses:

Westerly at an interior angle of 79° 10' 10", 302.03 feet by record and 302.05 feet measured to a point.

Southerly at right angles 115 feet to a point.

Westerly at right angles 50 feet to a point.

Southerly at right angles 188.67 feet to a point.

Easterly at right angles 273.59 feet to a point.

Southerly at an exterior angle of 79° 10' 10", 204.98 feet to the point or place of beginning, containing 2.2 acres of land, more or less.